VISION DOCUMENT
2036 | 2047

ODISHA VISION

2036 | 2047

Viksit Odisha for Viksit Bharat

ODISHA VISION

2036 AND 2047

VIKSIT ODISHA FOR VIKSIT BHARAT

Acknowledgement

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Odisha Vision 2036 & 2047 was formally unveiled by the **Hon'ble Prime Minister of India, Shri Narendra Modi,** on **20th June 2025**. The document has been uploaded in the official **Odisha Vision portal** *(https://vision.odisha.gov.in)* as well as the website of the **Planning & Convergence Department, Government of Odisha**, for the information and reference of the general public, with effect from the said date.

June 2025

Planning and Convergence Department

GOVERNMENT OF ODISHA

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Odisha Vision 2036 & 2047 is a forward-looking and evolving document shaped by multiple consultation levels. It is not a static plan but a dynamic framework intended to adapt to emerging challenges and opportunities. All targets and projections are indicative, based on current data, assumptions and expert consultations.

सत्यमेव जयते

MOHAN CHARAN MAJHI
Chief Minister, Odisha

PREFACE

With the divine grace of Mahaprabhu Shree Jagannath, I am honoured to present the Odisha Vision 2036 & 2047-a people-first blueprint for our State's transformation in the Amrit Kaal of India's development journey to become Viksit Bharat.

This Vision is not just a policy document. It is the collective voice of Odisha's people. Over 3.2 lakh citizens, from all corners of Odisha and across the global Odia diaspora, have come forward with their insights, ideas, and aspirations. Experts, farmers, workers, students, women leaders, industry representatives, and community elders have all contributed to this shared roadmap for a Viksit Odisha.

We are proud that this journey is being undertaken with the strength of a double-engine sarkar a Government in Odisha that works in sync with the visionary Government at the Centre. On behalf of the state, I express my heartiest gratitude to the Hon'ble Prime Minister of India, Shri Narendra Modi ji, for his constant support, personal care, and unwavering commitment to the development of Odisha. Under his leadership, our State has found a responsive partner in Delhi, and this partnership is powering our accelerated growth and setting up a solid foundation to achieve the goals for Viksit Odisha.

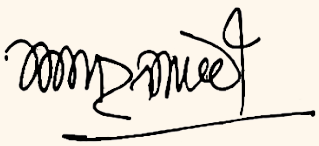
We believe Odisha is ready to become the first bogie of India's Viksit Bharat express a frontline State showing the way through inclusive governance, youth-led innovation, and future-ready infrastructure.

The Odisha Vision 2036 & 2047 sets forth our ambition to grow into a USD 1.5 trillion economy by 2047, rooted in the principles of sustainability, equity, and opportunity for all. It is built on six pillars that reflect our deepest priorities: rural empowerment, people-first development, legacy and pride, prosperity for all, technology leadership, and citizen-centric governance.

As part of this vision, we have also launched a focused "36-for-36" agenda a curated set of 36 high-impact flagship initiatives aimed at achieving tangible, transformative change by 2036 across every key development sector.

On the completion of one year of our Government, I wish to reaffirm our unwavering commitment to implement the ideas and action contemplated in this Vision. I will personally oversee and monitor progress to ensure that Odisha not only aspires for greatness, but achieves it in reality with speed, discipline, and impact.

Let this be a living, evolving document one that grows with time by adapting to emerging challenges and opportunities, and guides us all in our journey to build a Viksit Odisha for a Viksit Bharat. This is our shared promise to every Odia. This is our gift to the generations to come.



MOHAN CHARAN MAJHI
Chief Minister, Odisha

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TRANSFORMING ODISHA: MACRO-ECONOMIC ROADMAP FOR 2036 AND 2047

Summary

Odisha, a land of unparalleled cultural heritage and immense potential, is embarking on an ambitious journey to emerge as a USD 1.5 trillion economy by 2047. This bold Vision reflects the State's commitment to securing a prosperous future for its citizens while contributing significantly to India's growth story. Key areas of focus include:

- **A path of progress and inclusive development**

  To realise this historic milestone, Odisha will require a cumulative investment of INR 100 lakh crore in nominal terms, focusing on transforming the State's economic and social landscape. The roadmap prioritises the well-being of the people, fostering equitable growth, and propelling Odisha into the league of high-growth economies

- **Public-private synergy for accelerated growth**

  Central to achieving this Vision is a robust investment model that leverages public-private partnerships. The investment is projected to follow a 1:2 ratio, with 67% expected from the private sector

Key drivers of transformation

Odisha's journey towards a USD 1.5 trillion economy will be guided by strategic shifts and innovative initiatives:

- **Sectoral shifts**: Transitioning from primary to secondary and tertiary sectors, while focusing on value-added industries and advanced technologies
- **Enhanced efficiency**: Investments in modern infrastructure, digital innovation, and skill development to drive operational efficiencies and unlock new opportunities
- **Inclusive growth**: Strengthening agriculture, manufacturing, and services to ensure holistic development that benefits every corner of the State

This transformational journey is not just about numbers; it is a commitment to the people of Odisha.

Capital Catalysts for a Transformed Odisha

To realise the Vision of Odisha as a **USD 1.5 trillion economy by 2047**, a bold, future- oriented financing strategy must underpin every development ambition. Odisha's economic ascent shall be powered by **innovative capital models, global partnerships, empowered communities, and a thriving diaspora**. With over **INR 100 lakh crore of cumulative investments** anticipated—of which nearly **INR 67 lakh crore is expected from private and institutional sources**—Odisha is poised to redefine financial leadership among Indian states.

The momentum will be driven by a strategic reallocation of growth levers across the economy:

- **Sectoral diversification towards higher-value drivers**: Odisha will pivot from a primary-sector-led economy to one anchored in secondaryand tertiary value chains, with the share of:
  - **Primary sector** reducing from **30% in 2024 to 18% in 2047**
  - **Secondary sector** expanding to **37%**, led by industrial scale-up and port-led growth
  - **Tertiary sector** rising to **45%**, making it the largest contributor to GSVA
- **Urbanisation as a multiplier of investment absorption** The State aims to **triple its urbanisation rate** from **17% to 60%**, unlocking new urban centres, service hubs, and infrastructure corridors that will dramatically enhance investment viability and economic productivity
- **Tourism, education, and services as flagship tertiary anchors** Odisha will:
  - Grow the number of premium hotel keys **nine-fold** (from ~2,800 to ~25,000)
  - Establish **two world-class edu-cities** to meet global demand for skilled professionals
  - Emerge as a pan-Indian hub for **IT/ITeS, fintech, aviation, and knowledge services**
- **Transformation within the primary sector** The contribution of **fisheries and animal husbandry** will rise from **12% to 33%** of primary GSVA by 2047, enabled by value chain modernisation, sustainable practices, and digital agritech infusion

1. Economic growth targets

Odisha's Vision 2047 aims to transform the State into a land of opportunity and prosperity, leveraging its natural wealth and cultural heritage to empower every citizen to lead a better, healthier, and happier life. This ambitious Vision sets the stage for a transformative journey towards economic growth, inclusivity, and sustainability.

1.1 Gross State Domestic Product (GSDP) projections

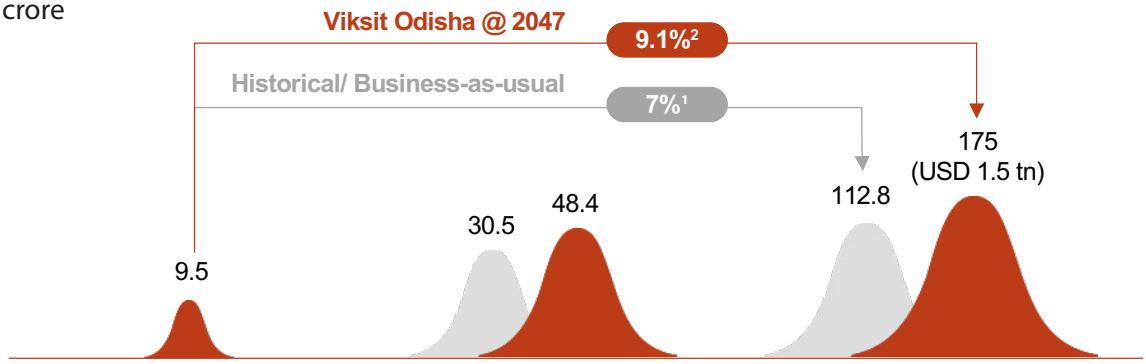
Under a 'Business-as-usual' scenario, Odisha's GSDP is expected to treble to over USD 300 billion by 2036. However, Odisha is determined to surpass this projection, setting an **ambitious target of USD 500 billion GSDP by 2036**. By 2047, the State envisions growing its economy fifteenfold to reach **USD 1.5 trillion, raising its per capita income to USD 28,000 per annum**, aligning with many high-income nations.

This is illustrated below:

EXHIBIT 1.1

Odisha's nominal GSDP (Real growth rate)

INR lakh crore



Per capita

INR 1.8L
Below India average of INR 2L[4]

INR 9.6L
Comparable to Brazil[4] today

INR 32L
Comparable to Portugal[4] today

[1] Inflation considered - 5.1% (12 year historical); USD-INR currency depreciation at 2.6% (20-year historical)

[2] Number represents real GSDP CAGR; Business-as-usual CAGR computed as historical CAGR for FY12-20 (pre-covid)

[3] 2036 and 2047 represent FY37, and FY48;

[4] World Bank

1.2 Wellness and equity goals

Odisha's Vision emphasises a balanced approach to economic growth and the welfare of its people. The State aims to achieve the following goals that ensure the benefits of growth reach all citizens, fostering a more inclusive and equitable society.

EXHIBIT 1.2

Goals for 2036 and 2047

Wellness				
Indicators	**Unit**	**Current**	**2036**	**2047**
Life expectancy	*years*	70	75	81
Children under 5 who are malnourished	%	18%	12%	5%
Maternal mortality ratio	*No. of maternal deaths per one lakh live births*	119	<50	<5
Average Air quality index *(AQI)*	-	50-100	60	50
Renewable share	*% of total generation*	10%	45%	55%
Prosperity				
Indicators	**Unit**	**Current**	**2036**	**2047**
Nominal GSDP	*USD bn*	113	500	1500
Per capita income, nominal	*USD*	2.2k	9k	28k
Non-farm jobs	*million*	~11	19	24
Share of manufacturing	*% of State GSVA*	23%	30%	34%
Urbanisation rate	*%*	17%[3]	40%	60%
Equity and dignity				
Indicators	**Unit**	**Current**	**2036**	**2047**
Women LFPR *15+ years*	*%*	48%	60%	70%
Multi-dimensional poverty	*headcount ratio*	16%[1] (FY21)	11%	<5%
Higher Secondary Education - GER[1]	*%*	44%	70%	90%
Tertiary GER[1] for SEDGs[2]	*%*	-	30%	50%

[1] Gross Enrollment Ratio

[2] Socio-Economically Disadvantaged Groups (SEDGs) as defined in National Education Policy covers SC, ST, OBC, EWS, Women, Physically Challenged, transgender, first-generation learners among others

[3] Census 2011

Source: Odisha Economic Survey FY24, National Family Health Survey-5, State Pollution Control Board Odisha, Departmnt of Energy Odisha, AISHE report 2022, UDISE report 2022

Odisha is setting its sights high—with a clear, measurable, and inclusive vision for the years **2036** and **2047**. At the heart of this vision is a commitment to ensuring every citizen leads a **healthier, longer**, and **more dignified life**. **Life expectancy** is set to rise from **70 to 81 year**s, while **maternal mortality** will drop dramatically—from **119 to just 5** per lakh live births. The State will combat **child malnutrition**, reducing it from **18% to 5%**, and work towards a cleaner environment, improving **air quality** to an **AQI of 50**. Odisha also aims to lead in sustainability, with the r**enewable energy share** increasing from **10% to 55%** of total generation.

Economic transformation is central to Odisha's promise of **prosperity for all**. The State's economy is projected to grow over **13 times**, from **USD 113 billion to USD 1.5 trillion** by 2047, while **per capita income** will rise from **USD 2,100 to USD 28,000**. Odisha will generate **millions of new non-farm jobs**, increasing from **~11 million to 24 million**, and enhance the **manufacturing sector's contribution** from **23% to 34%** of the State's economy. As cities become engines of opportunity, **urbanisation** is set to accelerate—from **17% to 60%**—creating a more connected, vibrant Odisha.

Equity and dignity will remain guiding principles on this journey. Odisha will ensure more **women participate in the workforce**, raising the **labour force participation rate** from **53% to 70%**. **Multidimensional poverty**, which today affects **16%** of the population, will fall to **below 5%**, ensuring no one is left behind. Education will be a powerful equaliser—with **higher secondary enrolment** rising from **44% to 90%**, and **tertiary enrolment** for **socially and economically disadvantaged groups** reaching **50%**. Through these bold goals, Odisha reaffirms its mission to build a **just**, **empowered**, and **opportunity-rich future** for every citizen.

2. Strategic growth vectors

2.1 Key sectors driving growth

Odisha's economic growth will be powered by rapid growth in key sectors such as manufacturing, tourism, IT, services, and logistics. These sectors are projected to significantly contribute to the State's Gross State Value Added (GSVA), as outline below:

EXHIBIT 1.3

Nominal GSVA; All numbers in USD billion

	Sector	FY25 (GSVA)	2047 (GSVA)	CAGR (real)
Primary	Agriculture	14	100	3-4%
	Fisheries and animal resources	5	80	9-10%
	Mining	9	60	7-8%
Secondary	Manufacturing	23	400	11-12%
	Construction	8	35	5-6%
	Utilities inclusing power	3	40	8-9%
Tertiary	Trade and hotels	10	230	11-12%
	Other (incl. education, health, culture, public admin.)	12	145	11-12%
	Transport, storage and communication	6	80	10-11%
	Real estate and professional services	6	135	9-10%
	Financial Services	3	40	9-10%
	Total GSDP[4] (calculated as GSVA + Taxes – Subsidies)	**USD 113 bn** INR 9.5 L cr[5]	**USD 1.5 tn** INR 175 L cr[5]	**8-10%**

[1] Including utilities other than power, trade and repair services, transport and storage, public administration and other services (excluding health and education)

[2] Growth multiplier of real GSDP in FY24 vs 2047 in INR terms

[3] 2047 represents FY48

[4] GSDP = GSVA (sectoral) + net taxes on products Ð subsidies. Sectoral GSVA shown here totals to USD 99 bn (FY25) and USD 1.345 tn (2047). The remaining amount reflects net taxes and residual items

[5] Including taxes of INR 108k Cr (FY24) and INR 2,600k Cr (2047)

2.2 Employment generation

Strategic investments in the key sectors outlined above, is expected to create over one crore incremental jobs by 2047, providing a substantial boost to employment and economic activity across the State. This is detailed below:

EXHIBIT 1.4

Agriculture | Manufacturing and construction | Services

	FY24	2036[2]	2047[2]
Total jobs (cr)	**~2.2**	**~2.8**	**~3.3**
Jobs by industry (cr)	1.1 | 0.6 | 0.6	1 | 0.8 | 1	0.9 | 1.1 | 1.3
Emerging employer sectors	Farming, construction, wholesale and retail	Tourism, value-added manufacturing, transport and storage, IT/ITeS, professional services	IT / ITeS, Advanced industries, research and knowledge-based services, blue economy, financial services
LFPR (15+)[1]	**~63%** Vis-à-vis 58% India average	**~74%**	**~82%** Equiv. to Germany today
LFPR[1] women (15+)	**~48%** | **0.9 cr employed** Vis-à-vis 40% India average	**~60%** | **1.1 cr employed**	**~70%** | **1.4 cr employed** Vis-à-vis 70% in Vietnam

[1] Labour force participation rate of persons of age 15+ years

[2] 2036 and 2047 stand for FY37 and FY48 respectively

3. Investment requirement

To achieve its Vision, Odisha will require an investment of around INR 100 lakh crore by 2047, with 70-75% expected from the corporate sector. The State and Central Government will need to invest around INR 22-25 lakh crore towards core infrastructure and social sector development over the next 10-15 years. The breakup of investments required across key sectors is as shown below:

EXHIBIT 1.5

Sector		**Approx. cumulative investments needed by 2047** in USD bn | Nominal, calculated at the mid-point year - 2036[4]	**Investments from Govt.**
Primary	Agriculture	30	34-36%
	Fisheries and animal husbandry	15	34-36%
	Mining	115	14-16%
Secondary	Manufacturing	650	8-12%
	Construction	40	48-52%
	Utilities inclusing power	70	68-72%
Tertiary	Trade and hotels	240	18-22%
	Other (inc. education, health, culture, public admin.)	220	48-52%
	Transport, storage and communication	140	48-52%
	Real estate and professional services	100	8-12%
	Financial Services	50	8-12%
Total Investments (in nominal terms)		**~USD 1.7 tn** INR 100 L cr	22-25%

[1] Including transport and storage, public administration, other services excl. education and health

[2] Growth multiplier of real investment till 2036 vs Gross Fixed Capital Formation in FY20

[3] Ratio of annual required investment (in real terms) to current Gross Fixed Capital Formation (FY20; as reported by Government of Odisha)

[4] GDP deflator impact taken till 2036. i.e. at the mid-point between 2024 and 2047

Some of the key takeaways from this are:

- **Manufacturing as a core focus**: Manufacturing stands out with a total investment requirement of USD 287 billion, supported by USD 30 billion in Government investments, indicating its priority in Odisha's industrialisation efforts
- **Critical role of infrastructure and utilities**: Utilities (electricity, gas, water, etc.) and infrastructure sectors like construction require substantial public investment (USD 22 billion and USD 9 billion, respectively), underlining the Government's focus on foundational sectors to create a conducive business environment
- **Diverse sectoral contributions**: Other services, including education, healthcare, and social services, require USD 71 billion, with USD 37 billion allocated from public investments, emphasising the commitment to holistic socio-economic development
- **Boost to emerging sectors**: Financial services, with a total investment multiplier of 13.2, and communication and broadcasting services indicate emerging areas of focus, requiring targeted investments to unlock their full potential

The investments will be driven by:

- **Corporate investments as a growth catalyst**: A robust public-private investment model is projected, with 70-75% of the total investment coming from the corporate sector. To attract top investors, the State will develop projects, conduct roadshows to attract investors, and provide facilitation support to ensure smooth project implementation
- **Key role of Government facilitation**: Over the next 10-15 years, the State and Central Governments are projected to mobilise INR 22-25 lakh crore for infrastructure, social development, and technology adoption. This will create a conducive environment to attract and accelerate corporate investments

Odisha: India's New Capital Magnet

Odisha is poised to become India's most trusted and dynamic capital destination—where economic ambition meets social purpose, and global confidence aligns with grassroots empowerment. Guided by a long-term vision for 2036 and 2047, the State's capital strategy rests on three transformative pillars:

- **Strategic Resource Mobilisation: Odisha as India's New Capital Magnet** Odisha aims to build a progressive and transparent financial ecosystem that channels capital into high-impact, future-focused priorities
  - Fosters a financial architecture grounded in trust, accountability, and long-term value creation
  - Seeks to unlock new forms of public and private investment while upholding fiscal credibility.
  - Encourages investments that serve both economic outcomes and social good, with an emphasis on sustainability and inclusion

- **Remittance-Led Prosperity: The Global Odia Growth Engine** Recognising the strength of its people abroad, Odisha sees its diaspora not just as contributors, but as partners in progress
  - Embraces global Odias as ambassadors of development and prosperity
  - Aims to transform remittance flows into long-term assets that benefit both migrant families and home communities
  - Builds financial pathways that empower global citizens to invest, co-own, and give back with confidence and pride

- **Ecosystem-Based Growth Enablement: Odisha as the Capital of Innovation** Capital in Odisha will not merely flow to centres of power—it will fuel ideas, enterprises, and communities across every district
    - Supports innovation-led growth, especially at the grassroots and district level
    - Encourages inclusive capital ecosystems that empower women, youth, cooperatives, and local entrepreneurs
    - Champions a results-oriented model of development where impact, not intent, drives progress

As Odisha advances on its journey to 2036 and 2047, these pillars will shape a new development compact—one where capital is a collective tool for upliftment, not a privilege for the few. In doing so, the State reaffirms its belief that every individual has a stake in the future—and a role in building it.

A Confident March Towards 2047: Financial Innovation Driving Inclusive Transformation

Odisha's journey to becoming a **USD 1.5 trillion economy by 2047** will be fuelled by a **new architecture of capital mobilisation**—rooted in innovation, resilience, and partnerships. With **INR 100 lakh crore** of cumulative investments envisaged, the State is building a balanced investment model where **nearly 70–75% of funding will come from the private and corporate sector**, while public institutions will play a catalytic and enabling role.

- **Key investment dynamics include**:
  - **Manufacturing as a cornerstone**, with a projected capital need of **USD 287 billion**, underpinned by USD 30 billion in public investments
  - **Infrastructure and utilities** to receive targeted public investment of over **USD 31 billion**, enabling urbanisation, logistics efficiency, and a seamless business environment
  - **Social sectors including education, health, and public administration** to see investments of **USD 71 billion**, with the Government expected to contribute over **USD 37 billion**, reaffirming Odisha's commitment to holistic human development
  - **Emerging sectors** such as financial services, blue economy, and digital commerce to be scaled through focused incentives and innovative financing mechanisms

- **The overarching investment strategy will be guided by**:
  - A robust **public-private partnership framework**, where the Government de-risks early-stage capital and facilitates infrastructure readiness
  - The introduction of **Vision Bonds** and sector-focused pooled funds to attract long- term institutional capital
  - Targeted efforts to unlock **foreign direct investment**, diaspora inflows, and cooperative capital at the grassroots level
  - A digitally enabled, transparent, and outcome-linked financing ecosystem that empowers investors, entrepreneurs, and communities alike

As Odisha accelerates into the next two decades, its capital strategy will not merely be a financing tool—it will be a **statewide mission of economic confidence, global trust, and people-centred transformation**. The State is poised to lead not only in fiscal ambition, but also in building the **most inclusive, resilient, and future-ready financial foundation in India**.

CHAPTER 1

INCLUSIVE AGRICULTURE: ENHANCING FARMER INCOME THROUGH EQUITY, INNOVATION, AND SUSTAINABILITY

Summary

Odisha stands at a defining crossroads in its agricultural journey - transitioning from subsistence farming to becoming a beacon of **inclusive, resilient, and globally competitive agriculture**. For nearly half of the State's population, **agriculture is more than livelihood - It is heritage, identity, and the soul of rural transformation**.

Blessed with ten diverse agro-climatic zones - from the **misted Koraput highlands to the fertile coastal deltas** - and enriched by a **strong tribal legacy of organic practices**, Odisha is poised to lead India's next green revolution. With thriving biodiversity, world-class ports, and a strategic coastline, the **State has the natural assets and cultural wisdom to drive both food security and agri-export leadership**.

Today, Odisha reimagines its farmer ecosystem not through fragmented schemes, but as a unified, whole-of-society mission - one that aligns climate preparedness, policy coherence, technology adoption, and resource efficiency, with the ambitions of every smallholder, SHG entrepreneur, and agri-startup. The Shree Anna Abhiyan, now a global model for millet mainstreaming, reflects this spirit of bold experimentation and justice for traditional crops.

By harnessing **digital technologies, revitalising fallow lands, incentivising crop diversification, and investing in post-harvest and cold chain infrastructure**, **Odisha is shifting decisively towards high-value, export-oriented agriculture**. From seed systems to solar irrigation, and from grassroots agri-preneurs to global branding, the Vision is to embed innovation, equity, and scale across the entire agri-value chain.

Special focus is placed on social inclusiveness, ensuring women farmers, tribal communities, and youth are not just beneficiaries, but leaders of this transformation. Farmer Producer Organisations (FPOs), public-private partnerships (PPP), and corporate mentorship will anchor this participatory model.

This chapter sets forth the strategic blueprint to make this transformation a reality - a farmer ecosystem that is productive, participatory, and primed for global markets.

Odisha's farmer-centric model: KRUSHI 360 - A complete ecosystem for agricultural transformation

To deliver on its Vision, Odisha has moved beyond fragmented schemes and siloed interventions. The State has embraced **KRUSHI 360** - a bold, structurally integrated, and farmer-first transformation model.

KRUSHI 360: Knowledge, Resilience, Unity, Social inclusion, Harnessed innovation and Industry integration

The framework reimagines the farmer's journey as a 360-degree continuum of support - from seed to market, from equity to enterprise. It is grounded in six interlinked pillars that define the future of agriculture in Odisha:

- **K – Knowledge empowerment**: Climate-smart advisories, traditional know-how, and scientific information systems that enhance farmers' decision-making and disaster preparedness
- **R – Resilience and resource efficiency**: Efficient use of water, soil, energy, and seed systems, supported by robust climate resilience infrastructure
- **U – Unity through policy coherence**: Seamless convergence between State and central programmes, ensuring that farmers benefit from aligned and timely interventions
- **S – Social inclusion**: Empowering SHGs, women farmers, tribal communities, and rural youth to lead as equal stakeholders in agricultural value chains
- **H – Harnessed innovation and technology**: Scaled adoption of digital platforms, R&D, cold chain logistics, smart irrigation, and farm mechanisation
- **I – Industry and institutional linkages**: Strengthening FPOs, public-private partnerships (PPPs), and market systems to unlock value beyond the farmgate

This KRUSHI 360 model ensures that every policy reform - whether a rice export policy or land-leasing law - is embedded in a scalable, mission-driven architecture. It is not simply an administrative framework; it is **a commitment to inclusive prosperity, climate resilience, and entrepreneurial dignity for every farmer in Odisha**.

Odisha's Vision for a resilient, rewarding, and future-ready agriculture sector Building on this, Odisha plans transformation on five strategic fronts:

1. **Raise farmer income to top 5 in India by 2036**
   Through better prices, modern infrastructure, and market access, we aim to raise monthly per capita farmer income significantly - which stood at INR 5,112 in FY 2018-19 - to among the top five in India by 2036. This will ensure rural dignity, resilience, and opportunity.

2. **Promote high-value, export-oriented agriculture**
   Odisha will reduce overdependence on paddy by enabling farmers to shift to pulses, oil seeds, spices, millets, floriculture, fruits, and medicinal crops. Five Odisha-grown commodities will be integrated into global value chains, helping farmers to tap new markets.

3. **Improve productivity above the national average**
   Focused extension services, seed improvement, mechanisation, and digitisation will help Odisha's farmers consistently surpass national yield benchmarks, crop by crop. The State will also aim to raise the average cropping intensity to 220% by 2036 and 250% by 2047, and achieve farm power input usage of 3.5 kW/ha by 2036 and 4.5 kW/ha by 2047, in line with national targets for sustainable intensification.

4. **Elevate Odisha to a leader in green and digital agriculture**
   The State will digitise 100% of farm records, track every cropping cycle, and ensure all support reaches farmers directly and transparently. Through PM-KUSUM[1], Odisha will solarise 100% of feasible farmland, reducing power costs and enhancing climate resilience. At least 60% of cultivated area will adopt climate-resilient crop varieties by 2036, ensuring preparedness against climatic shocks.

5. **Deepen inclusion and ecological balance**
   Odisha will empower farmers, FPOs, SHGs, and cooperatives to be the as key players in production, processing, and market delivery. At the same time, The State will aim to expand conservation practices, regenerate soil and water, and preserve biodiversity.

By 2047, the State envisions the following outcomes

- Rank among the top five Indian States in per capita farmer income
- Lead in five globally competitive crops with export-ready value chains
- Digitally map and monitor 100% of farmland, subsidies, and extension of adiitional services
- Achieve 100% solarisation of viable agricultural land under PM-KUSUM
- Become one of India's top three States for agriculture-related research, education and training, as ranked by Indian Council of Agricultural Research (ICAR) and National Institute Ranking Framework (NIRF)
- Ensure at least 50% of farmland is owned or managed by women
- Anchor all State schemes on platforms led by FPOs, SHGs, and cooperatives

[1] Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan

Key initiatives to achieve the outcomes

Transform five priority crops through integrated value chains — from improved seeds to premium markets; including the following initiatives which will benefit multiple value chains:

- Strengthen Centres of Excellence to drive innovation in seed development, millet science, and farmer training
- Promote agri-entrepreneurship through rural clusters, skilling initiatives, and capital support for developing production and transport infrastructure
- Deploy price-gap support for diversified crops to de-risk farmers while encouraging cropping shifts
- Enable digital marketing and traceability, through a revamped 'Marketing Cell' under the Department of Agriculture and Farmer's Empowerment (DAFE)
- Deepen SHG and FPO participation, from planning and input distribution to direct market linkage

Expand post-harvest infrastructure, including over 58 new cold storages and rural packhouses

Activate Odisha's Climate Resilience Cell, linking farmers to weather-based advisories and adaptive cropping models

Strengthen land rights, through a new Land Leasing Act and support to women farmers

Scale digital agriculture through tools like prescription farming, drone spraying, and smart soil testing

Significantly expand the irrigation coverage across crops

Over the next 24 months, the State will

- **Finalise priority crops and export-linked value chains**, aligned to market demand, nutritional needs, and local ecology
- **Launch crop-specific policies**, including the Rice Export Policy, and price-gap support for potato and other strategic crops
- **Deploy district-level Programme Management Units (PMUs)** to coordinate action, track targets, and support delivery
- **Implement the Cold Storage Policy**, with 58 projects to be rolled out through private enterpreneurs and cooperative models
- **Lay the foundation for long-term enablers**, including irrigation planning, digital crop surveillance, and SHG-FPO integration across delivery chains

Odisha will continue to invest in science, empower women, protect the environment, and connect its produce to the world. Through KRUSHI 360, The State is creating an agriculture sector that is fair, future-ready, and rooted in the strengths of its people.

1. Context

Agriculture serves as a vital pillar of Odisha's economy, empowered by the State's distinct natural features that enable diverse crop and commodity cultivation. With around 40% of its terrain suitable for farming, Odisha offers a fertile ground for agricultural activities. The State is segmented into 10 unique agro-climatic zones, each defined by soil types, topography, rainfall, and cropping patterns. These include areas such as the eastern and southeastern coastal plains along the coastline and the Eastern Ghats highlands in the southern regions.

The rich variety of soil types—ranging from alluvial soils in river basins to loamy soils in deltaic regions and laterite soils inland—lays the foundation for robust agricultural productivity. Coupled with extensive water resources, which include a 575 km coastline and major rivers like the Mahanadi, Brahmani, and Subarnarekha, the State enjoys a favourable sub-tropical climate with an average rainfall of 1,452 mm, displaying variability across the southern coast and northern plateau.

Such advantageous ecological conditions foster a wide array of agricultural outputs. While paddy remains the dominant crop, Odisha stands as the **largest producer of sweet potatoes in India**, contributes **nation's mushroom supply,** and ranks **third in cashew production**. The State prides itself on its unique and diverse crop varieties, such as Kalajeera and Neelabati aromatic rice, and distinct millets like Kundra bati mandia and Jasra. This breadth of agricultural capability underscores Odisha's key role in the country's agrarian landscape.

Odisha has made significant progress in the past decade. Following are some shining examples impacting agriculture in a positive manner:

- **Shree Anna Abhiyan (Odisha Millet Mission)** has emerged as a global model for millet promotion, earning recognition at the International Nutri-Cereal Convention (INCC) 5.0 in Hyderabad.
  - It has been highlighted as a case study by The Group of Twenty (G20), UN Climate Change Conference of the Parties (UNFCCC COP28), Food and Agriculture Organisation of the United Nations (FAO), and the Government of India
  - The mission has expanded to 177 blocks across 30 districts with remarkable outcomes such as the increase in the millet production per hectare from 0.79 MT/hectare to 0.96 MT/hectare
- **Several digital agriculture initiatives** have been launched by the State such as the Krushak Odisha and Krushi Samikshya Kendra platforms to enhance the efficiency and accessibility of agricultural services.
  - Odisha is also the first State to launch the Simplified Application for Agricultural Loans (SAFAL) to streamline access to credit for farmers
  - Through the 'Krushak Samrudh' helpline, the State has onboarded 69 lakh farmers and disseminated 117 crore crop advisories
  - Additionally, Odisha has issued 28,807 e-licenses to input dealers via a single window online system

- **Odisha's rice productivity improvement programme** has achieved remarkable success, doubling rice productivity from 1,127 kg/ hectare in 2000-01 to 2,936 kg/hectare in 2022-23, in line with the national average of 2,798 kg/hectare. Additionally,
    - The programme also expanded the area under fallow management by five times, from 0.7 to 3.9 lakh hectare by 2024
    - Between 2018 and 2023, irrigation potential increased from 37.3% to 54.7%. Key drivers of this success include effective rice fallow management, and the adoption of climate-resilient rice varieties

Building on its current initiatives, the State aims to transition across several key dimensions to boost its agricultural sector:

- **Per capita farmer incomes**

Odisha's per capita monthly agricultural income stands at just INR 5,100, which is below the national average of INR 10,200 and less than a quarter of the income in leading States like Haryana, Punjab, and Meghalaya. Despite this, there are opportunities for substantial growth, as outlined in the following key points:

- The State's cropping intensity has risen from 1.2 in 1970-71 to 1.6 today
- Approximately 63% of cultivated land is mono-cropped with rice, and only 55% is irrigated
- Around 1.6 million hectares remain uncultivated as rice fallow post-rice cultivation during the Rabi season
- By increasing cropping intensity to 2.5 (from currently 1.6) and promoting multi-cropping, one million hectares of rice fallow land could be used for short-duration pulse and oilseed crops during Rabi, leveraging residual moisture

- **Crop mix**

Currently, rice dominates over 50% of the gross cropped value, partly due to the minimum support price of approximately INR 3,100 per quintal. Despite the presence of unique aromatic rice varieties, there is an overreliance on low-yield, poor-quality types that lack nutritional value and export suitability. This is shown below:

Building on its current initiatives, the State aims to transition across several key dimensions to boost its agricultural sector:

1. Raise farmer income

Odisha's per capita monthly agricultural income stands at just INR 5,112 (FY 2018-19), which is below the national average of INR 10,200 and less than a quarter of the income in leading States like Haryana, Punjab, and Meghalaya. Despite this, there are opportunities for substantial growth, as outlined in the following key points:

- The State's cropping intensity has increased from 120% in 1970-71 to 160% today
- Additionally, through better price mechanisms, modern infrastructure, and market access, the farmers can get better value for their crops
- Approximately 63% of cultivated land is mono-cropped with rice, and only 55% is irrigated
- About 1.6 million hectares of land are left unused after growing rice during the Kharif seasons; that is, they remain uncultivated during the Rabi season
- By increasing cropping intensity to 250% and promoting multi-cropping, one million hectares of rice fallow land could be used for short-duration pulse and oilseed crops during Rabi, leveraging residual moisture of the soil

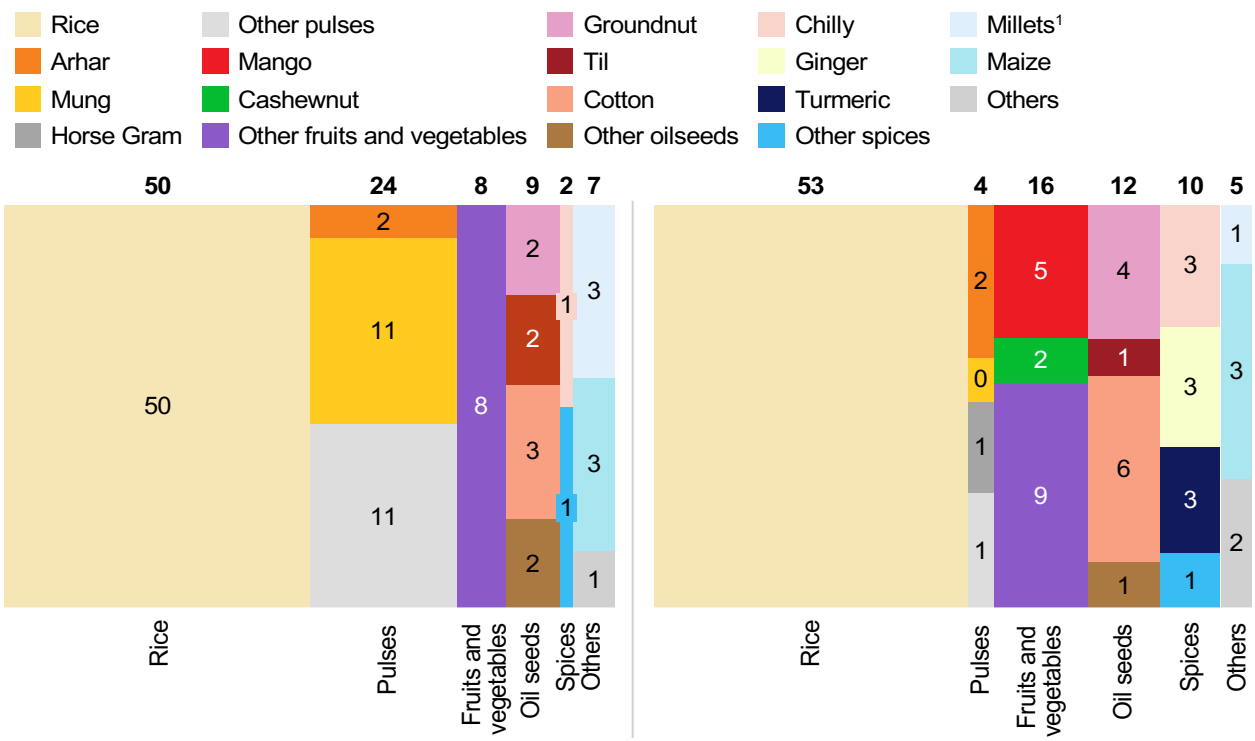
2. Promote high-value, export-oriented agriculture

Currently, rice dominates over 50% of the gross cropped value, partly due to the minimum support price of approximately INR 3,100 per quintal. Despite the presence of unique aromatic rice varieties, there is an over-reliance on low-yielding, poor-quality types that lack nutritional value and export suitability. This is shown below:

EXHIBIT 1.1

Area under cultivation of various crops[2] (%)

Gross crop value contribution of various crops[3] (%)



[1] Includes ragi, jowar, bajra, small millets
[2] % contribution of value in million ha
[3] % contribution of value in INR Cr of all crops

Source: Agriculture statistics at glance 2023

3. Improve productivity above the national average

Odisha's farm productivity remains below the national average due to fragmented landholdings, poor-quality seeds, and weak access to timely advice. Only 61% of seed demand is met with quality inputs (Odisha Agri Statistics, 2020). Cropping intensity is around 160%, compared to the national average of 190%, with over 1.6 million hectares of fallow land lying unused post-Kharif. Mechanisation is also low—farm power availability stood at just 1.975 kW/ha in 2018–19, well below the national average of 2.49 kW/ha (Lok Sabha, 2020). Several initiatives that the State can take to achieve and surpass national average productivity include:

Revamp extension through agri-call centres, digital platforms, and last-mile Krishi Mitras to deliver crop and climate-specific advisories

Scale seed replacement with high-yielding, pest- and climate-resilient varieties

Establish custom hiring centres and extend subsidies for small farm implements

Convert at least 1.5 million hectares of rice fallow land for short-duration Rabi crops like pulses and oilseeds

Use satellite imaging, IoT-based sensors, and AI to deliver real-time weather forecasts, soil health updates, and input recommendations

Increase cropping intensity to 220% by 2036 and 250% by 2047

4. Elevate Odisha to a leader in green and digital agriculture

Digitisation of agriculture in Odisha is underway but remains patchy and siloed, with little integration across records, advisories, and benefits. Most irrigation pumps still rely on diesel or conventional electricity, raising input costs and emissions (MNRE, 2023). The State faces 2–3 major climate shocks annually (IMD, 2023), yet climate-resilient crop adoption remains limited. Additionally, real-time tracking of crop cycles, yields, and farmer entitlements is rare, reducing transparency and responsiveness.

Some of the key initiatives that the State will take to move towards a greener and more efficient/technically-enabled future are:

Achieve 100% digitisation of farm records by 2036, integrating land records, cropping history, soil data, and beneficiary mapping

Fully implement PM-KUSUM to solarise all feasible irrigated farmland by 2036 and promote solar pumps and micro-irrigation to reduce energy and water use

Increase the area under climate-resilient varieties and promote practices such as integrated pest management, water budgeting, and Zero Budget Natural Farming (ZBNF)

Develop a unified digital platform that connects advisory systems, subsidy payments, and input delivery and apply blockchain to track seed, fertiliser, and produce logistics, improving transparency and reducing fraud

5. Deepen inclusion and ecological balance

Despite making up 60% of the agricultural workforce, women have limited access to land, credit, and markets (NABARD, 2022). Soil degradation is a concern—over 40% of cultivated land shows nutrient depletion. Water harvesting and groundwater recharge remain inadequate (NBSS&LUP, 2021). Finally, the expansion of market-driven crops has reduced native biodiversity, while agriculture-driven pressure on

ecosystems has led to soil erosion, water stress, and loss of traditional practices. To ensure sustainability and equity in agriculture, the State will work on the following key initiatives:

Expand targeted training, leadership development, and access to finance to SHGs, FPOs, women and tribal farmers, amongst others

Promote conservation agriculture—cover crops, reduced tillage, green manuring—and scale watershed development and micro-irrigation

Establish seed banks, promote agroforestry, and preserve native crops through participatory breeding and extension support

Reduction agriculture-related emissions through clean energy, efficient inputs, and carbon sequestration practices

1.1 Key challenges

Key structural challenges which the State will need to overcome to deliver on the transition include:

EXHIBIT 1.2

- **Fragmented and smallholder farms**: The agricultural landscape in Odisha is dominated by smallholder farms, with 93% of farmers owning less than two hectares of land. This fragmentation limits higher production volumes and constrains per capita farmer income
- **Climate change and extreme weather risks**: Odisha's geographical location at the head of the Bay of Bengal makes it particularly vulnerable to climate change, especially with frequent, extreme weather events like floods and cyclones. The State has the highest cyclone incidences in the country, highlighting its climatic vulnerability. Notable cyclones like Phailin (2013), HudHud (2014), Titli (2018), and Fani (2019) have caused significant agricultural damage, such as the uprooting of banana, coconut, and cashew trees during Fani. Additionally, subtle changes in weather patterns, including inconsistent rainfall and rising maximum temperatures, are impacting crop yields and farmer livelihoods
- **Ageing farmer population**: With an average age of 46, the farmer population faces challenges such as low productivity and slow adoption of new technologies. Many locals are moving away from agriculture in search of more stable and lucrative job opportunities outside the State
- **Obsolete agricultural legislation**:
  - The outdated Orissa Land Reforms Act of 1960 does not provide for sharecroppers and tenant farmers to access credit, as they cannot use land ownership as collateral, further constraining growth in the agriculture sector
  - Similarly the OAPM Act, 1956 while be recast to cater the new challenges in Agri-marketing sector

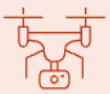
- **Insufficient farm power and skilled labour**: The farm power input in Odisha is relatively low at 2.6 kW/ha, compounded by a lack of trained and skilled operators and service providers for farm machinery
- **Inadequate cold chain infrastructure**: Cold chain systems are essential for reducing post-harvest losses, optimising supply chains for perishables, and ensuring higher incomes for farmers. Despite this need, Odisha has only 0.2 MMT of cold storage capacity compared to 1.6 MMT in Andhra Pradesh and 6.5 MMT in West Bengal. Additionally,
    - Out of the 133 cold storages in the State, 98 are non-operational, with the majority of these located in Cuttack, Khorda, and Puri
    - Furthermore, five districts—Deogarh, Kalahandi, Kendrapada, Nuapada, Nayagarh, and Sonepur—are completely devoid of cold storage facilities, exacerbating post-harvest losses

By 2047, the State aims to overcome these challenges, striving for nutritional sufficiency and aiming to increase per capita agricultural GSDP by 2.5 to 3 times. This will be achieved through a focus on yield improvement, enhancing cropping intensity, transitioning to high-value crops, and boosting export premiums, as detailed later.

1.2 Key trends

To tackle these challenges and create a world-class agriculture ecosystem, Odisha will learn from key global and national agriculture trends. Some of these are mentioned below:

EXHIBIT 1.3

Trend	Examples
1 **Use of technology and precision agriculture**	• National Mission for Sustainable Agriculture (NMSA) aims to enhance farming productivity through integrated farming, water use efficiency technologies, soil health management and promotion of climate resilient practices • Kisan Suvidha App provides real-time information on weather, market prices, and expert advice for farmers
2 **Expansion of micro-irrigation network** 	• National scheme for micro-irrigation, Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), launched to improve water use efficiency through micro-irrigation infrastructure development, with a provision of up to 55% financial assistance • For instance, Anantapur district in Andhra Pradesh stands as the largest adopter of micro irrigation in India, having expanded its micro-irrigated area from 12,554 ha to 280,000 ha
3 **Increase in organic farming**	• Some States, e.g. Sikkim, Maharashtra, Rajasthan, and Gujarat, have already converted large swaths of land to organic farming through the Paramparagat Krishi Vikas Yojana (PKVY) • For instance, Sikkim has converted 76,000 ha of agricultural land to become the first fully organic State of India
4 **Integration of digital platforms across the value chain**	• **e-NAM (National Agriculture Market)** is an online trading platform integrating 1,000+ mandis (markets) across India for better price discovery and market access • **Ninjacart** is a business-to-business (B2B) agri-tech platform directly connecting farmers with retailers and businesses for delivery of quality produce and better price realisation • **Digital Agriculture Mission** is being implemented in 19 States through three key initiatives: AgriStack (farmer registry, geo-referenced village maps, and digital crop survey), Krishi Decision Support System and soil profile mapping
5 **Shift to public-private partnerships (PPP) in agriculture**	• **National Agriculture Infra-Financing Facility** supports development of post-harvest infrastructure up to INR 1 lakh crore • Different models for PPP: • **Supply of quality inputs** (e.g., Dhanuka Agritech Ltd in Madhya Pradesh for input, research and extension services) - **Agriculture extension services** (e.g., ITC e-choupal) - **Irrigation infrastructure** (e.g. Design and implementation of drip irrigation project by Jain Irrigation Systems in Karnataka)

2. Vision and outcomes

Odisha recognises the pivotal role of agriculture in its economy and is committed to modernising the sector to enhance farmers' incomes and living standards, driving inclusive prosperity across the State.

EXHIBIT 1.4

VISION 2047

Transform Odisha's agriculture into a sustainable, resilient, inclusive, and science-driven ecosystem to ensure food and nutrition security, promote entrepreneurship and continuously raise farmer's income and well-being

[1] Alone or jointly with others; benchmark with Arunachal Pradesh

To achieve this, the State will track the following outcomes:

EXHIBIT 1.5

Key outcomes	Unit	Current status	2029	2036	2047
Farmer per capita income	INR	5,112[1]	10,200	12,000	15,000
Coverage of irrigation for relevant area	%	55%	65%	80%	90%
Cropping intensity	%	160%	180%	220%	250%
Farm mechanisation	kW/ ha	2.6	3.0	3.5	4.5
Farmland ownership by women	%	13	15	30	50
Yield for pulses	Mt/ha	0.6	0.8	0.9	1.25
Yield for oilseeds	Mt/ha	0.96	1.10	1.25	2.40
Rice export (at current prices)	INR cr.	321	1,800	6,200	10,000

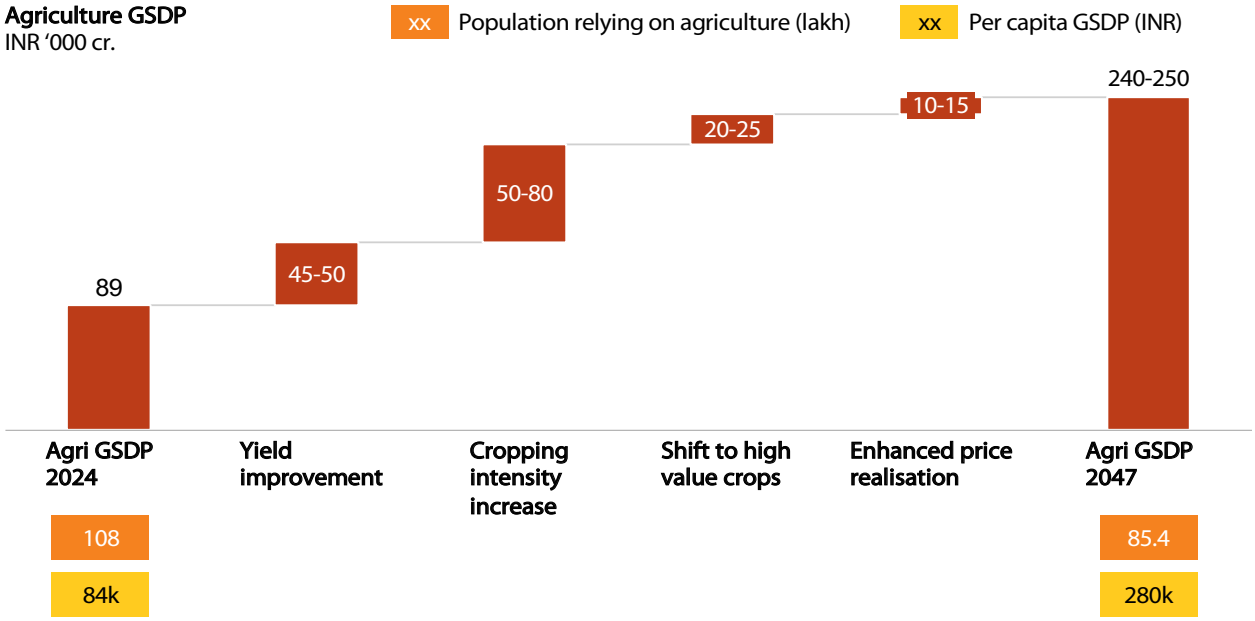
That is, the State will aim to scale up its agricultural GSDP from INR 89k crore to INR 240-250k crore by 2047 through four key levers:

- **Yield improvement** to match at least the national average through scientific farm management practices and adoption of higher-yielding varieties
- **Cropping intensity increase** from 160% to 250% through expansion of irrigation coverage to 90% of the relevant cultivated areas (from current 55%)
- **Shift to high value crops** through an end-to-end value chain development strategy for at least five crop clusters
- **Enhanced price realisation** from exports through value addition and targeted interventions on specialised varieties (e.g., coffee, cashews)

[1] 2018-19
Source: NFHS-5, Odisha Economic Survey 2023–24

The expected contribution from each of the levers mentioned above is given below:

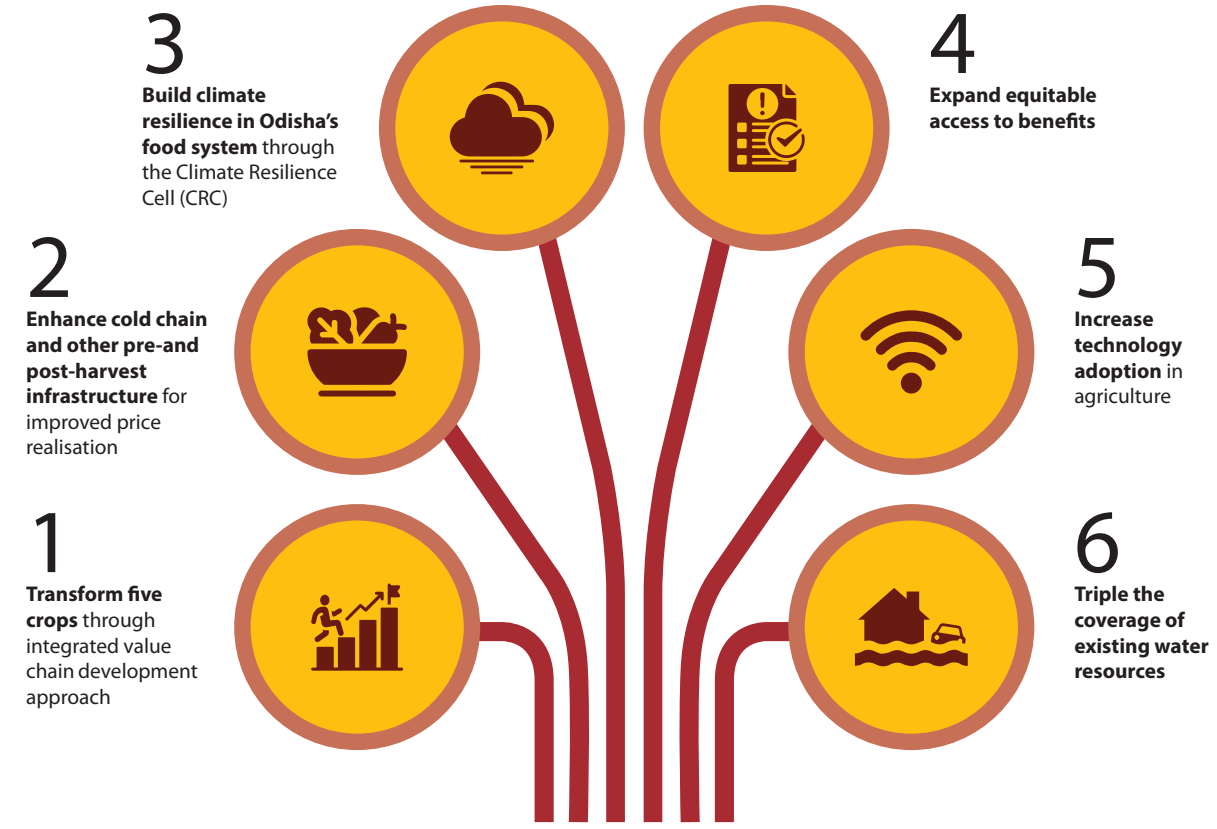
EXHIBIT 1.6



3. Key initiatives

The State is committed to undertaking following key initiatives to realise its Vision:

EXHIBIT 1.7

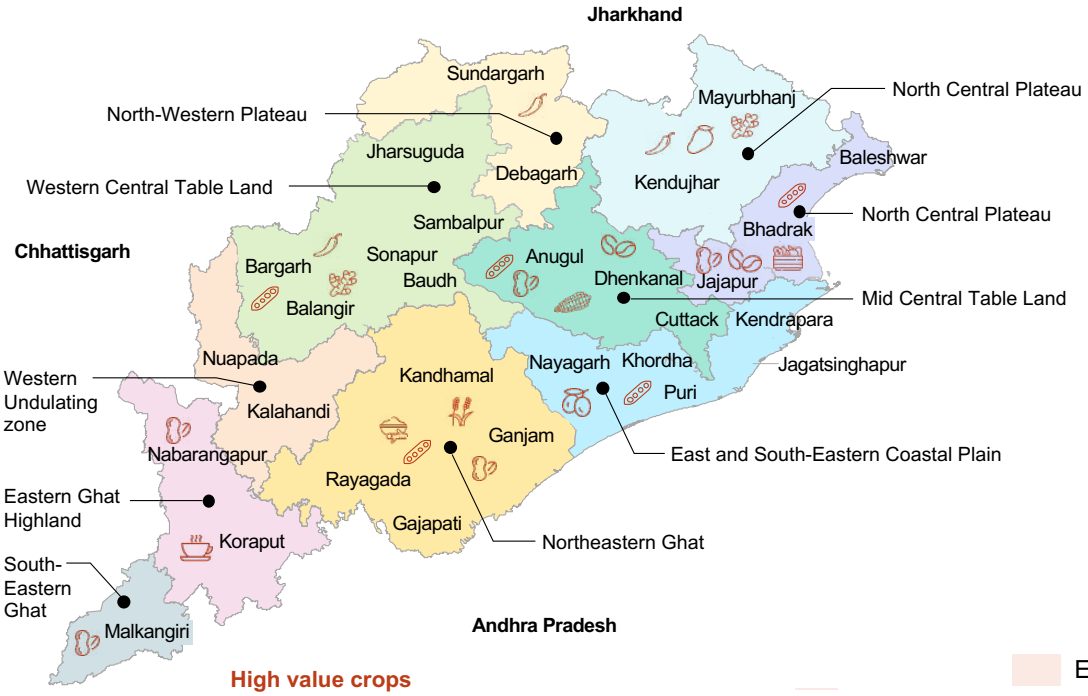


3.1 Transform five priority crops through integrated value chains - from improved seeds to premium markets

3.1.1. Crop prioritisation: The first phase will involve identifying and prioritising five crops through a baseline digital crop survey. This prioritisation process will focus on both supply and demand factors to maximise economic and nutritional benefits:

- **Supply factors**: Odisha's diverse agro-climatic conditions, comprising ten distinct zones, provide abundant opportunities for a variety of crops. Key considerations for prioritisation with include agro-climatic feasibility, scalability, competitiveness (particularly crops where Odisha ranks in the top national quartile or holds unique advantages), and per-acre profitability. Currently, the State supports a wide range of crops due to beneficial factors like plentiful rainfall and a vast coastal belt, as illustrated below (excluding rice, which is widespread across all districts):

EXHIBIT 1.8



High value crops — Export potential

1 Pulses	2 Oilseeds	3 Maize	4 Millets
5 Chili	6 Ginger	7 Turmeric	8 Vegetables
9 Mango	10 Cashewnut	11 Coconut	12 Coffee

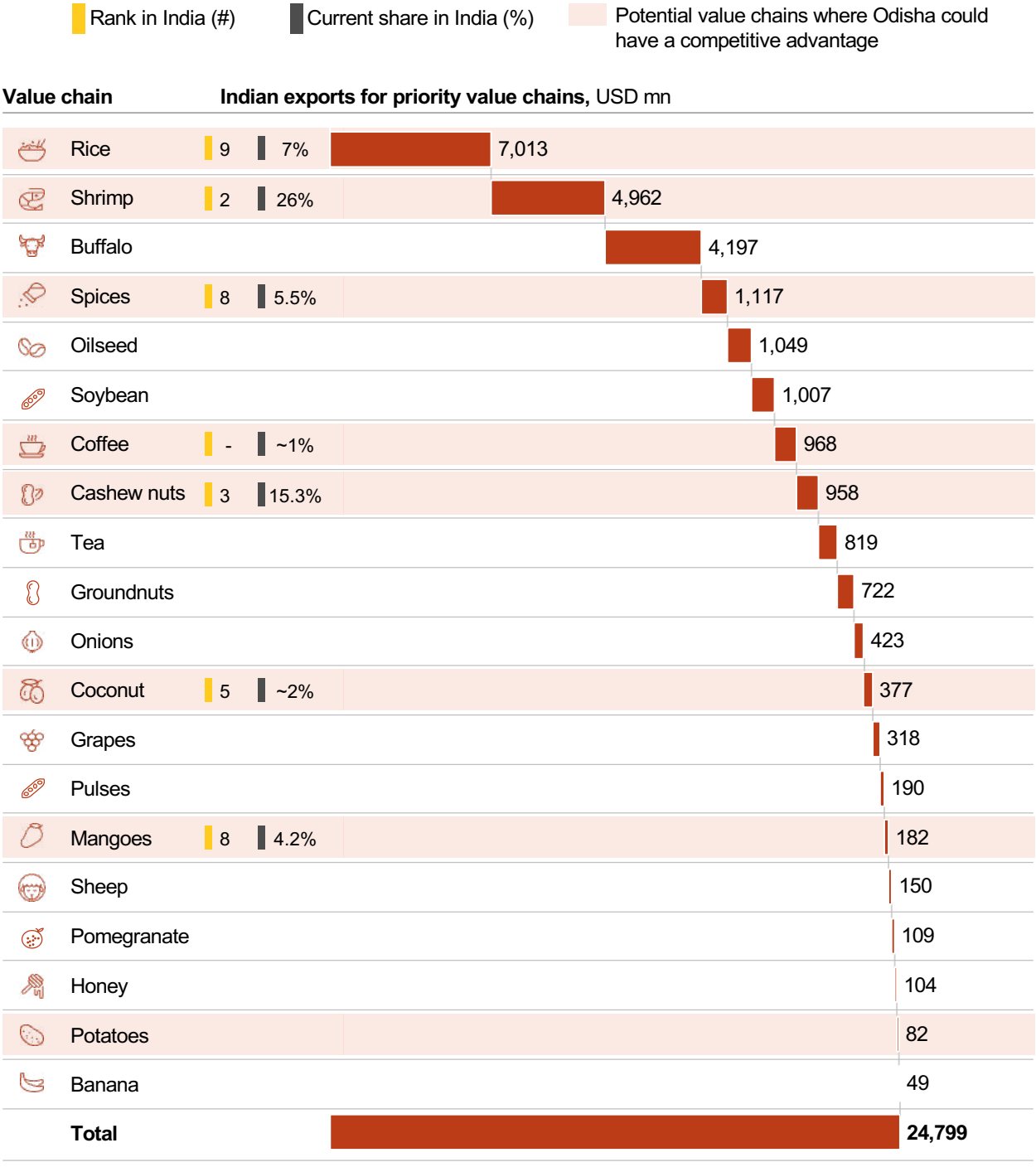
Source: Odisha Economic Survey, Annual Activity Report

- **Demand factors**: Odisha will focus on optimising crop cultivation to meet various demand areas:
  - **Nutritional needs**: The State will prioritise crops that are rich in proteins and vitamins, like vegetables such as potatoes and onions, to fulfil local nutritional requirements
  - **Global and local demand trends**: Emphasis will be on crops mirroring positive demand trends, both globally and domestically
  - **Export potential**: Odisha aims to enhance its export profile by prioritising crops with strong global market value. The State, ranked third nationally in cashew nut production, is leveraging its advantageous climate and processing capabilities. By improving yields through pruning and gap-filling and adding value for export markets like the Middle East, Odisha plans to further strengthen its export capabilities
  - **Import substitution potential**: The State identifies key commodities that can significantly reduce import reliance through increased local production. Organically farmed crops, such as Kandhamal haldi, are among those targeted for premium pricing in international markets, capitalising on organic cultivation methods

Through these strategic demand factors, as further detailed in Exhibit 1.9, Odisha will continue to evaluate and prioritise value chains rigorously. This focused approach aims to expand the State's agricultural strengths and align with market dynamics for robust local and export market growth.

EXHIBIT 1.9

Odisha holds a competitive advantage in 6 of 20 export value chains Identified by India



Source: HLEG report, International Trade Center Export Potential Map, Expert interviews

3.1.2. Value chain enhancement: The State will identify and address barriers across the value chain stages - from input supplies, farming, and production, to aggregation, logistics, processing, and export (or supply) for each prioritised cluster. An initial list of challenges and unlocks for select high value crops are listed below:

EXHIBIT 1.10

Crop	Key challenges	Potential unlocks
Maize	• Limited cultivation area • Low yield compared to top performing States • Inadequate market linkage, with most maize sold at lower prices to West Bengal poultry farmers	• Increase crop yield from below 3 MT/ha to 7 MT/ha, aligning with top-performing States, with subsidised hybrid seeds • Extend the gross cropped area beyond the existing 3 lakh hectares • Strengthen market access by leveraging Farmer Producer Organisations (FPOs) and enhance silage production to support animal husbandry and ethanol production • Elevate export premiums by focusing on the production of value-added food products such as popcorn and chips
Pulses	• Marginal land area under cultivation, with poor soil health • Significant crop destruction due to frequent attacks by stray and wild animals • Low yield compared to the national benchmark of 5.64 Qt/ha	• Increase the area of Rice Fallow Management (RFM) beyond current four lakh hectares, targeting current fallows, bund planting in field bunds, etc. • Provide subsidised solar fencing to mitigate crop destruction • Boost yield from 0.5 MT/ha to 1.9 MT/ha (national benchmark) through subsidies for high yielding and stress-tolerant varieties suitable for Odisha's agro-climatic zones
Millets	• Limited area under cultivation	• Further scale up area under millets from ~3% to 6% of GCA, focusing on finger and foxtail millet; especially promoting millet cultivation in tribal areas • Promote the conservation of traditional millet biotypes with high nutritional value • Establish millet bio-parks, potentially in Koraput and Kandhamal, to create robust supply chains equipped with processing facilities for ready-to-eat products, marketing support, etc. • Encourage millet consumption by introducing it in all Government canteens, schools and institutions, combatting malnourishment

EXHIBIT 1.10 (continued)

Crop	Key challenges	Potential unlocks
Oil seeds	• Poor soil health-impacting crop yields • Lack of de-humidification infrastructure • Inadequate oil processing capabilities	• Enhance soil health through better extension services and input use • Invest in de-humidification infrastructure at the block level • Encourage corporate sector to establish oil processing mills in clusters • Increase area of Rice Fallow Management (RFM) beyond current four lakh hectares, targeting current fallows, and bund-planting in field bunds, etc.
Spices	• Sub-optimal yields for spices such as ginger and turmeric, despite favourable agro-climatic conditions	• Improve yields from 13.4 MT/ha to 21.9 MT/ha for ginger and from 2 MT/ha to national average of 3.8 MT/ha for turmeric by expanding micro-irrigation coverage and introducing high-yielding, disease-resistant varieties • Increase export premium on key spices by focusing on organic farming methods • Enhance value addition and post-harvest procurement infrastructure for exports
Horti-culture (e.g., Potato, onion, mango)	• Low yields compared to national benchmark • Low domestic and export prices despite popular varieties cultivated like Banganapalli mangoes • High dependency on other States such as West Bengal for potatoes • High post-harvest losses and reduced product quality due to limited post-harvest infrastructure	• Develop agriculture production clusters and exotic crop-specific economic zones to attract finance, accelerate industry set-up and create market-linkages • Scale up 'Centre of Excellence' model for horticulture to improve yield (from 3.9 MT/ ha to 9 MT/ha) by adopting high-yielding, disease-resistant varieties and scientific farm management practices • Expand cultivation by developing the 'Contract Farming Act' • Invest in irrigation systems, cold storage facilities, solar fencing, and processing facilities for value addition • Earn higher export premium by scaling up organic production • Enhance post-harvest logistics, including cold storage

3.1.3 Business plan development: Specific business plans will tackle identified challenges, aiming to scale crop clusters. This will include initiatives led by the Government, as well as actions from civil societies, cooperatives, and the corporate sector

3.1.4 Cross-cutting interventions: Some initiatives that may be leveraged in multiple value chains are detailed below:

- **Seed and nursery hubs**: Establish local hubs to provide high-quality seeds and saplings, ensuring crops are well-suited to local conditions and addressing challenges like low germination and pest resistance
- **Centres of Excellence (CoE) expansion**: Scale up CoE for the adoption of advanced farming practices and high-yielding varieties, leveraging successful models like the Mission for Integrated Development of Horticulture (MIDH)
- **Agri-entrepreneurship and value addition**: Enhance value addition and promote agri-entrepreneurship by focusing on export-prioritised value chains such as cashews and coffee. This involves overcoming existing challenges like skill deficits, limited capital access, infrastructure gaps, and inconsistent utilities. To facilitate these efforts, the State will:
    - Implement skilling initiatives, particularly targeting tribal communities, to improve their market information flow, financial literacy, entrepreneurial skills, and sustainable forest management practices

- Establish strong linkages between raw material suppliers and key market players
- Develop clusters to facilitate the aggregation of produce and product synergies
- Promote common infrastructure development to support streamlined processing activities
- Provide capital investments of up to 50% under the Mukhyamantri Krushi Udyog Yojana (MKUY) to attract corporate investments and drive the growth of the agro-processing industry

- **Incentives for crop diversification**: Implement schemes to stabilise farmers' incomes and encourage crop diversity (e.g., horticulture, and millets), such as compensation for price gaps compared to the Minimum Support Price (MSP)
- **Market linkage improvement**:
  - Strengthen FPOs and facilitate mentorship from corporate leaders to provide market access, infrastructure, and skills enhancement
  - Strengthen Co-operatives & RMCs to provide pre and post harvest support to farmers and their collectives for effective marketing of their produce
- **Digital marketplaces**: Connect farmers directly with supply chain stakeholders using digital platforms to facilitate real-time market access and price discovery. Some of the key initiatives include:
  - Utilising the Open Network for Digital Commerce (ONDC) infrastructure to boost transparency, ensure traceability, and provide up-to-date market information

- Expanding the role of the Department of Agriculture and Farmers' Empowerment (DAFE) to incorporate agricultural marketing by establishing a dedicated directorate and forming a 'Marketing Cell', led by agri-marketing experts
- Upgrading the Mandis or markets to Model Mandis by:
  - Building new mandis in each block and revamping existing ones with granaries, farmers' rest sheds, and warehouses, connecting them all to e-NAM across Odisha
  - Providing a collection and storage facility in every Gram Panchayat for Agricultural and Minor Forest Produce; enabling geo-tagging of warehouses
  - Expanding the procurement list to include oilseeds (groundnut, mustard, coconut, and sunflower), pulses, millets, and vegetables
- Working with cooperatives and FPOs to enable farmers to sell their produce directly to consumers or institutional buyers, bypassing intermediaries. This strategy aims to create efficient, transparent, alternative marketing channels that maximise farmers' income and enhance the procurement of Minor Forest Produce (MFP)

- **Quality assurance for exports**: Develop testing centres and enforce standards and certifications to enhance agricultural produce quality, supporting export growth. This will include Sanitary and Phytosanitary Measures (SPS standards), International Organisation for Accreditation Services (IOAS) certification, and mandatory International Organisation for Standardisation (ISO) grades on packaging
- **Promotion of organic farming**: Scale organic and natural farming methods to increase area coverage and manage pests sustainably, supporting higher-value exports. The State will effectively implement PM-PRANAM[1] to ensure sustainable and balanced use of fertilisers, adopting alternate fertilisers and promoting organic and natural farming

Below are two illustrative approaches: Exhibit 1.11 focuses on exporting non-Basmati rice, while Exhibit 19.12 targets achieving self-sufficiency in potato production

[1] PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth

EXHIBIT 1.11

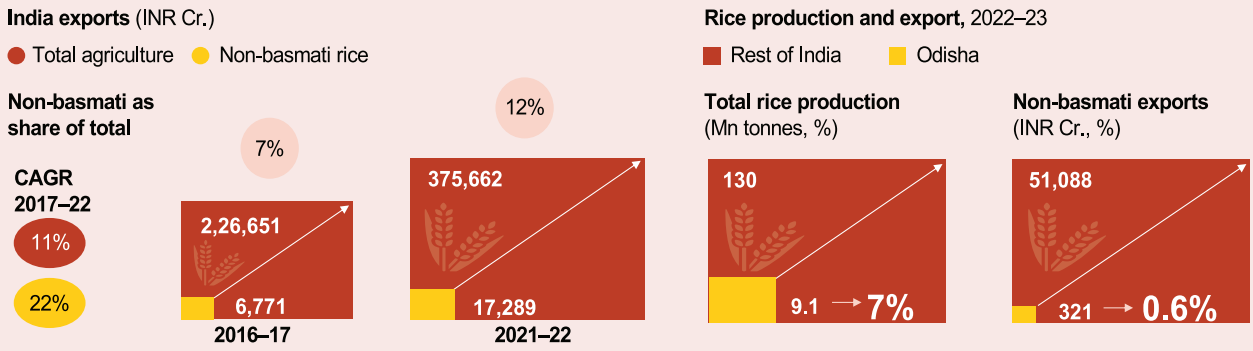
Illustrative value chain approach for export-oriented non-Basmati rice

A Rice as a strategic crop

- Accounts for approximately 50% of Odisha's Gross Cropped Area (GCA) and over half of the State's agricultural Gross Value Added (GVA)
- Critical to leverage rice as a State strength amid crop diversification efforts

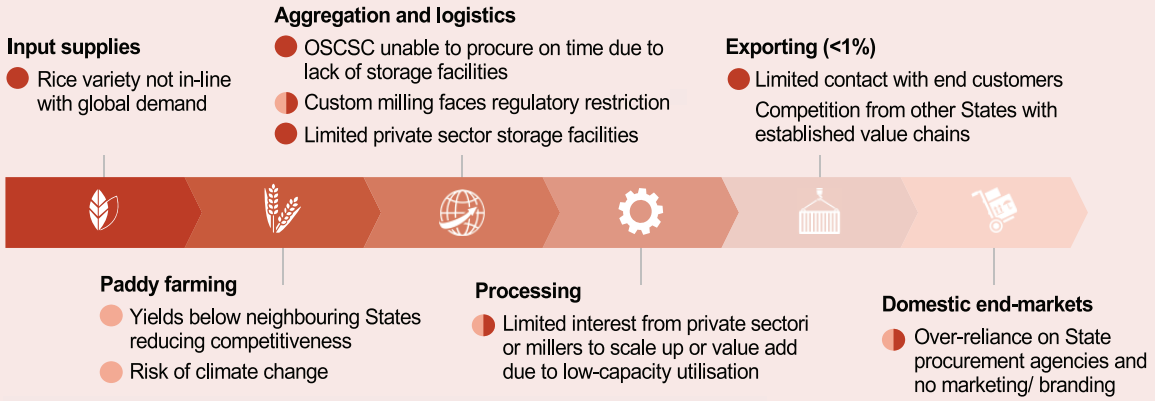
B Export growth

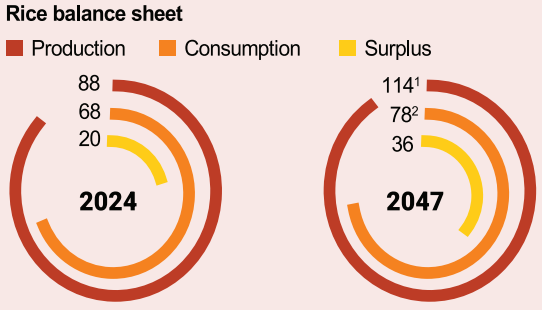
- Non-Basmati rice exports have grown at a 22% CAGR over the past five years
- These exports represent 12% of India's total agri-commodity exports, growing twice as fast as the overall rate.



C Addressing key value chain challenges could increase non-Basmati rice exports from under INR 300 Cr. to over INR 10,000 Cr. by 2047

Level of impact: High · Medium · Low





[1] Production assumptions: yield ~3,400 kg/ hectare, cropping intensity 2-2.5, rice share of GCA reduces from 46.4% to 30-35%

[2] Consumption assumptions: population of ~5.4 Cr., per capita CAGR of 0.75%

Source: Agricultural Statistics at a Glance 2021, 2022, DAFE analysis

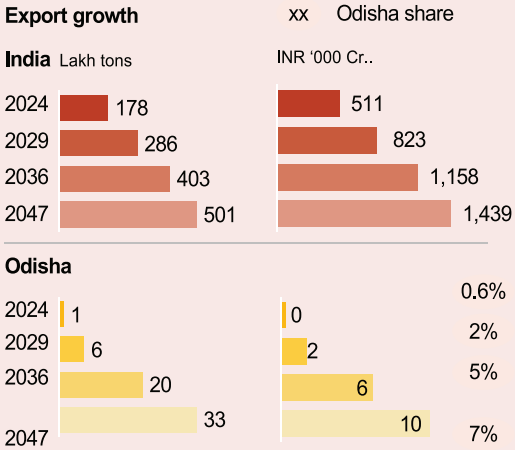


EXHIBIT 1.11 (continued)

D Future potential

- By 2047, Odisha could continue to export surplus rice despite a reduced GCA share, due to increased cropping intensity and yield improvements
- Farmers are likely to benefit from supply chain enhancements, reduced distress sales, and lower input costs
- Essential to identify key target markets and align rice varieties with market demand

E Key initiatives to realise exports of non-Basmati rice

Lever	Key pain points	Potential opportunity
Improve rice variety	Rice variety not in-line with global demand Low traceability to farm	Development and extension of varieties such as Sharbati, HMT Kolam, Sonamasoori that have demand in global markets including through FPO mentorship by national agri-commodity players or in PPP mode
Climate-smart practice	Risk of climate change and stress on resources	Promote climate smart practices such as SRI, AWD, DSR[1] so State can improve water consumption efficiency by 25-70% and improve resilience as climate change makes some regions less agronomically suitable for rice cultivation
Scale storage facilities	Limited private sector storage facilities OSCSC unable to procure timely, due to lack of storage facilities	Addition of storage facilities driven by corporate sector
Increase yield	Yields below neighbouring States reducing competitiveness	Increase production and reduce costs by increasing yield through enhanced productivity, increased cultivated land and reduced wastage
Agri-marketing and trade promotion	Limited contact with end customers	Promote export by re-designing engagement with countries and buyers along with strong branding, GI-tagging and promotion of Odisha varieties Continuous research on rice varieties in global market
Increase share of processing and value addition	Processed goods demand limited Limited interest from private sector Competition from other States	Increase processing of rice exports by improving incentive structure and producing further-processed products such as rice flour, rice bran, rice cereals, rice noodlers, rice bran oil and rice cake with direct linkage to international value chain

[1] System of Rice Intensification. Automated Wedding and Drying; Direct Seeded Rice

EXHIBIT 1.11 (continued)

Illustrative value chain approach for potato self-sufficiency

Currently, Odisha produces only…

4.28 lakh MT of potatoes against…

…a domestic demand of **13.44 lakh MT.**

The State aims to achieve self-sufficiency in potato production by 2036.

A Key pain points across potato value chain with the highest impact related to its production and value addition

Level of impact: High Medium Low

Input supplies
- Lack of quality seeds
- Lack of congenial varieties

Aggregation and logistics

Only 0.8 MT of storage capacity in the State, with existing ones in poor condition.
- Lack of cold storage facilities drive distress sales

Potato farming
- Farmers reluctant to cultivate due to high price variation
- Yields below neighboring states reducing competitiveness e.g., Odisha's productivity at ~8 tonnes per ha lags behind Chattisgarh's 14 tonnes/ha and West Bengal's 33 tonnes/ha)
- Limited adoption of best practices e.g., micro irrigation

Domestic end-markets

Odisha produces only a quarter of its demand of 15 lakh tonnes; importing large share from States such as West Bengal, Bihar and UP
- Import from other States

B Key initiatives

Lever	Key pain points	Potential opportunity
Quality seed development	Lack of timely availability of quality seeds	Partnership between Odisha State Seeds Corporation Limited (OSSC) and International Potato Center (CIP) to develop quality seeds suitable to Odisha
Scale up seed supply	Lack of timely availability of quality seeds	Promote set up of a commercial seed production centre in Odisha in public-private partnership (PPP) mode
State assurance for Potato off-take	Farmers reluctant to cultivate due to off-take uncertainty	Institute price-gap compensation scheme to reduce farmer risk associated with high potato price variability

Source: Agricultural Statistics at a Glance 2021, 2022, DAFE analysis

3.2 Enhance cold chain and other pre- and post-harvest infrastructure

The State has introduced 'Cold Storage Policy' to develop 58 cold storages at sub-divisional levels. This initiative includes establishing cold storage facilities in each sub-division, agro-processing units across all blocks, and at least two export-specific pack houses in Odisha. Some of the salient features will include:

- To address the low internal rates of return (IRRs) of 7-9% for cold storage facilities handling local fruits and vegetables, **the State will support entrepreneurs by de-risking investments and enhancing returns** through capital subsidies, training, capacity building, and performance-based operational incentives
- **A single-window clearance system and a departmental control room** will expedite scheme execution by reducing bottlenecks

Future enhancements to cold chain infrastructure will include:

- Expanding the policy to block level via Public-Private Partnerships (PPP)
- Establishing eight agri-business export centres
- Facilitating stakeholder training and exposure for farmers, entrepreneurs, and Farmer Producer Organisations (FPOs)
- Encouraging solar power adoption in cold storage facilities by offering rooftop solar subsidies, aligned with the PM Suryaghar Yojana
- Promoting diversification of cold storage to handle high-value products beyond fruits and vegetables (e.g., seafood, meat) to ensure minimum utilisation of 80% for break-even
- Supporting full value chain integration by offering limited capital subsidies for investments in refrigerated vans
- Incorporating technology for weekly demand forecasting, real-time pricing, utilisation, inventory management, and data-driven traceability
- Developing end-to-end ecosystem infrastructure, including road connectivity within a 100 km radius of cold storage facilities
- Engaging agencies for ongoing operations and maintenance to ensure continuity

The State will also implement a real-time dashboard to monitor key metrics such as operational status and capacity utilisation, enabling effective governance. Further infrastructure growth will be strategically planned to improve efficiency and ensure proper distribution, especially near consumption points.

3.3 Activate Odisha's Climate Resilience Cell, linking farmers to weather-based advisories and adaptive cropping models

The Climate Resilience Cell (CRC), established in January 2023 by the Department of Agriculture and Farmer's Empowerment (DAFE) in partnership with the Bill and Melinda Gates Foundation, focuses on **strengthening Odisha's food system against climate impacts**. This initiative utilises climate impact assessments to quantify risks and guide strategies, implementing sustainable agricultural practices, capacity building, policy advocacy, and efficient irrigation techniques through a dedicated Technical Cell in DAFE to assess infrastructure quality.

Going forward, **Odisha will ensure adequate capacity and funding to build climate resilience through**:

- Maintaining a disaster management plan and formulating disaster risk reduction strategies
- Strengthening agricultural databases for early, effective, and data-driven policymaking
- Enhancing weather forecasting with timely dissemination and customised agro-advisory services, including pest management
- Adopting climate-resilient agricultural practices with standard procedures based on climatic and context-specific information
- Facilitating global good agricultural practices exchange (GLOBALG.A.P.) through global partnerships
- Empowering CRC by empaneling leading industry experts and consulting similar organisations regularly to adopt best practices

3.4 Strengthen land rights, through a new Land Leasing Act and support to women farmers

To ensure fair and inclusive access to agricultural benefits, the State is focusing on legislative reforms and strategic initiatives designed to empower cultivators, promote gender equity, nutrition and enhance financial resilience among farmers.

3.4.1 Land Leasing Act for sharecroppers: As the number of tenant farmers and sharecroppers rises, a policy framework is essential to ensure benefits reach actual cultivators. To access subsidies, insurance, and loans, cultivators must be registered in the record of rights. The State will introduce a land leasing act to facilitate benefit distribution and conduct stakeholder consultations over one year to create a policy roadmap for its implementation

3.4.2 Promoting gender equity in agriculture through targeted policy reforms:

- Mandating complete or joint land ownership by women to qualify for schemes and subsidies
- Enrolling women landless farmers in Primary Agricultural Credit Societies (PACS) and Large-sized Adivasi Multipurpose Cooperative Society (LAMPs)

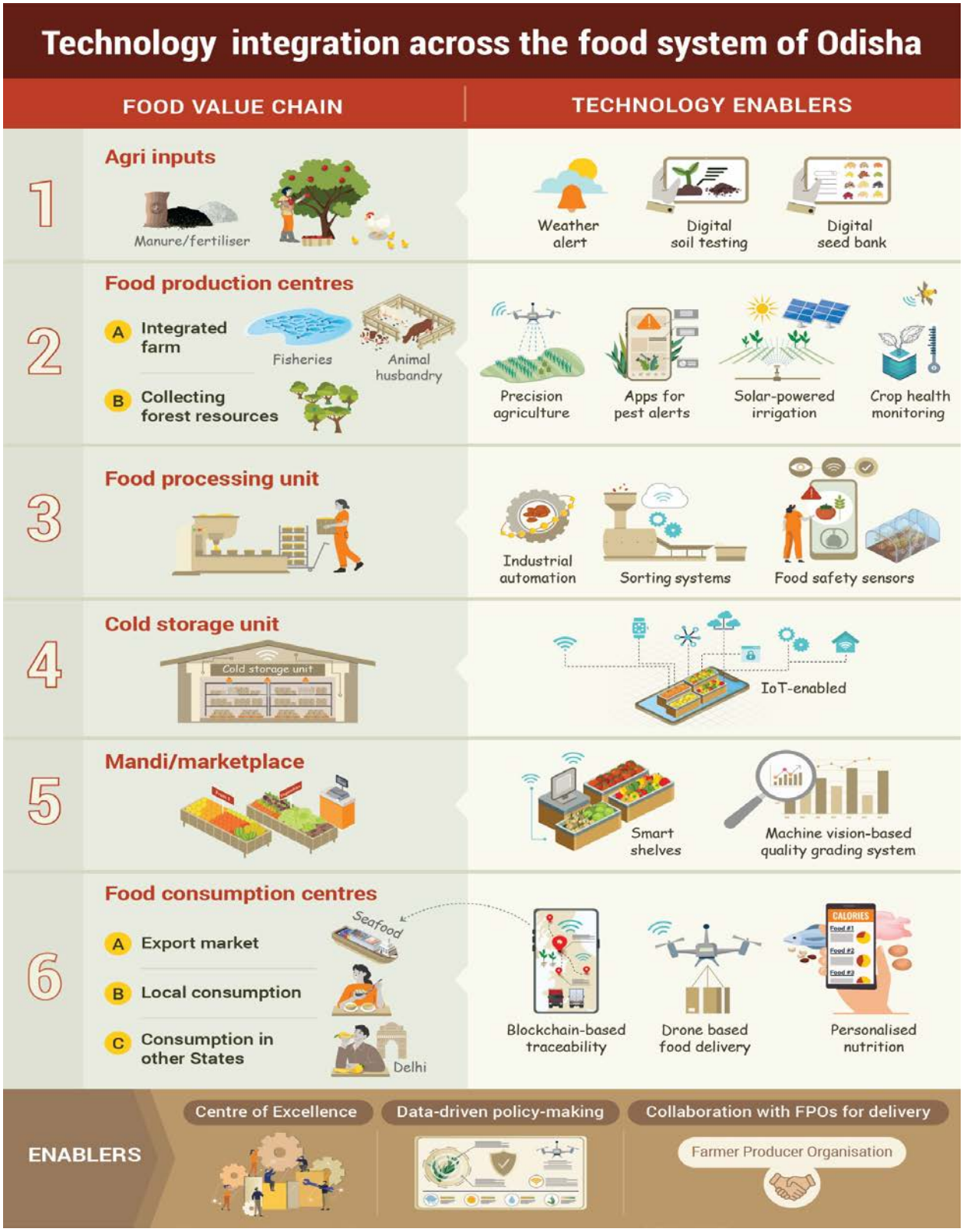
3.4.3 Enhancing financial resilience for farmers:

- Establish mini banks in every Gram Panchayat by rural co-operatives (PACS / LAMPCS) to provide universal access to essential banking services
- Ensure 100% coverage under the Pradhan Mantri Fasal Bima Yojana (PMFBY) for all farmers of the State and extending insurance cover for crop damage by wild animals
- Converting all PACS of the State as One-stop shops for farmers to ensure availabilty of all goods and services required by farmers under one roof

3.5 Scale digital agriculture through tools like prescription farming, drone spraying, and smart soil testing

Odisha has been in a leader in adoption of technology in agriculture and envisions food system that leverages technology across the value chain to improve efficiency. In line with the Government of India's Digital Agriculture Mission, the Exhibit 1.12 illustrates the State's Vision for technology adoption across Odisha's food system.

EXHIBIT 1.12


Technology integration across the food system of Odisha
FOOD VALUE CHAIN
TECHNOLOGY ENABLERS
1
Agri inputs
Manure/fertiliser
Weather alert
Digital soil testing
Digital seed bank
2
Food production centres
A Integrated farm
Fisheries
Animal husbandry
B Collecting forest resources
Precision agriculture
Apps for pest alerts
Solar-powered irrigation
Crop health monitoring
3
Food processing unit
Industrial automation
Sorting systems
Food safety sensors
4
Cold storage unit
Cold storage unit
IoT-enabled
5
Mandi/marketplace
Smart shelves
Machine vision-based quality grading system
6
Food consumption centres
A Export market
B Local consumption
C Consumption in other States
Seafood
Delhi
Blockchain-based traceability
Drone based food delivery
CALORIES
Personalised nutrition
ENABLERS
Centre of Excellence
Data-driven policy-making
Collaboration with FPOs for delivery
Farmer Producer Organisation

Further, the State will take some concrete steps towards governance and delivery to make this a reality:

3.5.1 Strengthen and scale Krishi Vigyan Kendra (KVKs) as technology Centre of Excellence (CoE) to drive research and adoption of latest agriculture technologies in a hub-and-spoke model with the hub being Odisha University of Agriculture and Technology (OUAT)

- Focus on enhancing productivity, nutritional security, and farmer incomes. For example, launch research to reduce water consumption for paddy by 30% in five years
- Create an open-access repository for best practices, case studies, and research findings; document and disseminate ecological practices, like traditional paddy varieties (e.g., Kalajeera) and indigenous water management system
- Create an 'Agricultural Innovation Fund' to develop high-yielding, climate-resilient crops and establish seed banks, such as, flood and saline resistant rice varieties for coastal regions

3.5.2 Data-driven policymaking

- Build integrated digital dashboards to consolidate data on soil health, weather, crop yields, market prices, and food stocks; include open Application Programming Interface (APIs) to enable integration with corporate and public systems for comprehensive data sharing
- Create crop-specific action plans based on soil health (e.g., 85% of Odisha's soils are acidic), rainfall patterns, and crop yields
- Use demand-supply data to implement minimum support price (MSP) interventions or export policies for surplus crops

3.5.3 Mechanisms for effective delivery of technology initiatives

- Leverage around 450 existing Farmer Producer Organisations (FPOs) to serve as technology aggregators, act as extension agents for educating farmers on modern practices, such as precision agriculture and digital marketplaces; organise live demonstration days showcasing drones, and polyhouses, etc.
- Collaborate with banks to provide low-interest loans or subsidies for farmer groups adopting Internet of Things (IoT) and sensor-based systems
- Provide support to scale farm mechanisation, increasing farm power input from 2.6 kW/ha to 4.5 kW/ha through:
    - Promotion of solar-powered stationary machines, pump sets, and post-harvest equipment
    - Strengthening the capacity building for the maintenance and support of agricultural machinery
    - Expansion of the adoption of battery-operated tractors, tillers, weeders, sprayers, and drones
    - Enhanced focus on sustainability by driving energy-efficient and eco-friendly technologies to improve productivity while reducing environmental impact

- Roll out mobile applications integrated with existing systems for pest alerts, farm management tips, and access to digital soil testing services; use apps to guide farmers step-by-step in technology implementation, including troubleshooting

3.6 Significantly expand the irrigation coverage across crops

3.6.1 Drive demand efficiency: Adopt best practices and awareness campaigns in agriculture, focusing on:

- Climate-resilient crops
- '3Rs' practices: reduce, reuse, recycle
- Volumetric water taxation based on crop water requirements

3.6.2 Expansion of current Initiatives: Through the Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA), climate-smart agricultural practices are being implemented across approximately 56,400 hectares of irrigated land and 70,000 hectares of rain-fed areas. Plans are underway to expand these activities from 15 districts to all 30 districts

3.6.3 Water conveyance efficiency: Improve efficiency from 40-50% currently to 90% via canal lining projects and automated water control systems. Prioritise high-impact projects with year-wise planning

3.6.4 Command area development: Aim for the total saturation of ongoing activities in irrigation command areas, including surveys and field channel construction, by 2036

3.6.5 Micro and precision irrigation: Odisha is currently implementing micro-irrigation on about 2% of its area, around one lakh hectares, with early progress driven by the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) 'Per drop more crop' initiative and district irrigation plans. In the current financial year, the State aims to expand micro-irrigation coverage by an additional 1.5 lakh hectares, increasing coverage by 2-3%.

To achieve its long-term Vision, by 2047, the State plans to scale up the area under micro-irrigation from 2% to 25% through a structured approach comprising three phases:

EXHIBIT 1.13

Phase 1 by 2029:
Prioritising micro-irrigation for districts in rain-fed areas to scale up micro-irrigation to ~15% in the State

Phase 2 by 2036:
Scaling up to 10% of net sown area for remaining non-coastal districts under micro-irrigation to reach 20% State-level coverage

Phase 3 by 2047:
Scale up area under micro-irrigation for coastal districts to reach ~25% of State-level coverage

This will be driven by:

- **Operational expansion**: Scale up the micro-irrigation network using a last-mile operation, management, and maintenance (OMM) model
- **Partnerships**: Collaborate with the corporate sector to facilitate this expansion
- **Fiscal support**: Implement incentives such as Viability Gap Funding (VGF) or offer long-term, low-interest loans to encourage participation and investment

This strategic plan underscores Odisha's commitment to enhancing water efficiency and supporting sustainable agricultural practices through expanded micro-irrigation infrastructure

3.6.6 Community-based water governance: Enhance community participation in water governance, with over 332 Community-Level Irrigation Projects (CLIPs) managed by Pani Panchayats. Tailor grants to increase women's involvement

3.6.7 Irrigation scheme saturation: Aim to complete the saturation of irrigation schemes by 2029

3.7 Cooperatives as Catalysts of Rural Transformation

Odisha's cooperative institutions are among the most enduring pillars of rural economic life. They have enabled access to credit, inputs, and procurement for millions of farmers. In the decade ahead, Odisha will reimagine its cooperative sector-not as a legacy structure, but as a **modern, mission-driven engine of inclusive growth and rural prosperity**.

Through a comprehensive reform programme anchored in five strategic initiatives, the State will empower cooperatives to expand their reach, diversify their roles, and lead the delivery of services, infrastructure, and enterprise support at scale.

Smart Farm Markets: **Redefining Mandis for the 21st Century**

Odisha will transform 100 agricultural mandis into **Smart Farm Markets**-digitally connected, hygienic, and export-ready agri-business hubs. Each market will include infrastructure for cold storage, auction platforms, digital payments, grading, and farmer convenience facilities.

- **By 2036**, 100 Smart Farm Markets will be fully operational across high-volume zones.
- **By 2047**, these markets will anchor district-level agri-export value chains and handle over 75% of all formalised rural market trade volumes in the State.

These smart markets will reduce post-harvest losses, improve price discovery, and enable farmers to access both domestic processors and global buyers directly.

One-Stop Cooperative Shops: Bringing Services Closer to Farmers

The Government will upgrade 80% of Odisha's 4,252 PACS and LAMPCS into **One-Stop Cooperative Shops** that offer integrated access to agricultural inputs, credit, procurement, crop insurance, retail services, and welfare enrolment.

- **By 2036**, over 3,400 cooperatives will operate as full-service rural business centres.
- **By 2047**, every functional cooperative in Odisha will be self-sustaining, digitally connected, and performance-rated-serving as the first point of contact for at least half of all rural households.

These centres will reduce transaction costs, deepen financial inclusion, and empower cooperatives to serve as accessible, accountable institutions of economic support.

Export-Ready Cooperatives: **Connecting Farmers to Global Markets**

Fifty cooperatives will be developed into **Export Facilitation Centres**, with processing, packaging, certification, and traceability infrastructure tailored to global standards.

- **By 2036**, 50 cooperatives will export high-value crops such as turmeric, cashew, millets, and mango through formal international channels.
- **By 2047**, Odisha will have **100 or more cooperative-led export corridors**, each integrated with specific commodity clusters and contributing to 20% or more of Odisha's total agri-export value.

This initiative will raise farmers' price realisation, reduce intermediary dependency, and establish Odisha's identity in global food and herbal markets.

District Value Chain Infrastructure: Ensuring Seamless Farm-to-Market Flow

Each district will receive targeted investment to build a **cooperative-managed agricultural infrastructure ecosystem** including aggregation points, dry and cold storage, logistics hubs, and market linkages.

- **By 2036**, all 30 districts will have operational, cooperative-linked value chain systems, with 10 priority districts covered by 2029.
- **By 2047**, Odisha will have a **statewide integrated logistics network** connecting cooperatives, mandis, and markets, supported by digital tracking and dynamic pricing mechanisms.

Presently, Odisha's cooperative network has a combined storage capacity of **11.63 lakh metric tonnes (LMT)**.

- **By 2036**, Building on this foundation, the State will enable its capacity to reach 15 LMT through targeted investments in block-level warehousing and decentralised aggregation infrastructure.
- **By 2047**, Odisha aims to achieve an over 200% increase in cooperative-led storage, scaling total capacity to 250 LMT. This transformative leap will position Odisha as a national leader in community-owned, post-harvest infrastructure.

This expansion will minimise post-harvest losses, stabilise rural commodity prices, and empower cooperatives to manage supply chains with speed, scale, and efficiency. It will also unlock new economic opportunities in value-added processing, agri-logistics, and food security systems-ensuring that no farmer is left behind due to inadequate storage.

Community Cooperatives: Supporting Rural Livelihoods Beyond Farming

Cooperatives will be formally recognised as platforms for **wider rural service delivery**, including women's entrepreneurship, youth training, social protection, and clean energy access.

- **By 2036**, cooperatives in at least 60% of blocks will deliver non-farm services such as SHG financing, pension facilitation, and skill-building programmes.
- **By 2047**, Odisha will ensure that 40% of cooperative leadership positions are held by women or youth, and that cooperatives are core partners in implementing government schemes across sectors.

This expansion will strengthen the cooperative ecosystem as a delivery arm of the State, while embedding it more deeply in the lives of every rural household.

By integrating these reforms into the cooperative landscape, Odisha will build a **next-generation rural economic architecture-resilient, inclusive, and enterprise-driven**. Through smart markets, export hubs, rural business centres, and community-led services, cooperatives will no longer be just support structures—they will be frontline agents of economic transformation.

CHAPTER 2

ANIMAL HUSBANDRY: BOOSTING FARM INCOME

Summary

In Odisha, the animal husbandry sector contributes 3% to the State's GSDP, compared to the national average of 4.5%. It also makes up 16.7% of the agricultural GSVA, matching the national level. Poultry is the leading component, with a growth of 38% between 2012 and 2019, reaching a population of 274 lakhs, which represents 3.2% of India's total. Conversely, livestock numbers fell by 13% in the same period, totaling 182 lakh or 3.4% of India's livestock in 2019. Despite being viewed as a promising area for advancement, Odisha's animal husbandry sector's growth was only 1.7% over the past decade, lagging the national growth rate of approximately 9%.

Odisha aspires to achieve self-sufficiency and boost farmer incomes by transitioning to high-yield livestock, leveraging enhanced inputs, rigorous health monitoring, and export-focused value addition capabilities.

By 2047, the State envisions the following outcomes

- Be among top five States in egg production
- Increase milk and meat production by four-folds
- Become a leading State in veterinary health outreach

Key initiatives to achieve the outcomes

Expand egg production five-fold to INR 1,700 cr./year by promoting mechanised layer farms under 'Industrial policy (IPR) 2022', improving biosecurity for increased exports, and fostering compartmentalisation

Increase daily milk output four-fold to 274 lakh litres by advancing crossbred cattle genetics, fostering corporate investment in processing, reinforcing cooperatives, enhancing fodder availability, and expanding procurement

Quadruple meat production to 0.8 MMTPA focusing on superior goat breeds and meat processing

Improve livestock health care by establishing 'Livestock resource centres (Prani Sampad Seba Kendras)' for preventive vaccinations, veterinary polyclinics, and vaccine production labs

Over the next 24 months, the State will

- Facilitate establishment of **two large-scale processing plants**, each for meat and egg
- Launch a comprehensive programme for **enhancement of genetic potential and productivity of dairy animals**
- **Key policy interventions**:
  - Notify the inclusion of mechanised layer farms under IPR 2022
  - Re-align the subsidy pattern under Mukhyamantri Krushi Udyog Yojana
  - Revise the 'Odisha poultry policy, 2015' and 'Bovine breeding policy, 2015'
  - Notify the 'Small animal breeding policy'
- Establish state-of-the-art '**Molecular diagnosis laboratory**' and '**Odisha feed analysis laboratory**'
- Engage 2,000 'Accredited agents for health and extension of livestock production (A-HELP)' to act as **primary livestock service providers**

1.Context

Odisha boasts a rich history in animal genetics dating back to the Kalinga Empire, supported by diverse climates, dense forests, and ample water. The State is home to indigenous breeds like Binjharpuri cattle, Chilika and Manda buffaloes, Black Bengal ganjam goats, as well as Aseel and Hansili chickens. Today, 83% of Odisha's population lives in rural areas, and 80% of households own livestock. Currently, livestock breeding primarily supports self-sustenance and contributes roughly 30% to farmer income. Looking ahead, Odisha aims to significantly increase income through livestock, especially benefiting women and small landholders.

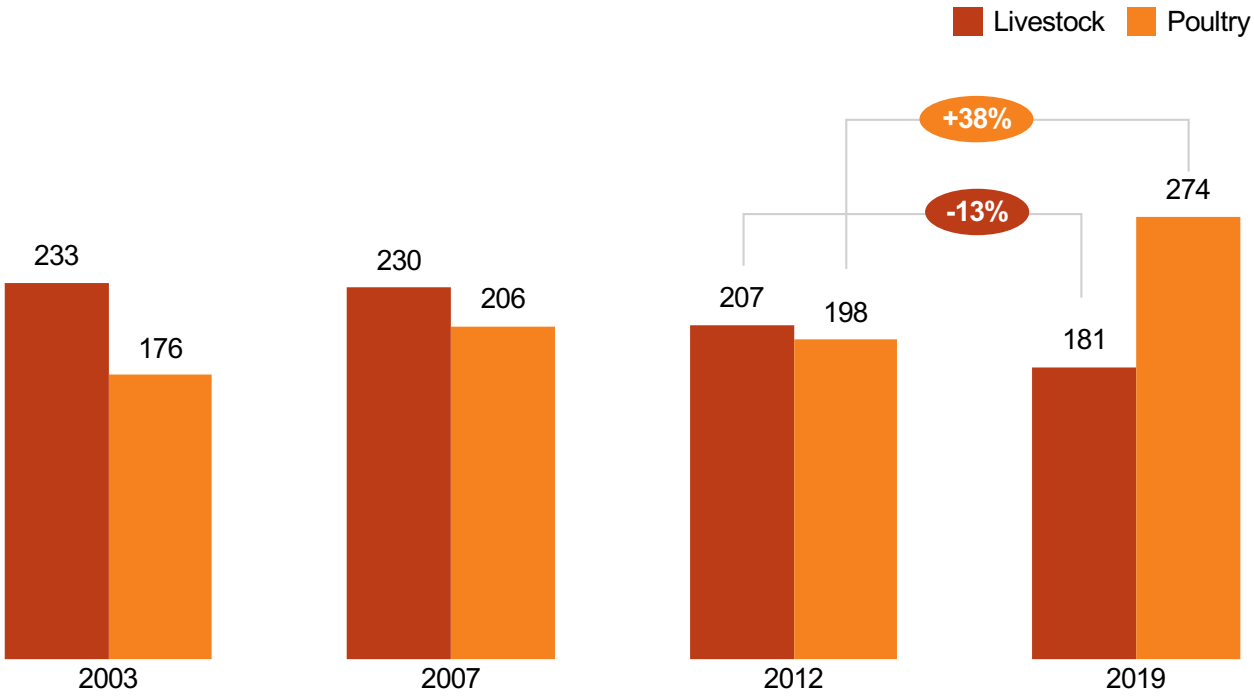
1.1 Current scenario

In the past decade, Odisha's animal husbandry sector has experienced a modest growth rate of 1.7% CAGR. Currently, it accounts for 3% of the State's GSVA and 16.7% of the agriculture GSVA. There is potential for expansion, given the national sectoral contribution of 30% to agriculture GSVA. Poultry dominates Odisha's animal resources with a 38% growth vs. 13% decline in livestock:

EXHIBIT 2.1

Livestock and poultry by species for Odisha

(Numbers in lakhs)



Source: The 20th livestock census by the Government of India, 2019

Odisha's animal husbandry sector shows a promising trajectory, marked by significant contributions in eggs, milk, and meat production:

- **In 2023-24, Odisha ranked 10th among the egg-producing States in India**, with an impressive annual production of 372 crore eggs. Over the past decade, egg production has consistently grown at a robust CAGR of 8%, contributing 2.6% to the national output. However, with Odisha's per capita egg availability at 80, it lags the national average of 103. Current demand is primarily fueled by urban and semi-urban consumers and is expected to increase as more of Odisha's youth increasingly favour high-protein diets
- **Similarly, in the domain of milk production, Odisha stands 16th in India**, producing 2.6 MMTPA milk in 2023-24. This accounts for a modest 1% of India's total milk production, despite Odisha holding 5% of the country's cattle. The State's milk sector has only seen a 1.7% CAGR over the past five years, significantly lagging behind the national growth rate of 5.3%. This discrepancy is largely due to the poor adoption of crossbreed cattle, which make up just 16% of the population despite yielding 60-70% of the milk. However, with a projected growth in milk demand at an 8% CAGR, Odisha aims to reach a production level between 4 to 5 MMTPA by 2047
- **In meat production, Odisha ranks 13th among Indian States**, with a production of 0.24 MMTPA in 2023-24, growing at a 4% CAGR over the last decade and contributing 2.3% to national output. Poultry comprises roughly 55% of this production, followed by goat meat at 40%. Driven by rapid urbanisation and rising income levels, along with a growing preference for protein-rich diets, meat consumption in Odisha is expected to increase to 0.27 MMTPA by 2036

Collectively, these trends highlight the sector's substantial potential for growth, emphasising opportunities for strategic investments to meet the increasing domestic and national demands.

1.2 Key challenges

While the animal husbandry sector has primarily focused on self-consumption, there is an opportunity to unlock the sector's potential and enable surplus production for export. To achieve this, the State will need to overcome certain key challenges:

EXHIBIT 2.2

- **Low levels of public investment**, with budget allocation to the sector at just 1.8% of the agriculture budget compared to 3.2% nationally
- **Low livestock productivity and milk yield** due to high dependence on indigenous breeds with only 16.5% of the cattle in Odisha as cross breed
- **Shortage of quantity, poor quality and high price volatility for feed**: Odisha has estimated shortage of 45-50% and 20-25% green and dry fodder, respectively
- **Increased threat from climate change**, e.g., frequent floods and cyclones, heat strokes, and depletion of community land and forests, etc.
- **Occurrence of livestock diseases**
- **Low adoption of modern techniques** due to small scale livestock holdings with backyard animal husbandry
- **Poor adoption of commercial farming** due to higher capital investment, despite 40% capital subsidy
- **Lack of processing facilities** and post-production units limiting the capitalisation on value-added products like egg powder, dairy products, and meat cuts

1.2 Key trends

Animal husbandry is a vital component of Odisha's agricultural economy. To enhance productivity and sustainability, the State can draw lessons from global and national trends:

EXHIBIT 2.3

Adoption of digital technologies: Technology integration is revolutionising livestock management by enabling precision care and improving productivity. For e.g., in the Netherlands, dairy farmers utilise wearable sensors to monitor cow health, leading to a 15% increase in milk yield

Emphasis on sustainable practices: There's a growing focus on reducing methane emissions from livestock to combat climate change. For e.g., New Zealand implements methane inhibitors in cattle feed, achieving a 30% emissions reduction

Focus on animal health and welfare: Improved animal health enhances productivity and sustainability. Australia's 'National livestock identification system' ensures traceability, improving animal health management

Data-driven decision making: The use of data analytics in livestock farming aids in making informed decisions, improving efficiency and productivity

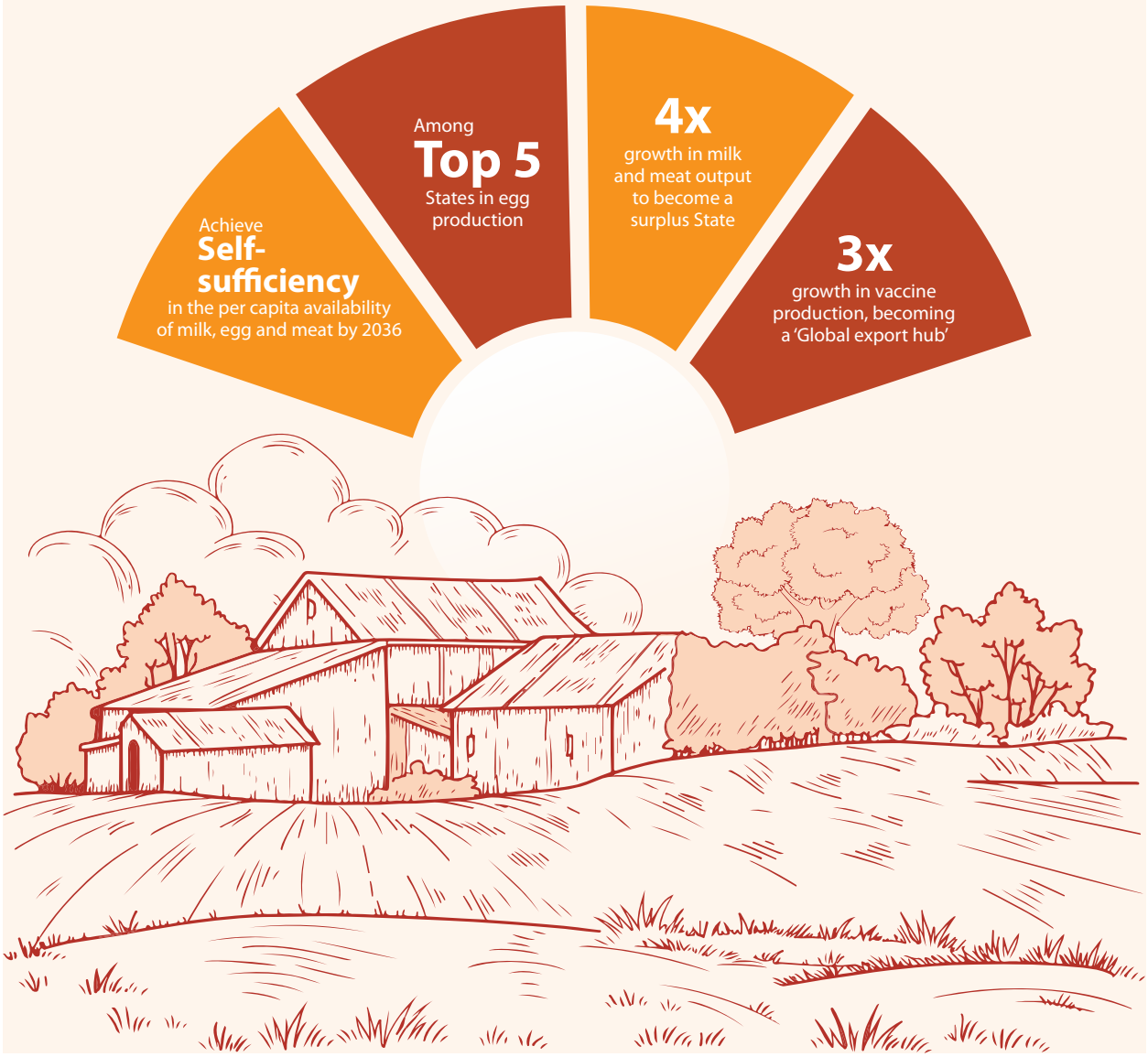
2. Vision and outcomes

The State will undertake a comprehensive transformation programme across agriculture, animal husbandry and fisheries to boost farmer income.

EXHIBIT 2.4

VISION 2047

Achieve self-sufficiency and boost farmer incomes by transitioning to high-yield livestock, leveraging enhanced inputs, rigorous health monitoring, and export-focused value addition capabilities



To achieve this Vision, the State envisions achieving the following outcomes:

EXHIBIT 2.5

Target commodity	Key outcomes	Unit	Current	2029	2036	2047
Egg	Production	Crore units per annum	372	500	1,000	1,700
	Per capita availability	Nos. per annum	80	100	181	283
	Processing units	Number	-	2	5	10
Milk	Production	Lakh litres per day	70	80	165	274
	Per capita availability	Grams per day	156	175	300	456
	Dairy processing capacity	Lakh litres per day	15	25	60	100
Meat	Production	Lakh MT per annum	2	4	6	8
	Per capita availability	Kg per annum	5	9	11	13
	Processing units	Number	-	2	6	8
Overall	Veterinary policlinics at sub-divisional level	Number	4	30	58	58
	Livestock Resource Centres (LRC) at potential Gram Panchayats (Prani Sampad Seva Kendra)	Number	-	314	1,000	2,000

3. Key initiatives

To achieve this ambitious Vision, the State will take up four key initiatives:

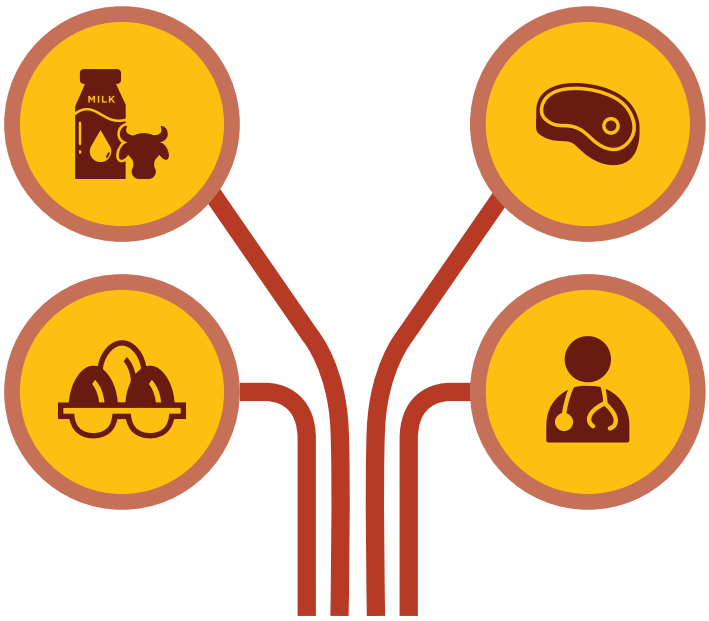
EXHIBIT 2.6

2

Increase daily milk output four-fold to 274 lakh litres by advancing crossbred cattle genetics, fostering corporate investment, reinforcing cooperatives, enhancing fodder availability, and expanding procurement

1

Expand egg production five-fold to 1,700 cr. per year



3

Quadruple meat production to 0.8 MMTPA

4

Transform veterinary health care for sustainable production

3.1 Expand egg production five-fold to INR 1,700 crore per year

3.1.1. Integrate mechanised poultry farms into the 'Industrial Policy (IPR), 2022' to streamline operations, enhance productivity, and attract investments

3.1.2. Encourage the participation of corporate players, including leading firms and direct-to-consumer (D2C) startups, to bring in advanced technologies, efficient management practices, and innovative business models

3.1.3. Re-align the subsidy structure under the Mukhyamantri Krushi Udyog Yojana (MKUY) to better support the expansion and modernisation of poultry farms, ensuring financial viability and sustainability

3.1.4. Strengthen bio-security measures and promote the compartmentalisation of layer farms to meet international standards. This will be achieved through extensive extension activities, awareness programmes, and regular audits, thereby facilitating exports

3.1.5. Revisit and update the 'Odisha Poultry Policy, 2015' to address existing bottlenecks, streamline regulatory processes, and create a more conducive environment for growth

3.1.6. Facilitate the entry of integrators into layer farming to create robust market linkages. These integrators will act as aggregators, thereby de-risking smaller farmers and ensuring a stable supply chain

3.2 Increase daily milk output four-fold to 274 lakh litres

3.2.1. Enhance genetic potential and productivity

- Launch an accelerated breed development programme to enhance the genetic potential and productivity of dairy animals. This will include the use of sex-sorted semen and embryo transfer technology, with activities tracked through a revamped 'Pashudhan' portal dashboard
- Increase artificial insemination coverage from the current 25% of the breedable population to at least 65-70%
- Improve support structure by establishing:
  - Another 'Frozen semen station' in the State to meet the growing demand for high-quality semen
  - One 'In-Vitro Fertilisation (IVF) laboratory' to advance genetic improvements
  - One 'Sex-sorted semen laboratory' to ensure a higher yield of female calves
- Roll out an on-call artificial insemination service across all districts to provide timely and accessible delivery

3.2.2. Revise the 'Bovine breeding policy, 2015' to align it with the current aspirations of enhancing the genetic potential; ensure provisions for the conservation and protection of the State's indigenous breeds to maintain biodiversity and promote sustainable livestock development

3.2.3. Facilitate corporate engagement in dairy processing

- Encourage corporate players to participate in dairy processing and value addition. As milk production scales beyond local needs, capacity expansion in processing will become imperative
- Provide a level-playing field by incentivising the establishment of new dairy processing plants and cold chain facilities

3.2.4. Strengthen the dairy co-operatives: The State acknowledges the growing significance of dairy cooperatives as the sector expands. To fortify these cooperatives, Odisha will undertake the following initiatives:

- Provide capital subsidies for infrastructure development to enhance cooperative capabilities
- Support capacity building through mentorship programmes focused on technical skills in machinery operation, product development, and other essential areas
- Develop a robust marketing and rebranding strategy to capitalise on the growing demand for value-added dairy products

3.2.5. Ensure quality fodder and silage availability

- Increase the availability and use of quality fodder and silage through targeted activities
- Promote entrepreneurship in fodder production to ensure a steady supply of high-quality feed
- Encourage the use of drought-tolerant forage varieties to ensure resilience against climate variability
- Support the establishment of silage manufacturing plants and other infrastructure, such as fodder banks, with subsidies for working capital, complementing the Central Government schemes
- Conduct awareness campaigns to demonstrate that a 50% shift to silage can boost milk yields by 2-3 litres per day, thereby improving overall productivity

3.2.6. Scale milk route and milk procurement

- Establish milk collection centres in every Panchayat (through cooperatives or dairies) and 'Milk chilling centres' in every sub-division; equip these centres with cold chain infrastructure, including bulk milk coolers, milk testing equipment, and Automated Milk Collection Units (AMCU)
- Allocate budget to scale milk routes, especially in areas with limited volumes
- Establish a robust network of food testing laboratories to ensure quality and safety in the dairy sector

3.3 Quadruple meat production to 0.8 MMTPA

3.3.1. Facilitate genetic improvement of goat breeds

- Improve productivity and quality through artificial insemination and selective breeding techniques
- Collaborate with research institutions such as the Central Institute for Research on Goats (CIRG) and the Central Sheep and Wool Research Institute (CSWRI) to introduce superior germplasm through artificial insemination
- Establish a dedicated 'Goat semen station' to ensure the availability of high-quality semen for artificial insemination programmes

3.3.2. Empower farmers with **advanced pig farming techniques** through structured extension programmes

3.3.3. Promote **commercial-level goat farming** to scale up production and meet market demand

3.3.4. Facilitate the **establishment of meat processing plants** through new and existing schemes. For example, the State can support new enterprises through the Mukhyamantri Krushi Udyog Yojana (MKUY) scheme with incentives on fixed capital investment and fast-track clearance of proposals

3.3.5. Formulate and notify a comprehensive '**Small animal breeding policy**' to provide clear guidelines and support for the breeding of small animals such as goats and pigs

3.4 Transform veterinary health care for sustainable production

3.4.1. Set up **veterinary polyclinics** in each sub-division and introduce 'Video veterinary service for animal husbandry'

3.4.2. Develop new '**Livestock Resource Centres (LRC)' or 'Prani Sampad Seba Kendra**' as one-stop points to meet all the veterinary needs of livestock farmers, including healthcare, vaccination, feed, insurance services, medicines, scheme guidance, and market information

3.4.3. Expand veterinary services to target at least one Veterinary Dispensary (VD) per 10,000 adult livestock

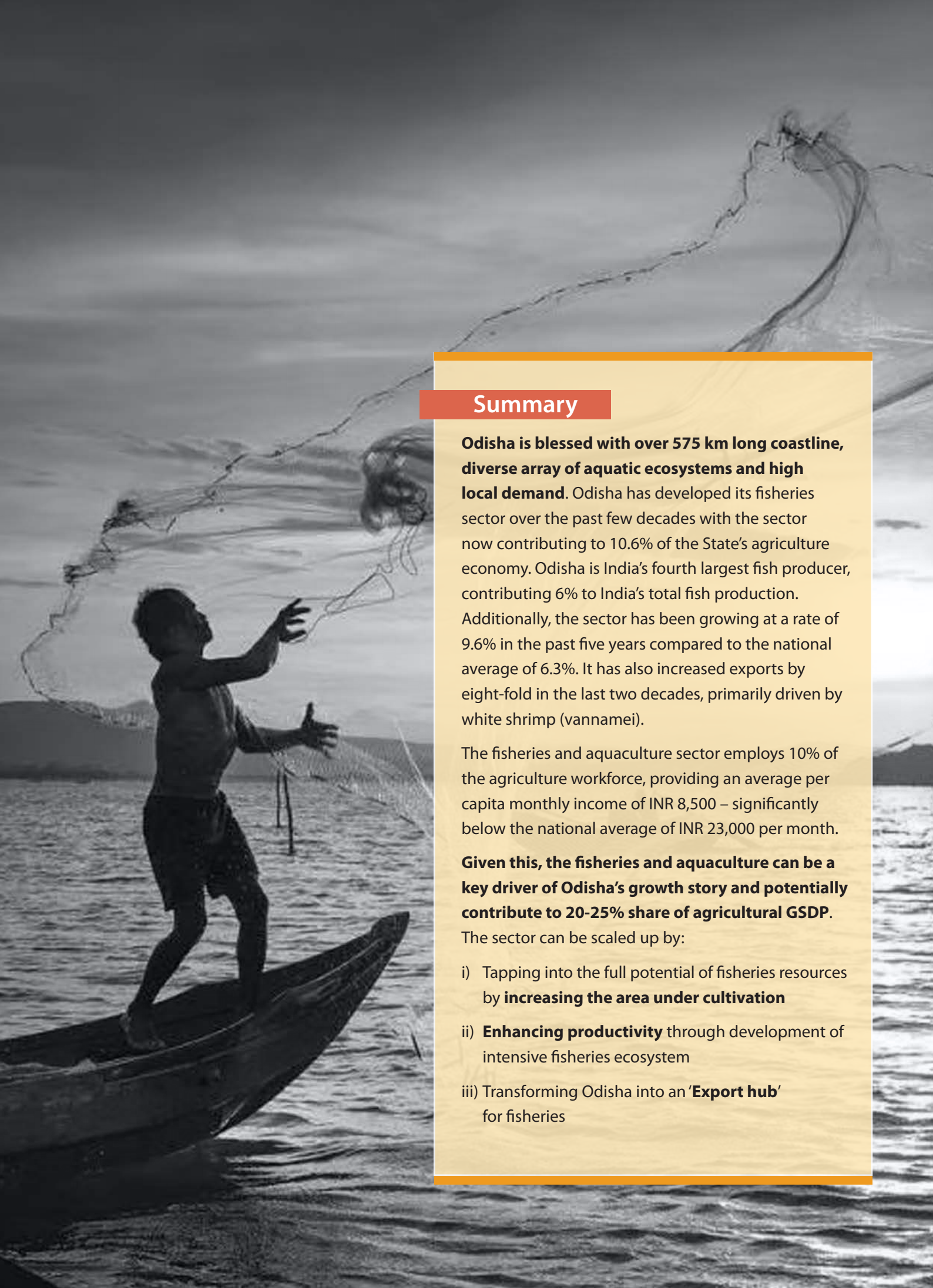
3.4.4. Establish advanced laboratories

- Good manufacturing practices (GMP) lab to produce viral vaccines for lumpy skin disease and goat pox
- State feed analytical laboratory
- Molecular diagnosis laboratory for the early diagnosis of livestock diseases

3.4.5. Engage 2,000 new community-based functionaries, known as '**Accredited agents for health and extension of livestock production (A-HELP)**', to act as primary service providers in areas without livestock aid centres

CHAPTER 3

BLUE ECONOMY: SCALING UP FISHERIES AND AQUACULTURE



Summary

Odisha is blessed with over 575 km long coastline, diverse array of aquatic ecosystems and high local demand. Odisha has developed its fisheries sector over the past few decades with the sector now contributing to 10.6% of the State's agriculture economy. Odisha is India's fourth largest fish producer, contributing 6% to India's total fish production. Additionally, the sector has been growing at a rate of 9.6% in the past five years compared to the national average of 6.3%. It has also increased exports by eight-fold in the last two decades, primarily driven by white shrimp (vannamei).

The fisheries and aquaculture sector employs 10% of the agriculture workforce, providing an average per capita monthly income of INR 8,500 – significantly below the national average of INR 23,000 per month.

Given this, the fisheries and aquaculture can be a key driver of Odisha's growth story and potentially contribute to 20-25% share of agricultural GSDP. The sector can be scaled up by:

i) Tapping into the full potential of fisheries resources by **increasing the area under cultivation**

ii) **Enhancing productivity** through development of intensive fisheries ecosystem

iii) Transforming Odisha into an '**Export hub**' for fisheries

By 2047, the State envisions the following outcomes

- Be among the **top two states in shrimp production and export**, empowering coastal communities and driving global recognition
- Be among the **top three states in freshwater and seafood production and export**, fueling livelihoods and nourishing the nation
- Be among the **top three states in marine fishing**, unlocking the full potential of our oceans for prosperity and pride

Key initiatives to achieve the outcomes

Enhance shrimp production to 1.4 MMTPA through interventions across value chain, including:

- Promulgation of the 'Odisha Shrimp Mission' with clear targets and institutional support
- Enhancing production and supply of quality seed and feed
- Increasing cultivable brackish water area up to 10 km from the coastline (form 2 km currently)
- Improving overall productivity, including expanding the type and quantity of processing capabilities and trade support

Scale up marine fisheries to 0.6 MMTPA by establishing deep-sea fishing harbours (starting with Gopalpur), expediting the introduction of deep-sea fishing vessels and Tuna long liner fishing, upgrading and mechanising existing fishing vessels, enriching coastal stock through deployment of artificial reefs and sea-ranching, and developing a robust 'Water leasing policy' of territorial waters

Increase freshwater fish production to 3 MMTPA through development of aquaculture clusters for promoting export-oriented fish varieties such as genetically improved farmed Tilapia (GIFT), seabass, and mud crabs; expansion of culture area under private land, intensification of culture system (biofloc or RAS), species' diversification and promotion of value-added activities of freshwater species

Develop and modernise fishing harbours and landing centres across Astrang, Chudamani, Gopalpur and Bahabalpur

Over the next 24 months, the State will

- **Conduct satellite surveys** to assess fisheries resources and identify champion districts; develop detailed business plans to expand cluster-based freshwater and brackish water fisheries
- **Develop and implement a detailed action plan for Odisha's 'Shrimp mission'** through project management unit (PMU) support
- **Facilitate legislative reforms** to expand the cultivable brackish water area to 10 km from the coastline, up from 2 km currently
- **Expedite longliner availability** by providing (a) Regulatory approval of preferred deep-sea fishing vessel (DSFV) designs by the Indian Register of Shipping (IRS) and (b) Collaboration with organisations such as Central Institute of Fisheries Technology (CIFT), Cochin for design modifications to existing trawlers
- **Facilitate the development** of 4,000 ha of new fresh water and 1,000 ha of new brackish water ponds
- **Complete the following infrastructure projects**:
  - Develop a state-of-the-art 'Odisha Shrimp Seed Production and Research Centre (OSSPARC)' for seed supply of 'Sea bass', 'Penaeus monodon', and GIFT Satellite Centre at Bomlai
  - Build common infrastructure facilities at Hirakud
  - Deploy artificial reefs at the sites sanctioned under the Pradhan Mantri Matsya Sampada Yojana (PMMSY)
  - Upgrade the harbours at Chandipur and Dhamra to modernise with technology integration
  - Enhance value-added facilities in at least 10 processing plants
- **Coordinate with IDCO[1] to fully operationalise the seafood park at Deras** (currently operating at a 25% capacity)

[1] The Odisha Industrial Infrastructure Development Corporation

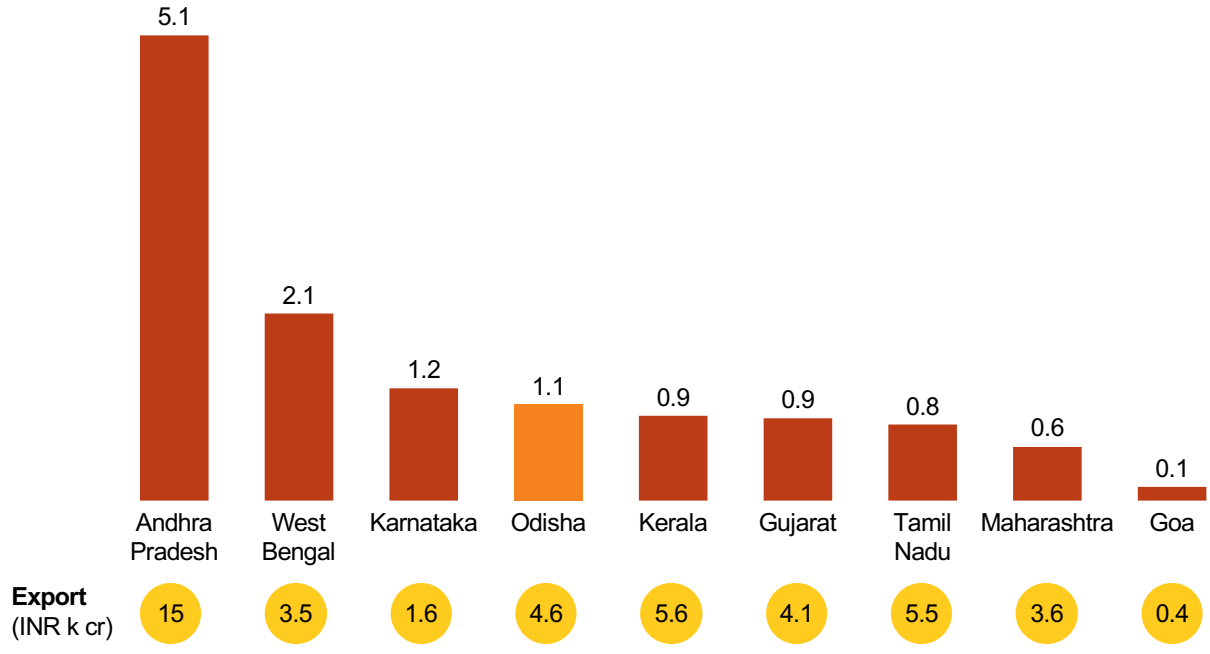
1. Context

Odisha is strategically positioned with a 575 km coastline and one of the world's largest coastal lagoons (Chilika Lake), along with several rivers - making it a prime location for fisheries. Historically, Odisha's marine exports flourished in the 1970s through the Paradip port, primarily with Japan as a major market. The 1990s saw a boom in demand, spurring investments in black tiger shrimp aquaculture. However, frequent viral outbreaks led to significant setbacks until the introduction of vannamei shrimp revitalised the sector with its virus resistance, higher yields, and export value.

Today, **Odisha ranks as India's fourth largest fish-producing State**, with an output exceeding 10.5 lakh MMTPA for the year 2022-23, contributing to 5.2% of India's total fisheries exports:

EXHIBIT 3.1

State-wise fish production[1], MMTPA 2022-23



Freshwater fish constitute two-thirds of this output, complemented by 14% from brackish water and 20% from marine sources. Exports from Odisha have surged eightfold to 0.1 MMTPA in the last two decades, yielding foreign exchange of INR 4,600 crore, largely driven by vannamei shrimp sales.

Despite significant progress, boasting an established ecosystem comprising input suppliers, aggregators, cold-chain players, processors, exporters, and retailers, Odisha remains dependent on Andhra Pradesh for broodstock, fish feed, and freshwater fish.

[1] Considered only the coastal States of India
Source: Handbook of fisheries statistics 2023, Odisha fisheries annual activity report 2023-24, MPEDA Fisheries export data 2021

1.1 Odisha's shrimp ecosystem

Odisha capitalises on its extensive shrimp ecosystem, which spans **4.2 lakh hectares of brackish water** resources, prominently featuring Chilika Lake. This expansive habitat is ideal for cultivating vannamei shrimp, known for high yield and disease resistance, thereby ensuring robust production. As a result, Odisha proudly stands as the **second-largest shrimp producer in India**. The State's strategic focus on enhancing farming practices and sustainability initiatives not only boosts productivity but also strengthens its pivotal role in the national aquaculture landscape.

EXHIBIT 3.2

Shrimp ecosystem is growing in Odisha

Six
Coastal districts drive production – Ganjam, Puri, Jagatsinghpur, Kendrapada, Bhadrak and Baleswar

20%
CAGR in shrimp production between FY11-22, reaching 0.1 MMTPA in FY22

>5x
Growth in income of shrimp farmers vs. paddy cultivators

~95%
share of litopenaeus vannamei (American white legged shrimp) sub-species in total shrimp production

6x
Growth in the shrimp productivity from FY02-22, increasing from 1.1 to 6.6 MT/ ha

3x
Growth in shrimp culture area between FY01-22, from 6,000 to about 16,000 hectares

In terms of exports, Odisha is a significant contributor, dispatching approximately 0.08 MMTPA of vannamei shrimp to key international markets – The United States, Europe, various Asian nations such as Japan and China, and the Middle East. **Odisha ranks eighth among India's coastal States in export volumes**, contributing 12% to the nation's overall shrimp exports.

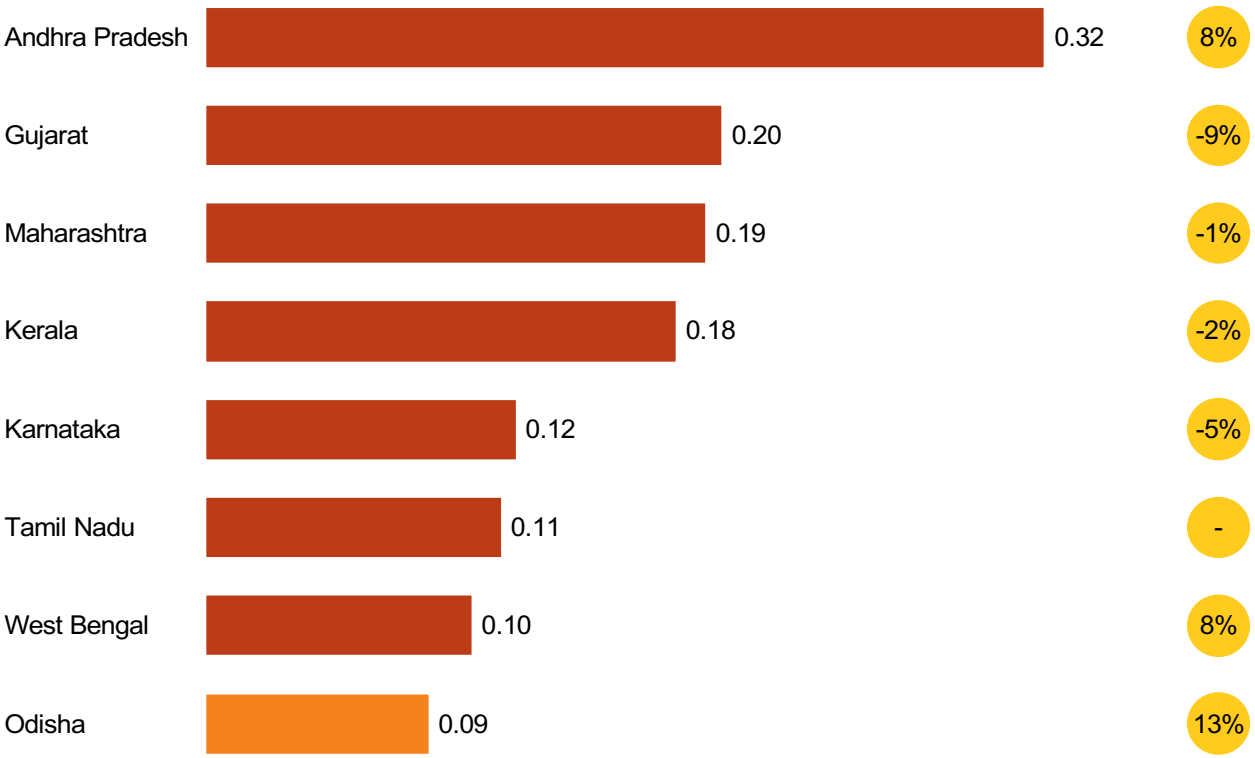
Source: Odisha Fisheries Policy (2015), Odisha Food Processing Policy (2022), Development of Inland Fisheries and Aquaculture scheme, Central Sector Scheme (CS) of the Pradhan Mantri Matsya Sampada Yojana (PMMSY) for biofloc technology, Promotion of Polylining Technology for Intensive Shrimp Farming scheme

With a 7% CAGR in the sector, Odisha is well-positioned to elevate its standing, potentially becoming a leader in the global shrimp trade by capitalising on its strategic advantages and expanding its international reach.

EXHIBIT 3.3

Export landscape of frozen shrimp in India **2018-22 CAGR**

MMTPA



1.2 Marine and freshwater fishing ecosystem

As mentioned above, Odisha's maritime resources are formidable, making it an optimal region for marine fisheries. **Currently, the State harvests 0.23 MMTPA of marine fish, closely approaching the maximum sustainable yield (MSY) of around 0.3 MMTPA within its territorial waters**. By achieving the MSY and expanding into deep-sea fishing, Odisha is poised to potentially triple its marine fish output by 2047.

Equally significant is Odisha's freshwater ecosystem, spanning 7 lakh hectares, with 1.6 lakh hectares dedicated to private aquaculture. This sector contributes 0.7 MMTPA of freshwater fish, representing 66% of the State's total fish production. Prominent species include Rohu (33%), Catla (25%), and Mrigal (13%). With 95% of the population consuming fish, Odisha's per capita consumption ranks high at 18kg. Despite this, the State imports around 0.04 MMTPA of freshwater fish, primarily due to the strong local demand for species like Rohu and Catla.

1.3 Key challenges

Despite significant progress, Odisha's fisheries sector faces challenges including reliance on external sources for broodstock and fish feed, under-utilised aquaculture potential, and the need to achieve maximum sustainable yields to meet burgeoning local and export demands, as shown below:

EXHIBIT 3.4

- **Limited deep-sea fishing**: In Odisha, fishing activities primarily focus within 24 km from the coastline, whereas neighbouring States like Andhra Pradesh exploit much beyond, capturing high-value deep-sea species
- **Inflexible brackish water regulations**: Inland brackish water aquaculture is restricted to just two km from the coastline, despite evidence showing potential expansion up to 10 km which could boost production by 50%
- **Reluctance to diversify into aquaculture**, despite evidence from NABARD[1] that it can generate nearly five times the income per hectare compared to rice farming in similar regions
- **Sustainability concerns**: Overfishing and habitat damage are prevalent as 60% of fisheries do not adhere to sustainable practices and rely on outdated equipment, severely impacting fish stocks (FAO)[2]
- **Water quality limitations**: Fish farms rely extensively on agricultural runoff, which contains 30% more fertilisers than optimal for aquaculture, as per the Indian Institute of Science (IISc), leading to compromised fish health and degraded water quality

[1] National Bank for Agriculture and Rural Development
[2] Food and Agriculture Organisation of the United Nations

- **Vulnerability to extreme weather**, with cyclones and floods occurring at a frequency of 3-4 major events per decade, severely disrupting operations
- **Accelerated urban expansion** threatens significant reduction of available fishing grounds and habitats if current trends continue unchecked

1.4 Key trends

Aquaculture has become a pivotal component of global and national food systems, with significant trends emerging that Odisha will get inspired from:

EXHIBIT 3.5

Sustainable aquaculture practices: Increasing emphasis on minimising environmental impacts and ensuring long-term viability. For example, Norway's salmon farming industry has implemented advanced technologies to reduce environmental footprints, such as closed containment systems that minimise waste discharge and prevent disease transmission

Species diversification: As of 2022, just 17 out of approximately 730 farmed species represent about 60% of global aquaculture production, highlighting the need for diversifying farmed species to reduce market risks and environmental pressures. Countries like Vietnam have diversified beyond traditional species by cultivating pangasius (catfish), which has become a significant export product

Technological innovations: Global aquaculture production has been dominated by Asia, contributing 89% over the past two decades, with countries like China, India, and Indonesia consolidating their share through technological advancements, enhancing productivity and sustainability. For example, China utilises integrated multi-trophic aquaculture (IMTA) systems, where different species are farmed together to create balanced ecosystems, improving efficiency and reducing waste

Focus on feed sustainability: The creation of alternative feeds using ingredients like soy and corn is intended to lessen reliance on wild fish, as around 17 million of the 91 million metric tons of wild-captured fish are currently redirected to aquaculture each year. However, this transition has resulted in significant environmental repercussions, such as deforestation and pollution, underscoring the need for balanced approaches

Community engagement and capacity building: Engaging local communities and building capacity are vital for the success of aquaculture initiatives. In 2018, an estimated six crore people were engaged in the primary sector of fisheries and aquaculture, with Asia accounting for 85% of this workforce

2. Vision and outcomes

Odisha has a huge potential to multiply its export revenue by developing processing infrastructure for aqua-products.

EXHIBIT 3.6

VISION 2047

Odisha envisions making the fisheries and aquaculture sector a key driver of its economic growth, contributing 20-25% to the agricultural GSDP

To achieve this goal, the State will track its progress across the following key parameters:

EXHIBIT 3.7

Key outcomes	Unit	Current	2029	2036	2047
Fisheries and aquaculture production	MMTPA	1.12	2.20	3.30	5.10
Freshwater fish production	MMTPA	0.73	1.35	1.95	3.10
Brackish water shrimp production	MMTPA	0.16	0.50	0.90	1.4
Marine fisheries production	MMTPA	0.22	0.35	0.45	0.60
Annual shrimp export	INR k cr.	4	10	25	35
Shrimp hatcheries	Number	28	48	78	128
Deep-sea fishing harbours	Number	-	1	2	2
Fishing harbours and landing centres	Number	28	42	73	107
Ports with seafood export capability	Number	-	1	2	3
Seafood parks	Number	1	2	5	10

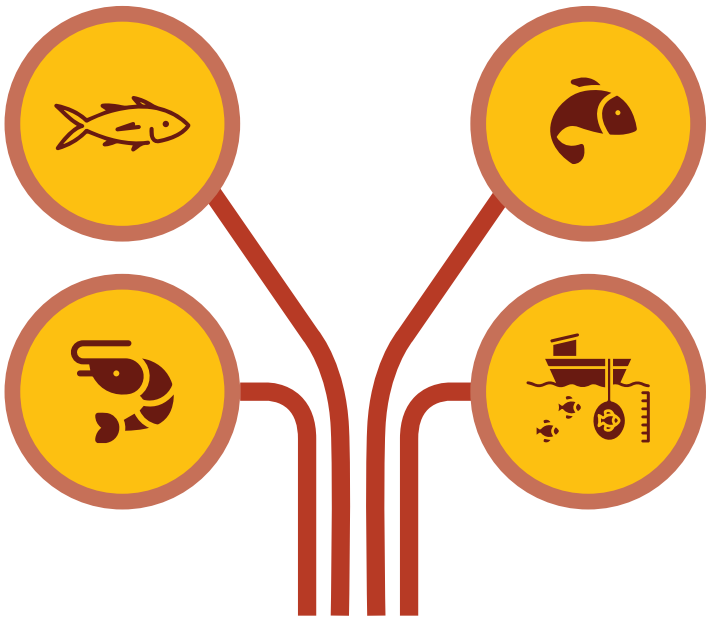
3. Key initiatives

To achieve its ambitious Vision, the State will take up four key interventions:

EXHIBIT 3.8

2
Scale up marine fisheries production to 0.6 MMTPA

3
Increase freshwater fish production to 3 MMTPA



1
Enhance shrimp production and export

4
Develop and modernise fishing harbours and landing centres

2.1 Enhance shrimp production and export

To unlock the full potential of Odisha's shrimp industry and position the State as a global leader in its production and export, a multi-faceted approach is essential.

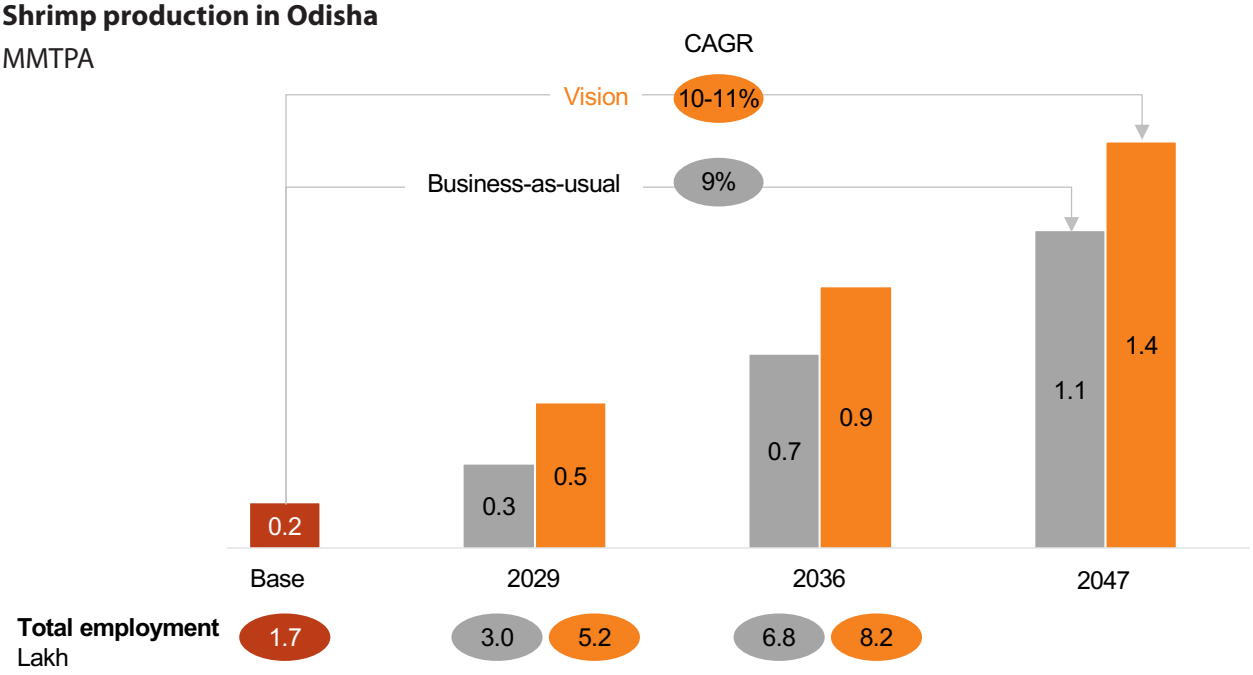
2.1.1. Launch the 'Odisha Shrimp Mission'

This initiative aims to significantly enhance the shrimp production of the State, expanding it to 1.4 MMTPA by 2047, employing more than eight lakh people. This growth will not only boost the local economy but also provide sustainable livelihoods for coastal communities, fostering socio-economic development and enhancing the overall well-being of the population.

EXHIBIT 3.9

Shrimp production in Odisha

MMTPA



2.1.2. Realising export value through strategic initiatives

Odisha stands on the brink of realising substantial economic gains through strategic interventions in the shrimp sector. By pursuing a comprehensive portfolio of initiatives, the State could achieve an additional export value of up to INR 25 Lakh crore by 2036, with the impact continuing till 2047:

EXHIBIT 3.10

Shrimp exports value in 2036

INR thousand crore

These initiatives will encompass improvements across the entire value chain, from hatchery management and feed quality to processing and market access, as shown below:

EXHIBIT 3.11

Value chain	Initiatives
Inputs	• **Ensure quality seed production** via development of new hatcheries near shrimp farming clusters • **Develop feed industry** by providing incentives such as capital subsidy and land • **Certify seed and feed hatcheries** to ensure quality standards, limit chemical usage, and manage disease; ensure compliance through regular audits
Farming area and productivity	• **Expand area** under shrimp farming up to 10 km from seashore through legislative reforms (Coastal Aquaculture Authority Act) and farmer awareness programmes • **Enhance productivity** by intensifying culture system via availability of farm inputs and extension of best management practices (e.g., Sanitary and phyto-sanitary measures) • **Scale up brackish water fish production** through aquaculture cluster development
Processing	• **Provide incentives and support** to increase the number of processing plants with a focus on export-oriented units • **Expand value addition capabilities** to include products such as natural bonded shrimp, ready-to-eat, ready-to-cook fish and other products • **Encourage 100% operationalisation of seafood park** at Deras and build nine more seafood parks
Exports	• **Strengthen the 'Aquaculture and shrimp export promotion cell'** (PASEC formed under Mukhyamantri Maschyajibi Kalyan Yojana) by establishing clear targets and regular monitoring by the PMU under Principal Secretary • **Promote high value categories** such as head-on shell-on butterfly shrimp for exports

[1] Assuming ~75% of 0.7 MMTPA production (largely frozen shrimp) in business-as-usual scenario, is exported
[2] Increase in production to ~0.9 MMTPA driven by increase in area
[3] Quality seed production to increase survival rates, quality feed production
[4] 15-20% of the export will be of high value categories such as head-on shell-on butterfly shrimp
[5] Higher realisations as 20-25% of exports are value added products such as natural bonded shrimp, ready-to-eat, ready-to-cook fish

By focusing on innovation, quality enhancement, and market diversification, Odisha can secure a prominent position in the global shrimp export market, driving significant economic growth and prosperity.

2.2 Scale up marine fisheries production to 0.6 MMTPA

The State will increase the production of marine fisheries by three-fold by 2047, through the following initiatives:

2.2.1. Develop shore-based fishing harbour at Gopalpur for berthing of deep-sea fishing vessels (DSFV); ensure harbour is equipped with essential infrastructure, including cold chain systems, processing plants, storage units, modern docking facilities, fuel stations, and maintenance workshops

2.2.2. Introduce DSFV and Tuna long liner fishing in the State: Given that the current design of longline fishing vehicles has multiple operational challenges, the vehicles are not suitable for Odisha's fishermen. The State will introduce suitable DSFV with key actions, including:

- Seek approval from the Indian Register of Shipping (IRS), Government of India, for necessary alterations in the longliner models
- Collaborate with the Central Institute of Fisheries Technology (CIFT), Cochin to modify these designs and conduct hands-on training for local fishermen
- Facilitate access to onboard equipment such as longline hooks, drag reels, and other necessary gear

2.2.3. Enrich coastal stock through artificial reefs deployment and sea-ranching

2.2.4. Upgrade and mechanise of fishing vessels: State will cover priority areas such as modernisation of the existing deep-sea fishing fleet, introduction of new or improved indigenous DSFV through fishing cooperatives or self-help groups (SHGs), etc.

2.2.5. Launch a 'Water leasing policy' for facilitating mariculture activities including cage culture

2.3 Increase freshwater fish production to 3 MMTPA

2.3.1. Focus on export-oriented fish varieties such as tilapia, seabass and mud crabs

2.3.2. Expand area under culture under private land: The State will identify champion districts for cluster-based commercial aquaculture (e.g. Raigada-Navrnagpur-Malkangir) and provide infrastructure such as high-quality roads, water, power, and common facilities such as cold-chain, pre-processing plants, etc. The State will also provide **single window clearance** to ease the set-up process for corporate investors

2.3.3. Introduce 'Inland aquaculture policy' with a provision of land bank

2.3.4. Intensify culture system, through initiatives such as addition of biofloc or RAS units

2.3.5. Ensure quality through seed certification and hatchery accreditation

2.3.6. Diversify species through introduction of multi species hatcheries

2.3.7. Introduce freshwater fish processing units in the State with value addition

2.4 Develop and modernise fishing harbours and landing centres

As the State prepares to scale up the fisheries sector, it will invest in critical infrastructure for anchorage, fish handling, trade, processing and export within and outside India by undertaking the following interventions:

2.4.1. Build **seven smart, blue-green, integrated harbours** by 2036 across Astarang, Chudamani, Gopalpur, Chandipur, Dhamara, Paradip and Bahabalpur

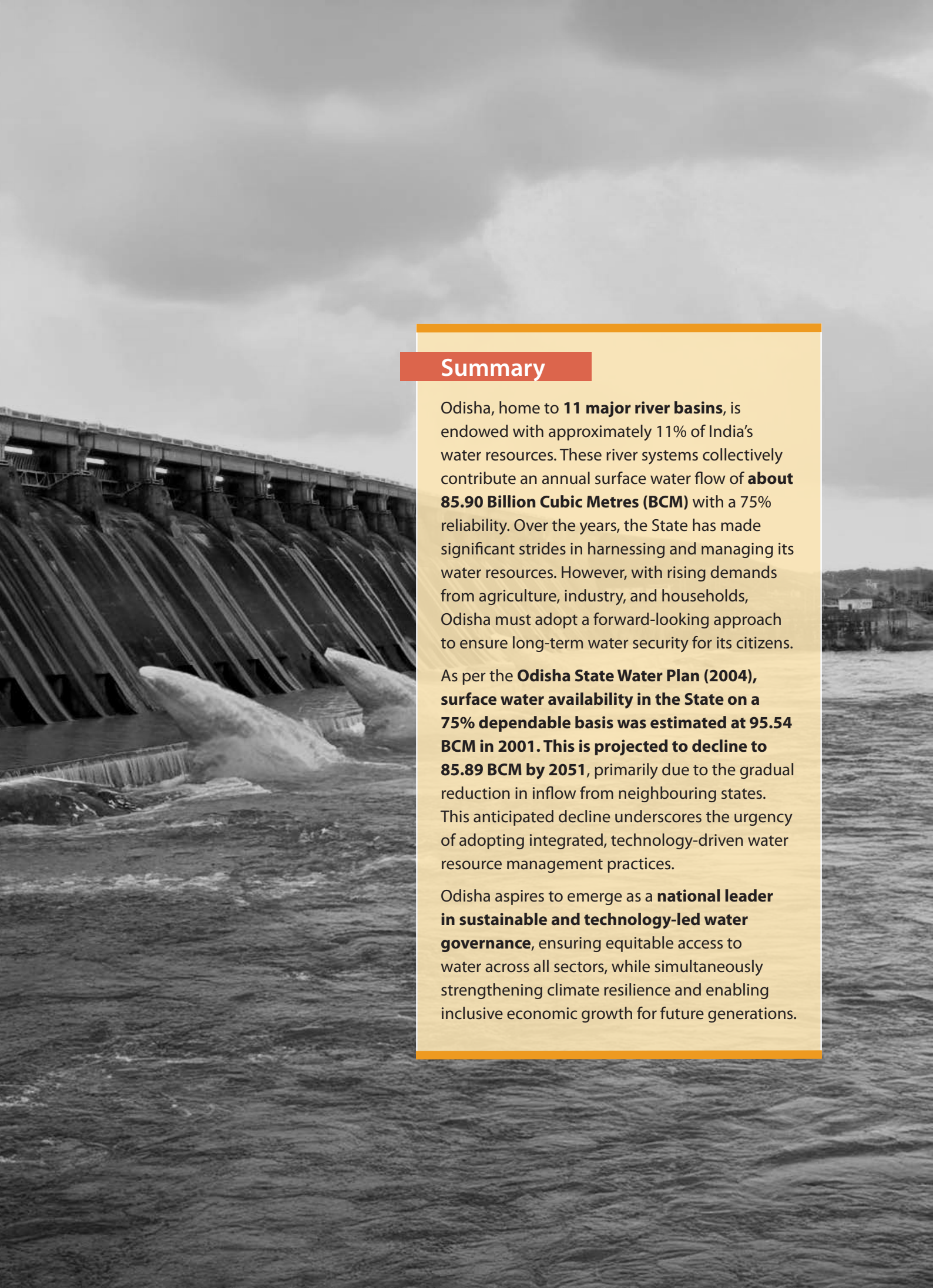
2.4.2. Upgrade existing landing centres with modern amenities

2.4.3. Engage with the Commerce and Transport Department and respective Port Authorities for **containerisation at Dhamra, Paradip and Gopalpur**

2.4.4. Enable **air cargo facilities** from the Bhubaneswar International Airport

CHAPTER 4

WATER SECURITY FOR A RESILIENT ODISHA



Summary

Odisha, home to **11 major river basins**, is endowed with approximately 11% of India's water resources. These river systems collectively contribute an annual surface water flow of **about 85.90 Billion Cubic Metres (BCM)** with a 75% reliability. Over the years, the State has made significant strides in harnessing and managing its water resources. However, with rising demands from agriculture, industry, and households, Odisha must adopt a forward-looking approach to ensure long-term water security for its citizens.

As per the **Odisha State Water Plan (2004), surface water availability in the State on a 75% dependable basis was estimated at 95.54 BCM in 2001. This is projected to decline to 85.89 BCM by 2051**, primarily due to the gradual reduction in inflow from neighbouring states. This anticipated decline underscores the urgency of adopting integrated, technology-driven water resource management practices.

Odisha aspires to emerge as a **national leader in sustainable and technology-led water governance**, ensuring equitable access to water across all sectors, while simultaneously strengthening climate resilience and enabling inclusive economic growth for future generations.

By 2047, the State envisions the following outcomes

- Ensure water security to meet rising demands from drinking water, irrigation, hydropower, green hydrogen, fisheries, tourism, floating solar, pumped storage projects, and inland waterways
- Achieve over 90% irrigation coverage across all feasible cultivable areas, unlocking the full potential of Odisha's agrarian economy
- Enhance cropping intensity from 160% to 220% by 2036 and 250% by 2047, through sustainable and efficient water utilisation
- Establish near 100% flood and drought resilience, supported by cyclone-resilient and adaptive water infrastructure
- Position Odisha as a front-runner in integrated, technology-driven, and climate-smart water resource management
- Rejuvenate key river systems to ensure both water quality and sustainable flow, securing long-term ecological health

Key initiatives to achieve the outcomes

- **Expand irrigation infrastructure**
  - Creating new water resources by completing all ongoing projects and initiating new ones
  - Optimising and modernising existing irrigation infrastructure including canal networks and all categories of irrigation projects
- **Strengthen water storage and conservation**
  - Construct additional water storage reservoirs, Instream Storage Structure (ISS) and check dams to ensure long-term water security
  - Minor irrigation projects / tanks to made to play a mojor role
  - Promote intralinking of rivers within the state
  - Promote watershed management to enhance groundwater recharge and minimise the impact of climate change on water availability
- **Promote water use efficiency**
  - Improve water efficiency in canal irrigation efficiency by 20%
  - Ensuring all irrigation potential created is utilised
  - Encourage widespread adoption of micro-irrigation techniques such as drip and sprinkler systems to optimise water use
- **Leverage digital and smart water management solutions**
  - Implement real-time monitoring and digital technologies for integrated water resource management
  - Deploy smart water metering to ensure accountability and efficient distribution of water resources
- **Enhance the governance and policy frameworks**
  - Strengthen institutional capacity by establishing the State Water Resources Regulatory Authority to regulate water allocation and pricing
  - Develop and enforce robust water governance policies to enhance coordination between sectors and stakeholders

Over the next 24 months, the State will

- **Formulate the 'Odisha Irrigation Master Plan'** to map district-wise irrigation potential, outline project implementation strategies and establish a financing roadmap
- **Draft and implement the 'Odisha State Water Policy 2025'** which will provide a structured framework for water budgeting, sectoral allocations and conservation measures
- **Complete major and medium irrigation projects**; start 8 new major & medium projects
- **Launch a programme for smart water metering and management** to improve accountability and reduce wastage
- **Establish the 'State Water Resources Regulatory Authority'** to oversee equitable and efficient water distribution

The State is committed to ensuring that water remains a driver of growth resilience and well-being for every citizen. Through the implementation of these strategic interventions Odisha will establish itself as a model State in water resource management securing a prosperous and sustainable future for generations to come. Together, the State will build an Odisha where water is a source of empowerment enabling sustainable agriculture thriving industries and resilient communities by 2047.

1. Context

Odisha is endowed with nearly **11% of India's total water resources** and is home to 11 major river basins. The total annual surface water flow in these river systems is estimated at **approximately 85.90 Billion Cubic Metres (BCM), based on 75% dependability**.

In addition to surface water, Odisha possesses 17.46 BCM of annual replenishable groundwater resources, which supports diverse needs across agriculture, industry, and domestic use.

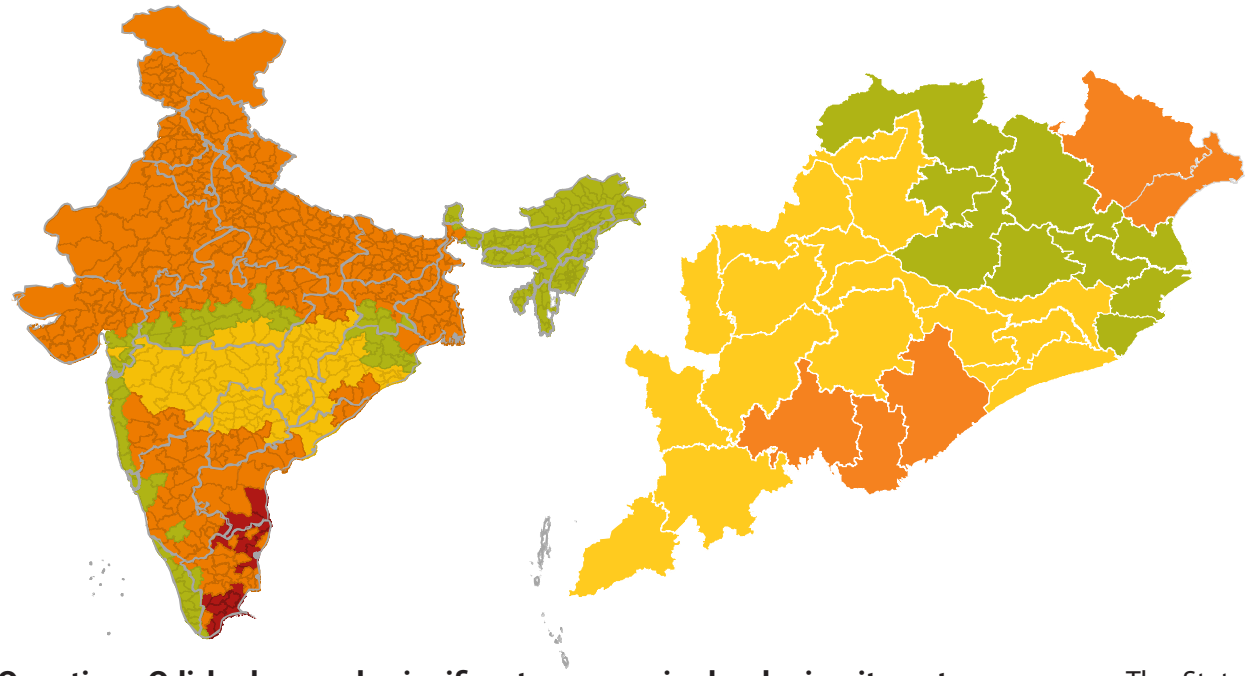
As per the Odisha State Water Plan (2004), the surface water availability in the State on a 75% dependable basis was assessed at 95.54 BCM in 2001. This is projected to decline to 85.89 BCM by 2051, primarily due to the gradual reduction in inflow from neighbouring states.

With a growing population and a corresponding increase in water demand across sectors, the per capita availability of water in the State is steadily decreasing, as illustrated below.

EXHIBIT 4.1

Absolute scarcity | Scarcity [500-1000 m^3] | Stress [1000-1700 m^3] | No stress [>1700 m^3]

India's per capita water availability **Odisha's per capita water availability**



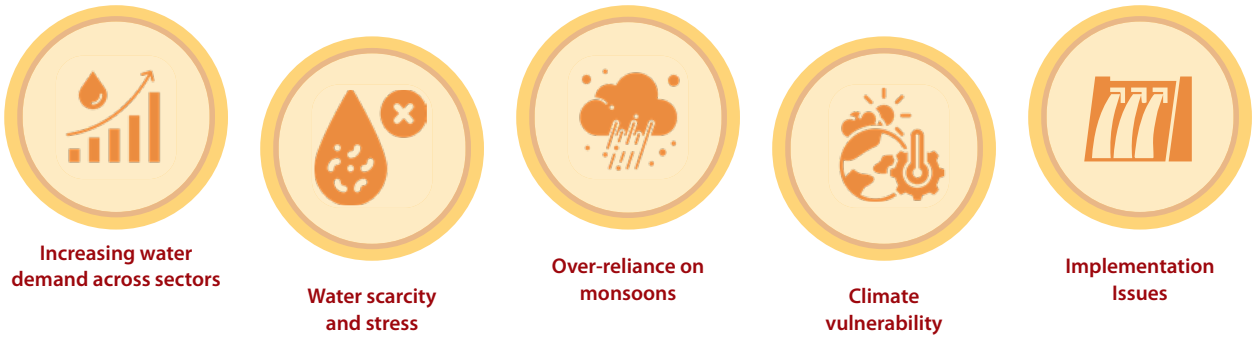
Over time, Odisha has made significant progress in developing its water resources. The State has constructed 222 large dams, barrages providing a gross storage capacity of 23.60 BCM and a live storage capacity of 18 BCM. Currently, the net irrigated area is 55% (34 lakh hectares) of the arable land, surpassing the national average of 51%. Moreover, Odisha is one of the five leading states in India for the number of water bodies, including ponds, tanks, lakes, reservoirs, and check dams, totalling 181,837[1]. Nearly half of these are managed by Governmental bodies such as Panchayats and Urban Local Bodies.

[1]MOJS, Water Body Census (2017-18)
Source: iced.niti.gov.in

1.1 Key challenges

Despite remarkable progress, several challenges remain:

EXHIBIT 4.2



Increasing water demand

Odisha currently faces a rapidly increasing annual water demand of approximately 33.61 Billion Cubic Meters (BCM). This demand, driven by economic expansion, population growth, and industrialisation, is projected to nearly double by 2047, reaching between 55 to 62 BCM. To address this, the State must invest in efficient water use infrastructure, including:

- Modern irrigation techniques
- Industrial water recycling
- Development of alternative water sources

Furthermore, integrated water resource management will play a pivotal role in balancing demand with sustainable supply to ensure economic growth does not deplete resources.

Water scarcity and stress

Despite the seemingly abundant water resources in Odisha, certain river basins—such as Rushikulya, Baitarani, and Bahauda—are projected to experience water-stressed conditions by 2047. This emerging concern stems from factors including rapid urbanisation, unregulated groundwater extraction, and the uneven spatial distribution of surface water bodies across the State.

To address these challenges and safeguard long-term water security, the Government of Odisha is committed to a set of prioritised actions, including:

- Watershed management and expansion of surface water reservoirs
- Rainwater harvesting at both rural and urban levels
- An equitable and region-specific approach to water distribution, ensuring reliable access for agriculture, industry, and households

Over-reliance on monsoons

A major portion of Odisha's agricultural output relies on monsoons, which are increasingly unpredictable due to climate change. Deviations from normal rainfall can lead to widespread droughts affecting agriculture, drinking water, and industry. Mitigating this risk calls for:

- Building climate-resilient irrigation systems
- Expanding canal networks and constructing check dams
- Promoting micro-irrigation
- Large-scale adoption of rainwater harvesting and groundwater recharge initiatives

Climate vulnerability

As a maritime State, Odisha ranks as India's third-most climate-vulnerable region, frequently experiencing extreme weather events. In the past 25 years, the State has endured 18 major floods, 11 droughts, and 12 cyclones, severely impacting water security by damaging infrastructure and contaminating sources. Addressing this requires a comprehensive climate adaptation strategy, including:

- Strengthening embankments and flood control measures
- Implementing early warning systems and enhancing storage capacity
- Encouraging climate-smart agriculture and sustainable planning to mitigate long-term climate impacts on water resources

To achieve this, some of the key technologies being used include:

Technology	Use cases	Case study example
Internet of Things (IoT) sensors and smart meters	- Real-time water usage tracking - Leak detection - Pressure monitoring	**Singapore's smart water grid**: Public Utilities Board (PUB) uses IoT sensors to detect leaks and optimise distribution
Artificial Intelligence (AI) and predictive analytics	- Forecasting water demand - Predicting pipe failures - Optimising water distribution	**California drought fonitoring**: AI-driven models predict water availability and prevent overuse
Satellite and remote sensing technologies	- Monitoring water bodies - Detecting illegal water extraction - Identifying pollution sources	**Gravity Recovery and Climate Experiment (GRACE) Mission by National Aeronautics and Space Administration**: Uses satellites to track groundwater depletion worldwide
Blockchain for water transactions	- Securing water rights and transactions - Preventing fraud in water trading	**Australia's water ledger**: Blockchain-based system for transparent water trading
Unmanned Aerial Vehicles (UAVs) and aerial imaging	- Mapping water bodies - Identifying contamination - Monitoring dam and reservoir conditions	**India's Jal Shakti Abhiyan**: UAVs used for groundwater mapping and watershed conservation
Smart irrigation systems	- Precision agriculture water management - Automated irrigation based on soil moisture	**Israel's Netafim drip Irrigation**: AI-controlled irrigation for water conservation
Desalination and water recycling Technologies	- Converting seawater into potable water - Recycling wastewater for industrial and agricultural use	**Saudi Arabia's NEOM project**: Large-scale desalination using solar power
Cybersecurity for water infrastructure	- Protecting Supervisory Control and Data Acquisition (SCADA) systems from cyber threats - Securing water supply from hacking risks	**Israel's National water security plan**: AI-driven cybersecurity forw water utilities

Sources: World Bank reports on IWRM and urban water security, UN-Water's Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) report, India Water Portal and government sources (e.g., NITI Aayog's Composite Water Management Index) and case studies on water management from the International Water Association (IWA)

1.2 Key trends

The following trends in water security can provide actionable insights for Odisha's water strategy:

Integrated Water Resource Management (IWRM): Governments globally are adopting holistic water management strategies balancing people, economy, and environment. Odisha aims to ensure long-term water sustainability by diversifying sources, enhancing rainwater harvesting, and improving wastewater recycling. For instance, Singapore's 'Four National Tap' strategy integrates imported water, local catchments, desalination, and reclaimed water for self-sufficiency

Digital transformation in water management: Technology like smart sensors, real-time monitoring, and AI is revolutionising water management. Odisha can leverage digital tools to predict demand, manage supply, and boost efficiency - taking learnings from successful examples such as Israel's AI-driven irrigation that cuts water wastage by 50%, and Karnataka's Decision Support System for Water Resources (DSSWR) that optimised reservoir management

Urban water security and reuse: Growing cities prioritise reliable water supply through recycling and reuse. For example, Bengaluru recycles 15-20% of wastewater for industrial and landscaping needs. Odisha's urban centres can adopt similar practices with decentralised sewage treatment plants and industrial use of treated waste-water

Groundwater conservation and recharge: Depleting groundwater necessitates sustainable management. Gujarat's Sardar Patel Programme, for instance, improved groundwater via check dams, while Australia's aquifer recharge stores excess rainwater for dry periods. Odisha will focus on community-driven check dams, large-scale rainwater harvesting, and recharge structures in water-stressed areas

Climate-resilient water infrastructure: Climate change demands resilient infrastructure. The Netherlands' USD 2 billion 'Room for the River' programme enhanced flood resilience while protecting ecosystems. Learning from this, Odisha, prone to floods and droughts, will build climate-adaptive systems like embankments, drainage, and flood-resistant structures

Financing mechanisms for water security: Sustained investments are key to water security. Odisha will explore public-private partnerships (PPPs) and green bonds, inspired by India's INR 20,000 crore Namami Gange project, to fund irrigation, desalination, and smart water management initiatives

2. Vision and outcomes

Odisha is committed to leading the nation in sustainable water resource management, ensuring equitable access to water for future generations while enhancing food security and economic growth. As part of this Vision, the State will adopt a technology-integrated approach to water management, ensuring efficient utilisation, conservation, and resilience against climate uncertainties. By leveraging advanced techniques and best practices, Odisha aspires to be at the forefront of sustainable water governance, fostering economic prosperity and environmental stewardship.

EXHIBIT 4.3

VISION 2047

Odisha aspires to become a national leader in sustainable and technology-driven water resource management ensuring equitable access to water for all sectors while enhancing climate resilience and economic growth

The key objectives are to achieve water security accross all sector including 90% irrigation coverge of relevant cultivable areas, ensuring that farmers have reliable access to water for agricultural productivity. This will strengthen food security, boost rural livelihoods, and reinforce Odisha's agricultural sector as a cornerstone of the State's economy. The State will implement comprehensive irrigation expansion projects, adopt micro-irrigation techniques, and optimise water-use efficiency through smart agricultural practices (covered in detail in Chapter 1: ('Inclusive agriculture').

Additionally, **Odisha will prioritise climate and disaster resilience**, aiming for near 100% preparedness in mitigating climate-induced water challenges. With a history of extreme weather events, including floods and droughts, the State will invest in robust infrastructure, early warning systems, and sustainable watershed management.

By 2047, Odisha envisions a future where water security is not just a policy goal but a reality for every citizen. Through an integrated, forward-looking approach, the State will ensure sustainable and equitable water access, fostering economic growth, climate resilience, and enhanced quality of life for all.

2.1 Key outcomes

The State will track the following outcomes to achieve its Vision:

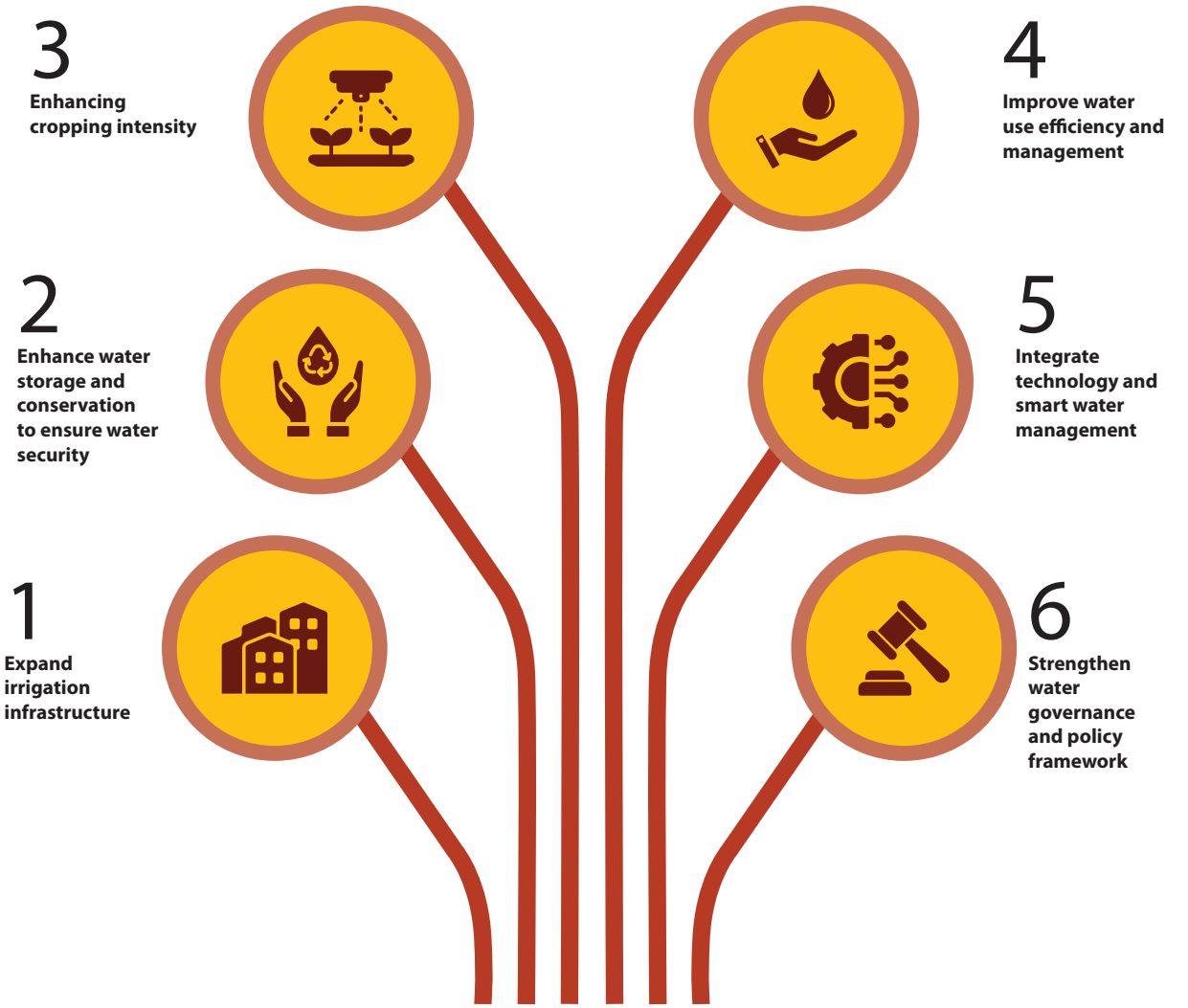
Key outcomes	Unit	Current	2029	2036	2047
Irrigation coverage (for relevant areas)	%	55%	65%	80%	90%
Storage capacity (over current levels)	BCM	23.60	24.60	25.60	27.60
Micro-irrigation coverage	%	2%	5%	10%	15%
Canal water-use efficiency	%	<40%	45%	50%	60%
Ground water storage (over current levels)	BCM	17.46	17.71	18.01	18.46

These targeted outcomes reflect Odisha's commitment to implementing a data-driven and outcome-focused approach to water resource management. By continuously monitoring progress and adopting innovative solutions, the State will ensure a water-secure future, fostering economic growth, climate resilience, and sustainable livelihoods for all citizens.

3. Key initiatives

The State will undertake the following key initiatives:

EXHIBIT 4.4



3.1 Expand irrigation infrastructure

The State is steadfast in its commitment to ensuring sustainable and equitable water resource management, securing the future of its people, and fostering economic and environmental resilience. By implementing forward-thinking policies and large-scale infrastructure projects, the State is on a transformative journey towards achieving 90% irrigation coverage. The following comprehensive irrigation and water management initiatives will not only safeguard livelihoods but also catalyse economic prosperity and food security across the State:

3.1.1 Complete 19 ongoing Major and Medium Irrigation Projects (MMIP) covering 3.35 lakh hectares. This involves finalising construction, optimising water distribution, and ensuring infrastructure is operational

3.1.2 Launch 40 new Large Irrigation Projects to add another 4.50 lakh hectares. This includes planning, securing funding, environmental assessments, and community engagement

3.1.3 Complete 170 Mega Lift Irrigation Projects to cover 2.61 lakh hectares by installing necessary pipelines and pumps, ensuring efficient water lifts from lower elevation water sources to farmland

3.1.4 Launch 100 more Mega lift Irrigation Projects to cover 1.00 lakh ha covering uplnd areas

3.1.5 Complete ongoing Minor Irrigation Projects to cover 0.84 lakh hectares by fast-tracking pending approvals,

3.1.6 Initiating 200 more new MIPs (100 by 2036 + 100 by 2047) to cover arround 1.0 lakh hectares

3.1.7 Install 1.5 lakh deep bore wells and 15,000 community Lift Irrigation Points (LIPs) to support an additional 10.5 lakh hectares, leveraging geospatial mapping for optimal

3.1.8 Geo-tagging all irrigation projects using the ODIIS (Odisha Irrigation Improvement System (ODIIS) to enhance transparency, data accuracy, and eliminate overlaps

3.1.9 Ensure conjunctive use of surface and groundwater in approximately 8% (5 lakh hectares) of cultivable land through both surface flow and groundwater irrigation systems, utilising block-level planning and incentives to optimise usage during the Rabi season

3.2 Enhance water storage and conservation

Develop additional storage facilities and manage long-term water security against climate change impacts:

3.2.1 Complete ongoing projects: 705 Mcum from five dams, 122 Mcum from 28 ISSs

3.2.2 Initiate new dam projects targeting 4,000 Mcum, incorporating community input and modern engineering techniques to harness potential of intra basin linking projects with in the state

3.2.3 Collaborate with co-basin state for better, water usage, collaborating closely with relevant stakeholders to ensure equitable distribution

3.2.4 Integrate strategies for the **development and maintenance of disaster-resilient embankments** to protect against floods and saline ingress

3.2.5 Emphasise comprehensive dredging and sediment management in reservoirs, and development of systems for integrated reservoir operations

3.2.6 Mandate rainwater harvesting structures in all new construction projects in major areas and incentivise retrofitting of existing buildings

3.2.7 Construct small-scale check dams and recharge wells to restore groundwater levels in rural and semi-arid areas

3.3 Promote micro-irrigation

Covered in detail under chapter 'Revitalising agriculture

3.4 Improve water use efficiency

Achieve 60% water use efficiency in canal irrigation:

3.4.1 Intensify canal lining and canal automation systems in upcoming and ongoing projects, ensuring durability and long-term savings

3.4.2 Promote Under Ground Pipeline (UGPL) distribution in areas with high water table fluctuations

3.4.3 Execute groundwater recharge initiatives targeting a 1 BCM increase, focusing on strategic areas with high recharge potential

3.4.4 Continue rooftop rainwater harvesting systems, enhancing community cooperation and conservation practices

3.4.5 Enhance strategies for flood proofing, including the development of early warning systems, flood forecasting models, and town / city protection works

- Enhance resilience of saline embankments and shorelines, using phased support from the Mukshyamantri Disaster Resilient Embankment Project with National Institute of Ocean Technology (NIOT) assistance
- Strengthening flood embankments at key locations for safe passage of flood waters
- Implement systems for integrated reservoir management, focusing on city protection from flooding and prioritising vulnerable areas

3.4.6 Implement waterlogging solutions using GIS mapping and IoT technologies for comprehensive drainage channel management and robotic cleaning to improve flow

3.4.7 Launch a State-wide **benchmarking system for water use efficiency** in agriculture, promoting crop diversification and water-saving practices

3.4.8 **Promote water-efficient appliances and irrigation equipment** through certification and financial incentives to efficient stakeholder

3.5 Integrate technology and smart water management

Employ digital and technological solutions for comprehensive water resource management.

3.5.1 **Integrate AI, IoT, and GIS**[1] for optimised water footprint management, leveraging real-time data analytics

3.5.2 **Operationalise the GOWATER platform** for integrated flood forecasting, reservoir monitoring, and water management

3.5.3 **Establish a State Water Informatics Centre (SWIC)**, linked to the National Water Informatics Centre (NWIC), for continuous data exchange and innovation tracking

3.5.4 **Deploy advanced remote sensing systems** to support Government schemes, ensuring precision in area mapping and crop management

3.5.5 **Develop databases and GIS mapping** for drainage channels and waterlogging to improve monitoring and management

3.5.6 **Utilise technology for flood risk assessment** and mapping for proactive disaster management planning

3.5.7 Operationalise state-of-the-art systems for **dynamic flood forecasting**

[1] AI: artificial intelligence, IoT: Internet of Things, GIS: Geographic information system

3.6 Strengthen water governance and policy framework

3.6.1 Formulate guidelines for the **safe reuse of treated wastewater** to enhance recycling; encourage reuse of treated wastewater for industrial, landscaping, and agricultural applications in urban and industrial clusters

3.6.2 Engage in activities like afforestation, improving rural sanitation, and enhancing sewage infrastructure for river rejuvenation

3.6.3 Revise State Water Policy and prepare a comprehensive 'Jal Sangrakhyana Niti' to guide sustainable water practices

3.6.4 Establish a Water Resources Regulatory Authority to oversee resource allocation and pricing

3.6.5 Encourage public participation across

3.6.6 Water governance through awareness programmes and participatory decision-making processes

3.6.7 Maintaining river health, including combating industrial pollution and promoting biodiversity conservation

3.6.8 Implement R&D initiatives for innovative water management solutions and integrate best practices from other regions; Strengthen the Water and Land Management Institute (WALMI) to focus on new technologies, innovation and best practices by establishing a Centre of Excellence (CoE)

3.6.9 Develop guidelines for the safe re-use of treated wastewater to enhance water recycling

3.6.10 Incorporate frameworks for valuing water to stimulate economic growth through activities like tourism development, solar projects, and pisciculture in State water bodies

3.6.11 Engage in activities such as afforestation, improving rural sanitation, and enhancing sewage infrastructure to rejuvenate river health

3.6.12 Partner with neighbouring States for **integrated river basin planning and water-sharing agreements** to prevent conflicts

CHAPTER 5

RURAL RENAISSANCE: IMPROVING EASE OF LIVING AND CREATING NON-FARM EMPLOYMENT

Summary

Enhancing the ease of living in rural and semi-urban areas through improvements in the access to basic amenities and ensured connectivity is pivotal for balanced regional development of Odisha. As per the 2011 census, nearly 80% of the State's population resides in rural areas, significantly higher than the national average of around 65%. Additionally, just five districts (out of 30) – Baleshwar, Cuttack, Ganjam, Jajpur, and Mayurbhanj – house one-third of Odisha's rural population, highlighting the criticality of focused interventions.

With 6,794 Gram Panchayats overseeing more than 50,000 villages, the scale of impact from such developmental initiatives can be substantial, ensuring that the benefits of growth reach the most remote corners of the State.

The State envisions to empower its rural areas by providing urban-level amenities, diverse livelihood opportunities and self-governance mechanisms.

By 2047, the State envisions the following outcomes

- Achieve zero poverty status in Gram Panchayats
- Ensure 100% saturation of basic amenities, including energy and water supply, in semi-urban areas by 2036 and rural areas by 2047
- Enable 100% connectivity through roads and bridges, with lane-width goals met by 2047
- Double non-farm jobs in rural areas, ensuring near zero distress migration caused by lack of job opportunities

Key inititives to achieve the outcomes

Launch a '**Model village mission**', saturating all 50k+ villages in Odisha with access to basic amenities and community spaces

Plan and implement a **rural non-farm employment enhancement programme** to double non-farm employment

Ensure **100% saturation of rural road connectivity** following the State road sector policy for formation, width and basic quality standards

Implement **capacity programmes for Gram Panchayats** and other community-based organisations (CBO) including management training and improved administrative capacity, while ensuring better representation of marginalised communities

Over the next 24 months, the State will

- **Launch the 'Model Village Mission'** as a priority State programme; constitute a task force to complete baselining of current village amenities and build a roadmap to achieve 100% saturation of basic amenities and community spaces in around 7,000 villages
- Undertake a detailed study to **prioritise non-farm industries** that can scale up (e.g., handicraft, and high-skill construction, etc.) or establish a new base (e.g., knowledge services) in rural Odisha
- **Converge all the related schemes** at national and State level to ensure single ownership of implementation and beneficiary management through digital platforms
- Initiate **preparation of Gram Panchayat Development Plan (GPDP)**, aligning them with the national and State goals with clear, actionable five-year roadmaps
- Introduce special incentives in the 'Industrial policy 2022' for corporate sector players investing in rural areas

- **Mandate the 'State road sector policy'** with provision for formation width and work with the Indian Roads Congress (IRC) to update the quality requirements for roads
- Constitute a task force to achieve **100% saturation of road connectivity** to all the villages by 2047
- Prepare a roadmap to **scale capabilities for Gram Panchayat** offices; launch a fast-track recruitment programme in prioritised Gram Panchayats to ensure near 100% staffing of the authorised posts

1. Context

Odisha's rural economy spans a vast network of **approximately 6,794 Gram Panchayats (GP) overseeing more than 50,000 villages, supported by 314 Block Panchayats (BP)** and **30 Zila Parishads (ZP)**. Despite significant progress achieved in providing power supply and drinking water to villages (Exhibit 5.1), significant gaps remain in access to basic amenities, connectivity and infrastructure. For example, around 8,000 habitations are yet to be connected, and more than 4,500 villages still lack mobile network coverage - the highest in the country. Bridging these gaps is critical for fostering equitable growth.

The State is undertaking several ambitious infrastructure programmes to address these challenges. Under the Pradhan Mantri Gram Sadak Yojana (PMGSY) III, 9,185 km of rural roads were targeted for completion by March 2025, out of which 8,415 km have been constructed by FY 2024-25. Balance 770 km of roads have been targeted for completion by March 2026. Since FY12, the Setu Yojana has delivered 1,628 bridges (as of March 2025), while 954 bridges are in progress under the Setu Bandhan Yojana.

Additionally, 118 bridge-cum-weir projects were initiated between FY22 and FY24, of which 78 are already completed.

Odisha has also made strides in rural building infrastructure, with 9,567 Government buildings constructed since FY01 and 2,691 thousand sq m of residential and non-residential spaces established. Under the District Mineral Fund (DMF), 1,198 rural projects have been completed since FY17, highlighting the State's focus on sustainable development.

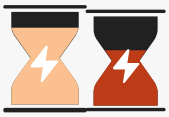
Currently, 97% of rural households in Odisha have access to toilets-significantly higher than the national average of 81%. However, water supply in most rural areas remains limited to just 4-6 hours per day. To ensure equitable living standards, targeted efforts are needed to bridge the urban-rural divide across the State.

EXHIBIT 5.1

Parameters where Odisha is performing better than or at par with national average

Power supply
(No. of hours in a day)

23.4 Odisha — 20.5 India



Connectivity through pucca roads[1]
(% villages)

85% Odisha — 73% India

Multidimensional poverty for rural areas
(Index)

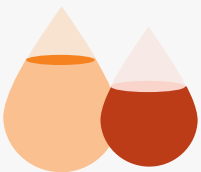
0.15 Odisha — 0.19 India

Internet subscribers
(per 100 population)

39.5 Odisha — 39.3 India

Rural drinking water
(Liter per capita per day)

70 Odisha — 55 India



(No. of taps per household)

1 Odisha — 1 India

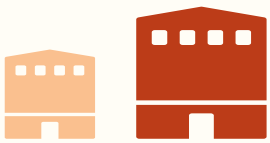
Parameters where Odisha has room for improvement vs. national average

Population in rural (2011 Census)
(%)

83% Odisha — 69% India

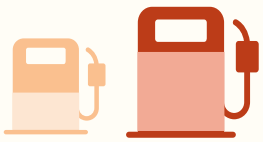
Pucca houses
(% households)

79% Odisha — 85% India



Usage of clean fuel as primary source of energy
(% households)

37% Odisha — 68% India



Car ownership
(% households)

2.7% (for State) — 4% India

Tap water access
(% rural households)

76% Odisha — 79% India

Bituminous (BT) and CC roads

1.1 Key challenges

Rural Odisha faces several infrastructure and social challenges that hinder its growth and development. Addressing these issues is critical to building resilient systems, improving livelihoods, and driving sustainable progress:

EXHIBIT 5.2

- **Outdated and disaster-prone infrastructure**: Odisha's rural infrastructure struggles to meet modern demands. For instance, outdated transmission grids with 5 and 10 MVA stations need upgrades, as seen in other States, to support growing energy needs. Additionally, infrastructure often overlooks disaster resiliency, leaving the State vulnerable to cyclones and floods
- **Poor infrastructure project execution**: Despite the success of initiatives like the Setu Bandhan Scheme, unclear regulations like the ones by Inland Waterways Authority of India (IWAI) make bridge construction cumbersome. Projects are further delayed by limited manpower, and other on-ground challenges
- **Making provision for present traffic growth**: IRC's[1] assumption of 6% vehicle growth is outdated and needs to align with the present increase in traffic. That is, minimum 10% growth needs to be assumed for road pavement design
- **Weak grassroot Government institutions**: Gram panchayats are under-staffed, with only three personnel per unit, against a requirement of at least 6–7 for efficient operations. This shortage highlights the need to recruit 35,000 skilled workers trained in technology, finance, and planning into grassroot institutions
- **Social and economic distress**: Rural Odisha faces high distress migration due to limited employment opportunities and security. Social issue like low secondary school retention, exacerbate these challenges. For instance, the gross enrolment ratio for higher education is only 22%, far below the national target of 50%

[1] Indian Road Congress

1.2 Key trends

Key global and national trends in rural transformation such as economic diversification, community empowerment, and sustainable development, offer Odisha practical pathways to enhance rural livelihoods and quality of life:

EXHIBIT 5.3

Smart villages and digitisation: Mobile-based services and high-speed internet are transforming access to banking, healthcare, and education in rural areas. For example, Kenya's M-Pesa revolutionised financial inclusion for more than five crore users, while BharatNet connected almost three lakh villages in India to enable e-governance and telemedicine delivery

Economic diversification: Vietnam's rural tourism initiatives contributed USD 17 bn to its economy in 2022, while Thailand has fostered rural crafts and agro-tourism. Similarly, programmes like 'Skill India' and 'Startup India' have boosted rural entrepreneurship, with 9% of MSMEs located in rural areas, generating lakhs of non-agricultural jobs

Women empowerment for rural growth: Targeted initiatives like skill development and financial inclusion are enhancing women's participation in economic activities and improving rural living standards. For instance, Bangladesh's 'Grameen bank' has empowered 90 lakh households, while the SHG programmes in India have engaged eight crore women in entrepreneurship

Reverse migration: Economic shifts and the pandemic have encouraged reverse migration, increasing the demand for local employment opportunities. For example, during COVID-19, Odisha saw 7% of India's reverse migration, highlighting the potential for developing non-farm jobs to stabilise rural incomes

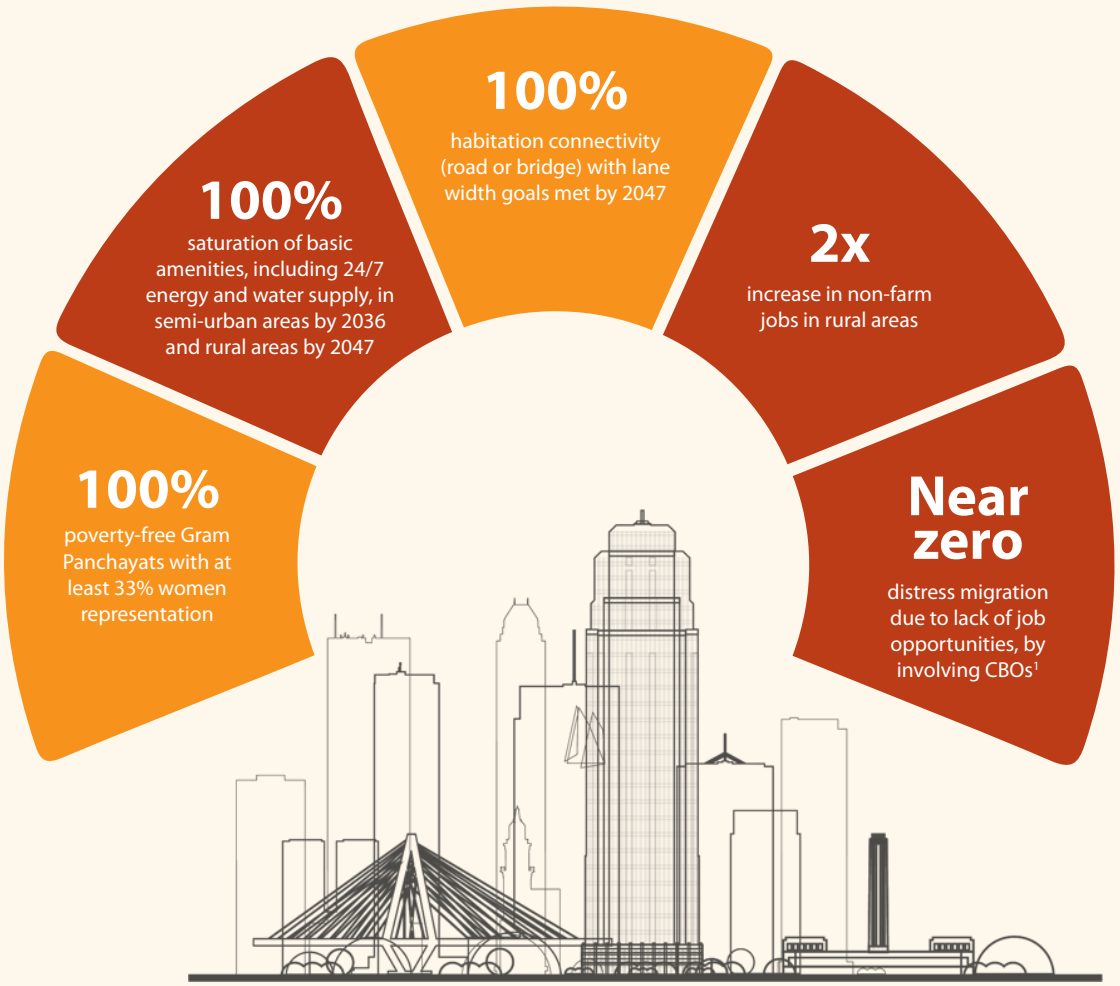
2. Vision and outcomes

In alignment with national goals of inclusive growth and sustainable development, the transformation of rural Odisha plays a crucial role in achieving broader socio-economic objectives.

EXHIBIT 5.4

VISION 2047

Empowering Odisha's rural economy to achieve urban-level prosperity and ensure self-governing communities with modern infrastructure and diverse livelihood opportunities



[1] Community-based organisations

To achieve this, the State will track the following key outcomes:

EXHIBIT 5.5

Category	Key outcomes	Unit	Current	2029	2036	2047
Infrastructure	Power supply	No. of hours per day	23.4	23.8	24	24
	Water supply	No. of hours per day	4	6	12	24
	Access to piped, drinking water connections	% households	58%	100%	100%	100%
	People living in pucca houses[1]	% households	79%	100%	100%	100%
	Access to individual household latrine (IHHL)	% households	97%	100%	100%	100%
	Connectivity by pucca roads[2]	% villages	85%	87%	90%	100%
	Usage of clean fuel as primary source of energy[4]	% households	37%	>75%	>85%	>99%
Economic opportunities and standard of living	New non-farm jobs	Cumulative, in lakhs	-	10	25	55
	Multidimensional poverty in rural areas[6]	Index	0.15	<0.12	<0.1	<0.06
	Access to bank facility within a 5 km range	% villages	50%	100%	100%	100%
	Car ownership in rural areas[7]	% households	2.7% (for overall State)	8%	20%	50%
	Rural tele-density[9]	%	61%	90%	>100%	>120%
	Internet subscription in rural areas[8]	%	39.5	50%	100%	100%
	Average per capita drinking water in rural areas	Litres per day	70	80	100	>120
	Average number of drinking water taps per household	#	1	>1	2	3
	Rural households with tap water	%	76%	100%	100%	100%

[1] Punjab (96%)
[2] Punjab (98%)
[3] Rajasthan (92%)
[4] Telangana (96%), Karnataka (87%)
[5] Kerala (99%), Telangana (73%)
[6] Kerala (0.3%), Tamil Nadu (0.1%)
[7] Punjab (26%)
[8] Kerala (58%), Punjab (49%)
[9] Odisha urban (139%), India total (85%), India urban (134%)

3. Key initiatives

To achieve the outlined Vision and outcomes, the State will undertake four dedicated initiatives:

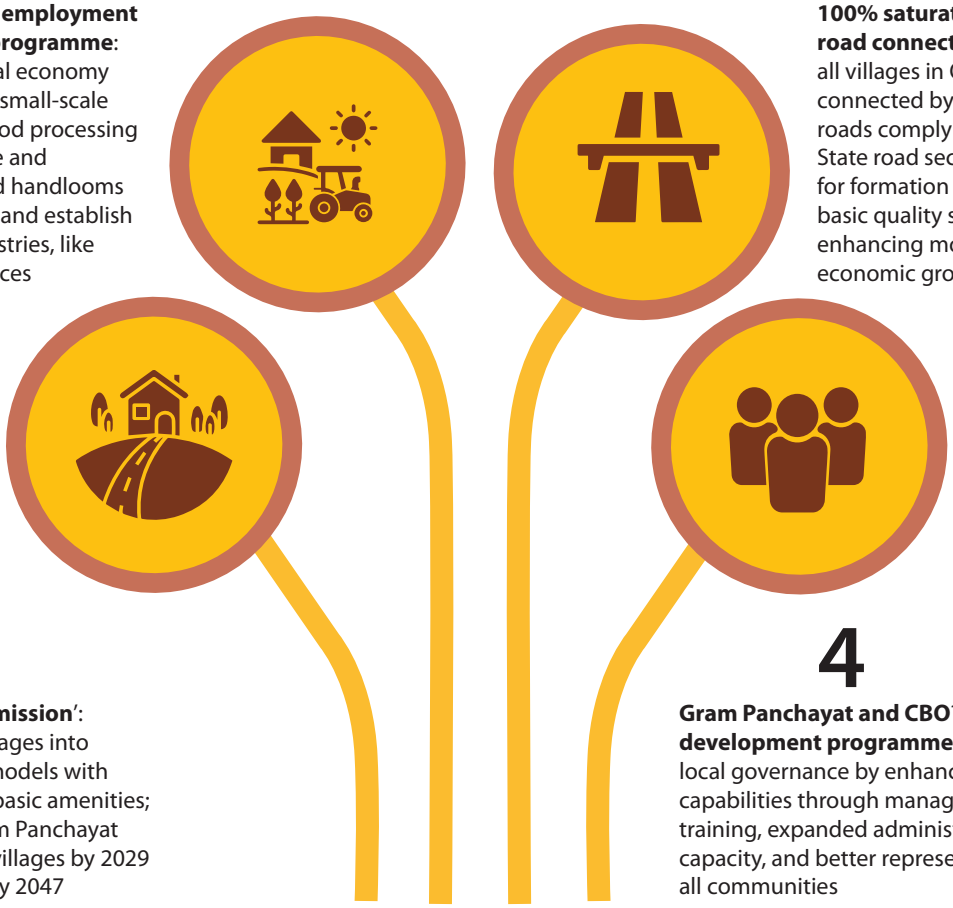
EXHIBIT 5.6

2

Rural non-farm employment enhancement programme: Diversify the rural economy to scale existing small-scale industries like food processing (both agriculture and aquaculture) and handlooms and handicrafts, and establish tech-based industries, like knowledge services

3

100% saturation of rural road connectivity: Ensure all villages in Odisha are connected by all-weather roads complying with the State road sector policy for formation width and basic quality standards, enhancing mobility and economic growth



1

'Model village mission': Transform all villages into self-sustaining models with 100% access to basic amenities; covering all Gram Panchayat headquartered villages by 2029 and saturating by 2047

4

Gram Panchayat and CBO[1] capacity development programme: Strengthen local governance by enhancing its capabilities through management training, expanded administrative capacity, and better representation of all communities

[1] Community-based organisation

3.1 Model village mission

By 2047, Odisha aims to transform all its 50k+ villages into 'Model villages' that provide all basic amenities and infrastructure for a improved standard of life. Illustrative features of a model village is shown below:

EXHIBIT 5.7

Infrastructure

Housing
Pucca houses for all households under schemes like PMAY[1]

Road connectivity
All-weather roads connecting villages to Gram Panchayat headquarters

Water supply
Piped water supply ensuring access to safe drinking water

Electricity
24-hour power supply with a focus on rural electrification programmes

Sanitation
100% coverage of functional toilets and solid waste management

Public spaces
Parks, community halls, playgrounds, libraries, and markets, etc.; access to cremation ground

Waste management
Village-level waste segregation, collection, and recycling systems

Clean cooking fuels
Universal LPG[2] connections under schemes like PMUY[3]

Telecom and internet
24/7 access to all rural households

Veterinary sub-centres
Centres to cater to livestock health and boost income from animal husbandry

Access to services

Healthcare
Fully functional PHCs[4] or sub-centres with telemedicine support

Education
Schools with adequate infrastructure, mid-day meals, and basic digital facilities

Livelihood opportunities
Adequate non-farm opportunities and support for local entrepreneurs and SHG-led enterprises

Skill hubs
Centres for digital literacy and vocational training linked to job markets

Banking and financial inclusion
Access to ATM[5] and banking services in every village

Nutrition
Access to fortified foods; establishment of Anganwadi centres for addressing malnutrition

Social security
Coverage under schemes like old-age pensions, health insurance, and widow pensions

Governance
Strong Gram Panchayat and CBO[6] capacity for effective service delivery

1. Pradhan Mantri Awas Yojana; 2. Liquefied petroleum gas; 3. Pradhan Mantri Ujjwala Yojana; 4. Primary healthcare centres
5. Automated teller machine; 6. Community-based organisation

To achieve this, the State will **launch a 'Model Village Mission'** by undertaking the following activities:

3.1.1 Define and design 'Model village': Create a detailed village development master plan focusing on core infrastructure, basic amenities, and economic opportunities to define 'Model village'

3.1.2 Baseline assessment and roadmap

- Conduct village-wide surveys to map current gaps in infrastructure, utilities, and socio-economic conditions
- Create a prioritisation of villages based on need and potential impact, using socio-economic metrics and vulnerability indices:
  - Horizon one (till 2029): 7,000 villages (~15% achievement)
  - Horizon two (till 2036): 20,000 villages (~40% achievement)
  - Horizon three (till 2047): more than 50,000 villages (100% achievement)

3.1.3 Create financing framework and ensure budget allocation

- Estimate the investment required in each phase of the programme and compare with allocated State budget to identify additional funding requirements
- Design financing and budget allocation plan leveraging multiple sources to ensure financial sustainability, like:
  - Central Government grants (e.g., Pradhan Mantri Gram Sadak Yojana, Jal Jeevan Mission)
  - Mandi board rural development fund for agriculture-centric villages
  - Flat-rate levies on landowners, shopkeepers, and salaried residents to create localised funding pools
  - Donations from non-resident Indians (NRI) for village-specific projects
  - Mineral development fund
  - Loans from multilateral development banks like the Asian Development Bank (ADB) and World Bank for larger interventions
  - NGO and corporate funds
  - Nascent innovative financing mechanisms such as asset monetisation

3.1.4 Design collaborative implementation model

Since implementation requires multiple departments to seamlessly collaborate, the programme will be implemented using a 'Whole-of-Government' approach. Dedicated task forces will be formed of all concerned departments across levels for the mission, with unified Vision and combined targets. Further, the Mission will leverage actors outside the Government for expertise and seamless implementation, such as:

- NGOs to provide technical expertise, resources, and on-ground implementation support
- Academic institutions for technical support and impact assessment
- Local community members trained as 'Model village champions' to ensure local capability development for seamless, on-ground implementation

3.2 Rural non-farm employment enhancement

With significant portion of the rural population still engaged in agriculture, the State will scale non-farm opportunities and diversify the rural economy further across two key buckets:

3.2.1 Scale up local, small-scale enterprises

- Create community-based micro skilling and entrepreneurship hubs in each Gram Panchayat providing:
  - Skill training for trades such as carpentry, tailoring, handicrafts, and food processing
  - End-to-end entrepreneurial support through village-level financial literacy workshops, free access to digital tools like accounting or inventory management software, mentorship programmes and simplified credit access
- Enable demand aggregation by mandating local sourcing for Government offices and partnering with other State Governments and large industrial players
- Facilitate access to broader markets through assistance in e-commerce platforms and local trade fairs

3.2.2 Establish new, high-skill industries

Following the 'Rule of five I's – Image, Infrastructure, Investment, Innovation and Inclusivity', Odisha will market itself as a **business-friendly State** and set up economic zones with encumbrance-free land, long term loans at minimal interest rates and subsidies in taxes and commercial bills. To establish new industries in rural areas, the State will:

- Undertake a detailed feasibility study and engage with the corporate sector to identify key industries that can expand into villages, e.g., knowledge services
- Identify and prioritise villages for such industries based on key parameters like availability of workforce, land, and utilities, etc.; develop at least 10 villages in the pilot phase with necessary infrastructure like high-speed internet, reliable electricity, and office spaces
- Offer tax breaks, subsidies, and other incentives to corporate players to set up operations in rural areas and encourage them to hire locally trained individuals
- Partner with industry experts and educational institutions to develop curriculum that matches the priority industry needs; establish vocational training centres in priority villages to impart high-skill training

3.3 100% saturation of rural road connectivity

Achieving comprehensive rural road connectivity in Odisha will transform rural economy and foster integration with urban centres, while enhancing livelihoods. **Odisha targets to cover 100% of its villages by 2047**. The following interventions are crucial to realising this ambitious goal:

3.3.1 Integration in district masterplans

- Incorporate rural road connectivity into district-level masterplans, with specific emphasis on linking transport infrastructure such as bus depots, railheads, and transit hubs
- Utilise Geographic Information System (GIS) mapping to identify unconnected villages and prioritise high-impact projects – like, connectivity to agro-processing units, industrial clusters, and rural markets
- Enable real-time project monitoring through digital dashboards to ensure timely completion and accountability

3.3.2 Financing framework

- Leverage central funding schemes like Pradhan Mantri Gram Sadak Yojana (PMGSY) and multi-lateral financing avenues, to finance extensive road construction projects
- Encourage corporate collaboration, especially in industrial districts, to share the financial burden and bring in expertise; incentivise corporate investments via tax breaks, subsidies, and streamlined regulatory processes
- Explore innovative financing options such as infrastructure bonds, community-based funding models, and crowdfunding to supplement traditional funding sources

3.3.3 Road quality and maintenance standards

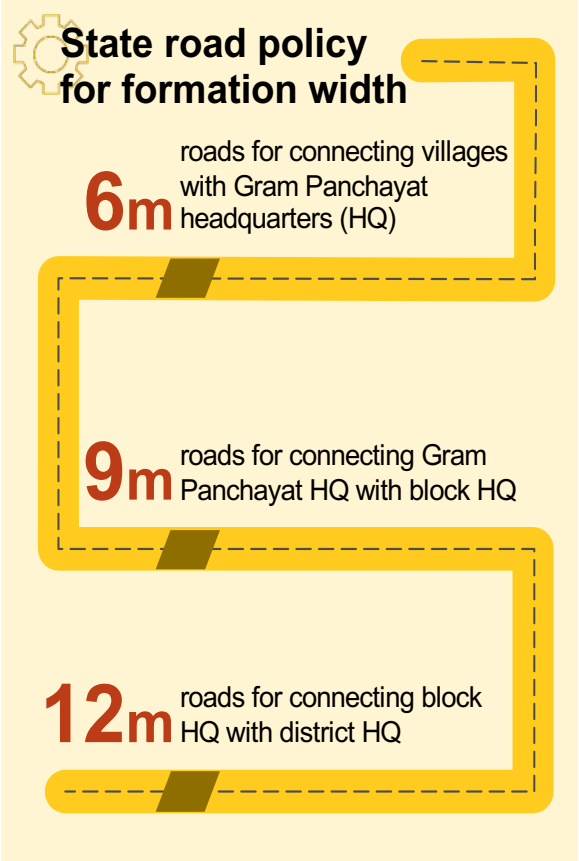
- Implement uniform width and quality standards (e.g., State Road sector policy for formation width) for all rural roads to ensure durability, safety, and ease of transport for goods and people (Exhibit 5.8)
- Scale up construction of rural bridges and introduce multipurpose bridge-cum-weir projects to provide year-round connectivity while supporting water conservation and irrigation needs
- Conduct periodic road audits and establish dedicated maintenance funds to address infrastructure degradation and improve longevity

EXHIBIT 5.8

Illustrative standard for road connectivity

Key principles

- **Ensure sufficient width** for the connecting roads to accommodate at least two vehicles simultaneously
- **Right of way (RoW) optimisation** by capturing up to 2-2.5 times the required width, wherever feasible. This ensures land availability for future expansion and enables revenue-generating activities such as roadside amenities and commercial developments
- **Adherence to quality and durability standards,** including disaster resiliency and future-proofing - e.g., to support the transition from two- to four-wheelers and accommodate heavy vehicle movement for industrial logistics
- **Integration of village roads with broader State and national transport networks**, facilitating seamless connectivity and economic integration with larger markets
- **Robust maintenance system** with timely upgradation of roads and bridges to keep them in optimal condition and extend their lifespan



3.3.4 Community development and involvement

- Engage local communities in project planning and monitoring to ensure that roads meet their mobility needs, ensuring women and marginalised groups have a voice in prioritising connectivity routes
- Implement training programmes for local contractors, engineers, and labourers to ensure high-quality construction and maintenance standards. Focus on upskilling the workforce in modern construction techniques and leverage road-building projects under MGNREGA and similar programmes to create rural employment
- Strengthen collaboration between the Public Works Department (PWD) and Rural Development Department – to enhance their capacity for planning, executing, and maintaining rural road projects

3.3.5 Easing regulatory framework

- Set up a task force to reduce the clearance time for projects from entities such as The Inland Waterways Authority of India (IWAI), National Highways Authority of India (NHAI), etc. by implementing digital processing systems
- Implement a rule for one lakh km of road with routine annual maintenance and additional periodic maintenance every five years

3.4 Gram Panchayat and CBO capacity development programme

Equip Panchayats and community-based organisations (CBO) to function like block offices by providing necessary infrastructure and manpower to improve their operational efficiency and service delivery capabilities:

3.4.1 Expand capacity and improve representation of all communities

- Increase Panchayat manpower from three to six members, ensuring less than 10% vacancy at all times through regular recruitment drives; establish CBO to cover administrative gaps either outside Panchayat jurisdiction or in villages with inadequate coverage and manpower
- Actively involve women and marginalised groups in decision-making roles to ensure inclusive governance
- Empower SHGs and village committees to undertake maintenance and administration of public facilities like water systems, parks, and healthcare centres, drawing inspiration from Kerala's 'Kudumbashree mission'

3.4.2 Comprehensive, performance-linked Gram Panchayat development plans (GPDP)

- Support the preparation of GPDPs, with clear, actionable five-year roadmaps, aligning them with State goals
- Incentivise performance through annual rewards linked to achievement of goals outlined in the GPDPs

3.4.3 Improve standardisation and accountability

- Achieve 100% ISO certification of Gram Panchayats, ensuring standardised processes
- Commission a study for process engineering and activity mapping to define clear roles and responsibilities for all Gram Panchayats (successfully implemented in Karnataka)
- Implement real-time digital platforms for tracking Panchayat projects and activities, enhancing accountability and enabling timely interventions

- Establish digital platforms for real-time monitoring of utilities, including water, electricity, and waste management

3.4.4 Financial sustainability

- Form task force to assess innovative financing avenues, strengthen financial viability of Gram Panchayats and release model guidelines
- Equip Panchayats on model guidelines and skills needed for effective revenue collection and management

3.4.5 Conduct quarterly training programmes for Panchayat members, focusing on administrative skills, financial management, technology integration and project execution

- Establish four centres across the State, housed in State Universities, to impart these training programmes with dedicated faculty
- Engage institutions of national and international eminence to design and update curriculum on regular basis, and conduct 'Train-the-trainer' programmes

CHAPTER 6

URBANISATION AS A GROWTH ENGINE

Summary

Urbanisation is crucial for economic growth as it enhances productivity through positive externalities and economies of scale, leading to more efficient resource use and reduced ecological footprints. Odisha's level of urbanisation at 17% (per Census 2011) is significantly below the national average of 31%. This gap provides an opportunity to urbanise in a planned, sustainable manner, with a focus on liveability and inclusivity.

Odisha envisions its cities as dynamic socio economic hubs that can uplift more than four crore residents and support its goal of reaching a USD 1.5 trillion economy by 2047.

By 2047, the State envisions the following outcomes

- Achieve 60% level of urbanisation by 2047, 40% by 2036 across the State
- Over 60% GSDP from major agglomerations (currently 20%), with the Bhubaneswar-Cuttack-Puri-Paradip Economic Region (BCPPER) contributing approximately 33% to the State GSDP by 2047
- At least two cities listed on the 'Top 100 Global Liveability Index' by 2047, with at least one city being listed by 2036
- 100% access to basic amenities and community spaces in all towns and cities by 2036
- Provide affordable housing and drink from tap water across all eligible areas

Key initiatives to achieve the outcomes

Establish Bhubaneswar-Cuttack-Puri-Paradip Economic Region (BCPPER) as a USD 500 billion hub through integrated economic planning, covering six key components – innovation and knowledge hub, tourism destinations, logistics and hi-tech manufacturing, tertiary education, medical tourism and planned urbanisation, sustainability, multi-modal connectivity, and port-led development

Activate three additional agglomerations based on BCPPER as a model agglomeration: Bargarh-Jharsuguda-Sambalpur, Berhampur-Chhattrapur-Gopalpur, and Jeypore-Koraput-Sunabeda

Transform eight cities around industrial clusters: Angul, Balangir, Bhadrak, Kalinganagar (Vyasnagar), Keonjhar, Baripada, Rayagada, and Rourkela, as model cities with strong economic anchor(s), world-class townships, mixed use spaces, 100% access to basic and advanced amenities, and multi-modal connectivity

Launch a comprehensive 'Liveable cities mission' ensuring minimum quality of life for around 45 cities with more than 25k population[1]

Set up a well-structured governance system with devolution, robust capability building, and a focus on women empowerment, ensuring 100% saturation of professional town planning capacity for all Urban Local Bodies (ULB)

Constitute a task force committee team under the Regional Development Authorities (RDA), with high public investments in the initial phases, enabling corporate investments in subsequent cycles

Facilitate policy reforms such as strengthening centralised town planning, by empowering the 'Directorate of City Planning' and ensuring revision of economic plans every five years

[1] per 2011 Census, including the ones covered in other initiatives

Over the next 24 months, the State will

- **Launch a 'BCPPER Regional Economic Development Board'**, onboard international and national experts to build a comprehensive economic plan through a growth-hub programme for the region, and outline a five-year actionable roadmap with clear milestones and accountabilities
- **Accelerate key infrastructure projects for the quad-city region** such as three major ring roads (capital region, outer and inner ring roads), 'New Cuttack' on the reclaimed waterfront, and proposed regional metro, etc.
- **Build economic plans** for two prioritised brownfield cities – Keonjhar and Rayagada
- **Launch 'Liveable Cities Mission'** with a State's 'Liveability Index' to rank around 45 cities on key amenities, linking scores to growth plans, funding, and performance-based rewards
- **Establish an investment a task force committee team** to mobilise at least 25% of investments through the corporate sector
- **Engage with town planning professionals** on fast-track basis, especially for the prioritised cities

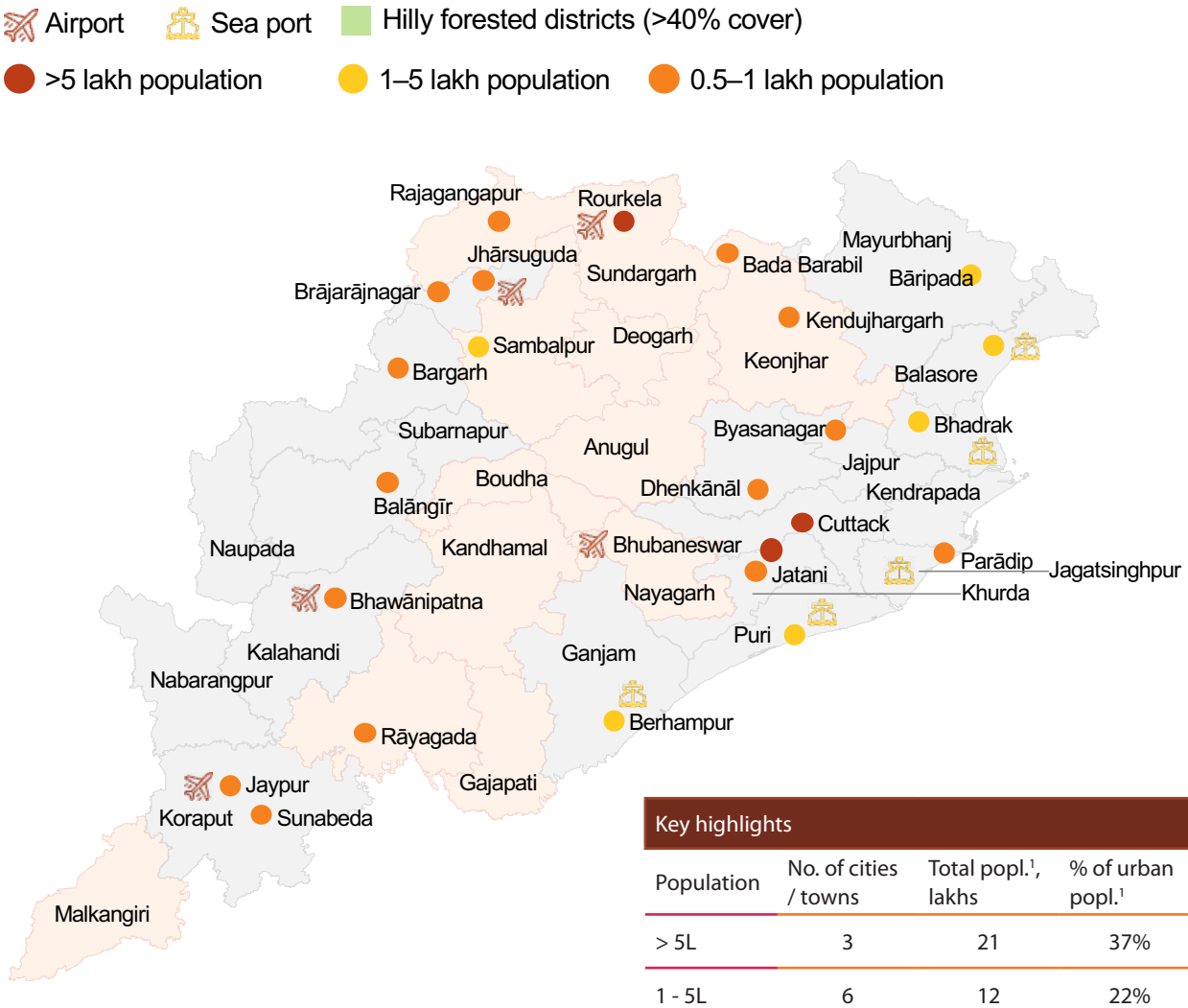
1. Context

As of 2011, Odisha recorded a level of urbanisation at 17%, with only three cities exceeding a population of five lakhs – Cuttack, Bhubaneshwar and Rourkela. This is represented below:

EXHIBIT 6.1

Cities with more than 50,000 population as of 2011 Census in Odisha

Key cities and agglomerations in Odisha (per 2011 census)



Key highlights			
Population	No. of cities / towns	Total popl.[1], lakhs	% of urban popl.[1]
> 5L	3	21	37%
1 - 5L	6	12	22%
0.5 - 1L	12	11	19%
0.2 - 0.5L	41	12	22%
Total	**62**	**56**	**96%**

[1]Population

Source: Census 2011, Economic Survey of Odisha 2023–24

With successful schemes like 'Drink from tap water' benefiting 12 lakh people, the State has invested in improving the liveability conditions for the residents. However, there remains an opportunity to further enhance these standards, as shown below:

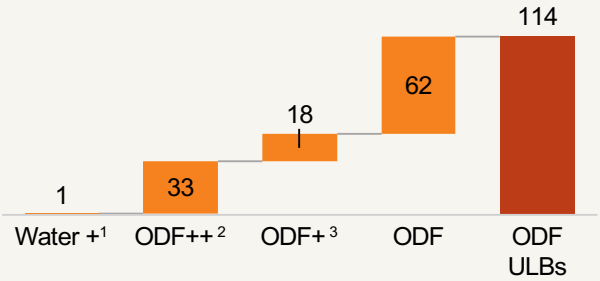
EXHIBIT 6.2

Parameters where Odisha is performing better or at par with the national average

Parameters where Odisha has a scope of improvement vs. the national average

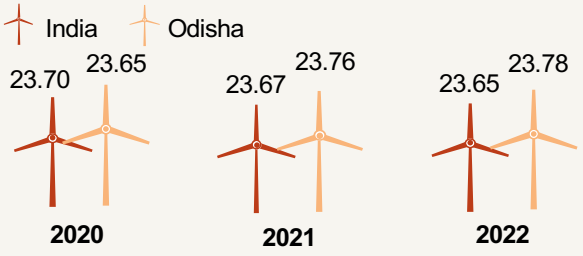
Sanitation

114 out of 115 ULBs[1] are Open Defection Free (ODF)



Power supply

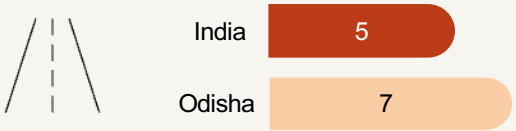
Average number of hours of power supply



Transport

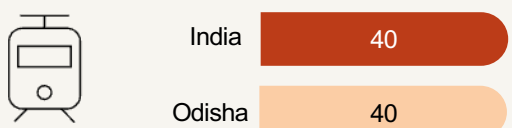
Road connectivity

per thousand population



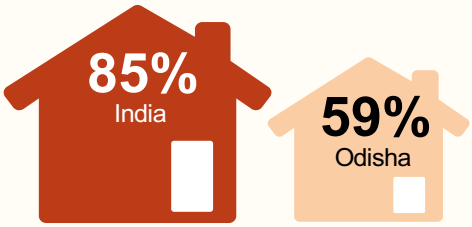
Railway density

per thousand sq. km



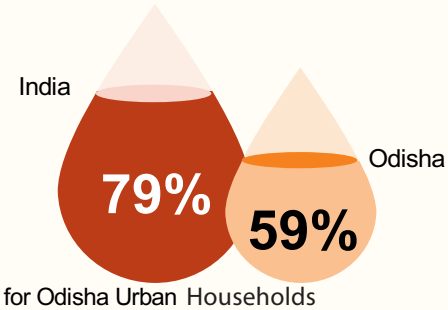
Housing

% households in pucca houses



Water supply

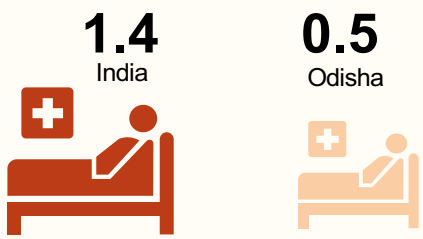
% households with access to piped water supply[2]



98% for Odisha Urban Households

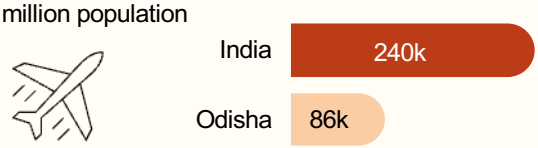
Social infrastructure

No. of hospital beds per 1,000 urban population[1]



Air passenger

per million population



[1] Treated wastewater and reuses it to prevent environmental pollution
[2] ODF+ and mechanised cleaning of septic tanks and sewers
[3] ODF and implemented waste management systems

Source: Economic Survey of Odisha 2023-24, (1) Central Bureau of Health Intelligence, Centre for Economic Data and Analysis, (2) e-Jal Shakti dashboard, (3) Central Pollution Control Board

Urban population is expected to grow by over 1.8 crore by 2047, as Odisha ramps up its level of urbanisation from the current 17% to 60%, in line with the 'Viksit Bharat' goals for national urbanisation. This is also in line with other major States in the country like Tamil Nadu (49%) and Maharashtra (45%)[2].

This imperative also offers an opportunity to ensure all future urbanisation occurs in a planned, equitable and sustainable manner, with thriving economic activity combined with liveability.

1.1 Key challenges

Odisha's cities face certain structural challenges as they strive to adapt to the demands of a rapidly increasing population and the complexities of expanding infrastructure:

EXHIBIT 6.3

- **Gap in social amenities**: Opportunity to address gaps such as limited recreational spaces, insufficient public toilets, and sparse child-care areas
- **Waste management**: Need for comprehensive waste management systems, including at-source segregation, collection, and treatment
- **Slum rehabilitation**: Need to reimagine rehabilitation based on legal, social, and environmental considerations
- **Unplanned urban growth**: The organic, unplanned expansion of urban areas overwhelms urban bodies, leading to unsustainable development
- **Limited capacity and governance**: Development authorities control small regions limiting efficient use of resources and scope for effective revenue generation
- **Climate change risks**: Odisha's cities, particularly the ones on the coast, face significant risks from climate change, including cyclones, floods and earthquakes

[1] Census 2011

1.2 Key trends

To tackle these challenges and create world-class facilities for the residents, it is essential to gain a deeper understanding of urbanisation trends from global cities and Indian peers to draw key learnings:

EXHIBIT 6.4

Transport connectivity-linked urban development within and between city agglomerations (e.g., Singapore's Integrated Transport System is immensely popular, with around 80% trips in the city taken on public transport)

Shift from traditional land use planning to long-term economic vision-based planning for city-regions, fostering cluster-based growth; integrate diverse factors such as tribal district inclusion, heritage conservation, coastal resilience, and natural hazard mitigation to ensure balanced, inclusive, and sustainable development

Digital integration in urban planning and rise of meta cities: Cities are evolving with physical and digital infrastructure, by leveraging artificial intelligence and digital tools (e.g., Amsterdam's Smart City initiative has resulted in 30% reduction in energy consumption)

Focus on socio-economic inclusivity via affordable housing and social equity (e.g., Brazil's 'Minha Casa, Minha Vida' reduced the number of households living in sub-standard housing from 60L to 16L in seven years)

Innovative financing models, such as PPPs[1], tax incentives, and streamlined regulations, have successfully attracted corporate investments (e.g., PPPs in the UK deliver over GBP 56 billion in infrastructure every year)

Increased focus on sustainability: 150+ cities worldwide have planned ideas to reduce mobility-related emissions; for e.g., Copenhagen is aiming for carbon neutrality by 2025

[1] Public-private partnership

2. Vision and outcomes

The State recognises urbanisation as a cornerstone for progress, bridging its rich heritage with modern infrastructure to drive innovation and improve quality of life. By fostering inclusive growth, it can empower communities, create jobs, and unlock opportunities for a resilient future.

EXHIBIT 6.5

VISION 2047

Inclusive city agglomerations as socio-economic epicentres driving sustainable growth with future-ready infrastructure and enhanced quality of life

[1] Currently 20%

To bring this Vision to life, it is vital that the State establishes clear, measurable outcomes that will guide all stakeholders towards a common goal and ensure accountability:

EXHIBIT 6.6

Category	Key outcomes	Unit	Current	2029	2036	2047
Planning	Level of urbanisation	% coverage	17%[1]	30%	40%	60%
	Cities with more than 15 lakh population	Nos.	Nil[1]	1	3	5
	Cities with master economic plans	% coverage	-	80%	100%	100%
Utility infrastructure	Households with piped water connections	% coverage	98%	100%	100%	100%
	24/7 access to drinking water	% coverage	40%	100%	100%	100%
	Solid waste processing[2]	% generated	97.7%	100%	100%	100%
	Waste-water managed	% generated	25%	50%	70%	100%
	Average duration of power supply	No. of hours per day	23.7	23.8	23.9	24
Urban transport/ connectivity	Cities with public transportation	% of all	10%	25%	60%	90%
	Public transport use[3]	% daily commuters in cities with public transportation	5-7%	25%	35%	>50%
	Non-motorised transport (NMT)[4]	% of total length of road network	-	5%	10%	20%
Housing	People living in pucca houses[5]	%	59%	90%	100%	100%
Sustainability and inclusivity	Electric vehicle and alternate fuel vehicle registration	% of total	10%	35%	70%	80%
	Average Air Quality Index (AQI)[6]	AQI	65	50	40	<40
Private investment	Share of corporate investment in infrastructure development[7]	%[8]	-	10%	15%	25%
Capacity and capability building of governance bodies	Vacancy rate in Urban Local Bodies (ULB)	%	-	<33%	<20%	<10%
	ULBs with annual training	%	50%	80%	90%	100%

[1] According to 2011 Census
[2] Swachhatam Portal, Government of India
[3] Public Transport use: 3.3 Lakhs daily covering 3 large cities in Odisha. Delhi (~60% with 30L+ metro daily users), Hong Kong (90%)
[4] India (targeting 10-15%), Amsterdam (30-35% cycling)
[5] Andhra Pradesh (94%)
[6] Chicago (13), Perth (14), San Francisco (22)
[7] India (targeting >18% by 2047), Mumbai metro (67%), London's cross-rail project (75%)
[8] Delhi Development Authority (30%), Hong Kong (>20%)

3. Key initiatives

To realise its Vision of becoming a well-planned and thriving urban hub, Odisha's planned urban development will be anchored on seven key strategic programmes. The following initiatives aim to create sustainable, inclusive, and resilient urban environments that can support the State's broader economic and social objectives:

EXHIBIT 6.7

4

Launch a comprehensive 'Liveable cities mission' ensuring minimum quality of life for around 45 cities with more than 25,000 population

3

Transform eight brownfield cities - Angul, Balangir, Bhadrak, Baripada, Kalinganagar (Vyasnagar), Keonjhar, Rayagada, and Rourkela - as model industrial cities

2

Activate three additional agglomerations based on BCPPER as a model: Bargarh-Jharsuguda-Sambalpur, Berhampur-Chhattrapur-Gopalpur, and Jeypore-Koraput-Sunabeda

1

Establish Bhubaneswar-Cuttack-Puri-Paradip[5] Economic Region (BCPPER) as a USD 500 billion hub through integrated economic planning

5

Set up a well-structured governance system to ensure timely implementation

6

Constitute Task Force Committee to attract corporate investments

7

Facilitate policy reforms to enable equitable and rapid urbanisation

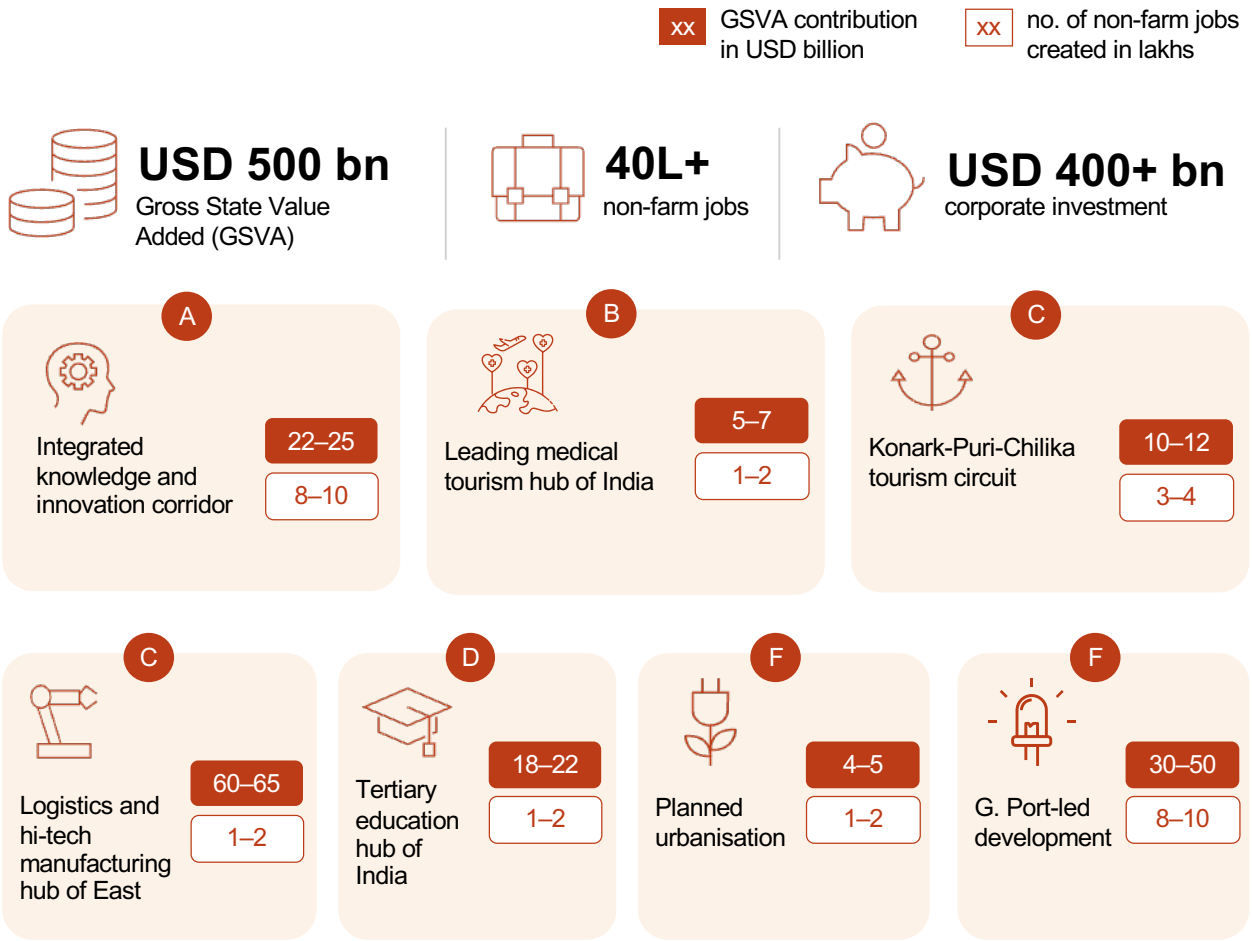
[1] Hereafter addressed as BCPPER - Bhubaneswar-Cuttack-Puri-Paradip economic region

3.1 Establish the Bhubaneswar-Cuttack-Puri-Paradip Economic Region (BCPPER) as a USD 500 bn hub

BCPPER is envisioned as a global model for creating an inclusive, liveable, and sustainable economic region that not only meets the highest standards of urban development but also fosters social equity and environmental stewardship. By showcasing innovative solutions and best practices, BCPPER aims to become a model agglomeration, inspiring similar developments of other clusters within the State and across the country. An illustrative Vision for the quad-city is given below:

EXHIBIT 6.8

Illustrative Vision for BCPPER to be a global lighthouse by 2047



[1] Currently USD 22 Bn
[2] Meetings, Incentives, Conferences, and Exhibitions
[3] Maintenance, Repair, and Operations
[4] Electric vehicle
[5] Renewable energy

Under BCPPER, Odisha will track the following outcomes to monitor progress and ensure that the initiatives are meeting their intended goals:

EXHIBIT 6.9

Category	Key outcomes	Unit	Current	2029	2036	2047
Economic acceleration	GSVA of the economic region	USD bn	22	35-45	120-125	450-500
	Non-farm jobs	Lakh	43	55-60	68-70	65-70
	Level of urbanisation	%	30%	40%	50%	70%
	Incremental corporate investments	USD bn	-	200	200+	-
	Incremental Government investments	USD bn	-	50	-	-
Health and wellness	Hospital bed density	per 1000 pax	<2	3	4	5
	Renewable energy penetration	%	10%	25%	>50%	>70%
	Average Air Quality Index (AQI)	AQI	100–120	<80	<50	<20
Equity and dignity	Women Labour Force Participation Rate (LFPR)	%	<25%	35%	60%	>70%
	Slum households	%	>20%	<10%	<5%	<2%
	Modal share of public transportation	%	5-7%	>25%	>33%	>40%

By regularly assessing these, the State can gauge the overall impact of its projects and adjust its approach as needed to achieve its Vision of an inclusive, liveable, and sustainable economic region.

To achieve these, **several mega projects may likely be actioned** (to be finalised and detailed in the economic planning phase, including identification of job demand and skill courses, investment and funding plan, infrastructure plan, peripheral land monetisation and sequencing, etc.):

3.1.1 Integrated knowledge and innovation corridor with research and startup hubs, biotech parks, and fisheries and marine research parks. Some of the initiatives will include:

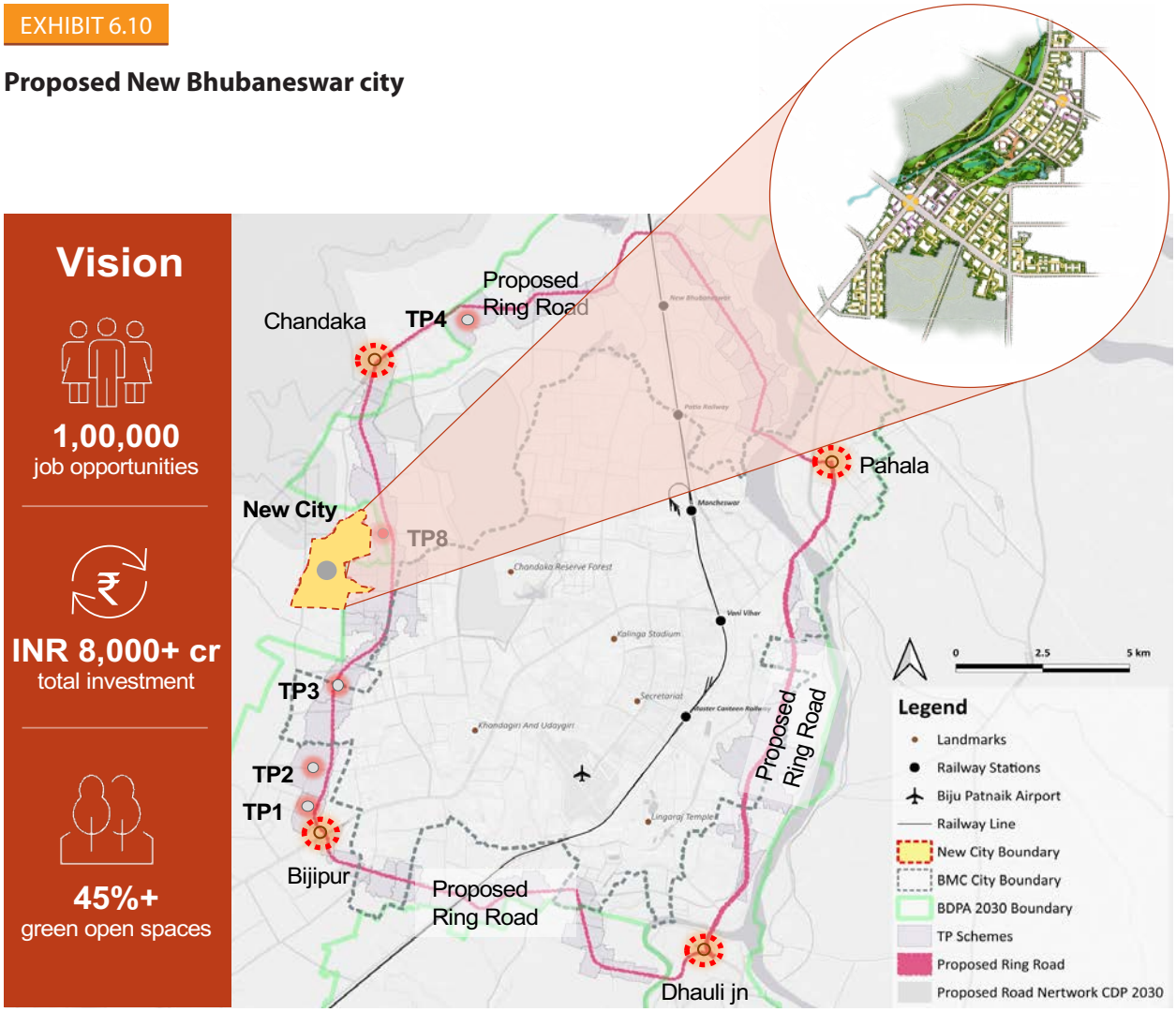
- Launch and finance a 'Growth hub' programme for the region to promote research and development in the State, along with promotion of innovative startups
- Become the regional hub on the East for Global Capability Centres (GCC) with acceleration of undersea cable landing station in Puri (detailed in the chapter 'Service sector expansion')

[6] Municipal solid waste

- Develop 4-5 innovation centres, such as a potential 'New Bhubaneswar city' near Chandaka (detailed in Exhibit 6.10) as an integrated city, taking inspiration from the GIFT City[1] in Gujarat (detailed in 'Service sector expansion' chapter) with world-class townships, adequate open spaces and access to advanced amenities, offering employment to more than one lakh people:

EXHIBIT 6.10

Proposed New Bhubaneswar city



3.1.2 Leading medical tourism hub with a 200 acre, integrated, world-class Medi-city offering over 5,000 hospital beds, specialised training in elder care and advanced procedures. This would include demarcating regions as 'Special healthcare zones' with regulatory easing and fast track approvals

3.1.3 Konark-Puri-Chilika tourism destinations as global premier sites for beach adventure, marine, and MICE[2] tourism, attracting more than 10 lakh foreign tourists per year (covered in detail in 'Premier tourism destination' chapter). Launch some marquee projects, like 'New Cuttack', being built on 426 acres of reclaimed waterfront land along the Mahanadi River as a world-class ecological park and tourism destination with integrated research, sports and rejuvenation centres, as detailed in Exhibit 6.11.

[1] Gujarat International Finance Tec-City
[2] Meetings, Incentives, Conferences and Exhibitions

EXHIBIT 6.11

New Cuttack: Illustrative Vision for the Mahanadi waterfront project

Aiming to create a marquee tourist destination and enhance the quality of life for all residents, the project envisions providing accessible open space, serving as a vital green lung for the city, and acting as a knowledge hub to revive urban and riverine ecology. Additionally, it aims to showcase Odisha's rich maritime history, crafts, and traditions.

Biodiversity hub

Develop a biodiversity hub adhering to NGT[1] norms, focusing on sustainability and resilience while promoting local culture

Iconic identity

Create an iconic new identity for Cuttack, instilling civic pride and enhancing the city's economy, tourism, and environment

Tourism destination

Complement with the Bali Jatra festival, increasing tourism footfalls and offering diverse activities for all age groups and socio-economic backgrounds

3.1.3 Key amenities

- 3.2 km waterfront promenade with walkways, activity zones, and utilities
- Boardwalks in the forest zone
- Zones for dining and performances
- Playgrounds for toddlers, young adults, senior citizens, and disabled-friendly areas

[1] National Green Tribunal

- Odisha Haat and heritage village
- Open spaces like pet park, thematic gardens, butterfly park, and formal garden areas
- Ground for large-scale outdoor events and festivals
- Picnic spots and an open maritime museum

3.1.4 Logistics and hi-tech manufacturing hub of the East attracting Maintenance, Repair, and Operations (MRO) facilities, aviation training centres, multi-modal logistics parks, and high-tech industries such as Electric Vehicle (EV) assembly and consumer goods manufacturing. Some of the key steps to achieve this would include:

- Build a 2,500-acre Aerotropolis at Puri with special zones for aviation, and logistics, etc.
- Develop a 5,000-acre integrated industrial area between Bhubaneswar and Cuttack, planned as self-sufficient industrial city, including a 200 acres Multi-Modal Logistics Park (MMLP) near Bhubaneswar
- Form up a task force to accelerate development of the Puri International Airport

3.1.5 Tertiary education hub of India with campuses of eminent institutions in an Edu-city area, attracting over 4,000 college seats. Illustrative list of actions would include:

- Expand the capacity of the 'World Skill Centre' on a hub and spoke model to ensure coverage across the region
- Foster a talent ecosystem for STEM[3] education, with curriculum development and apprenticeship programmes, with corporates and academic institutions
- Launch schemes to top-up financial incentives with regulatory easing to attract eminent national and international institutions to establish campuses

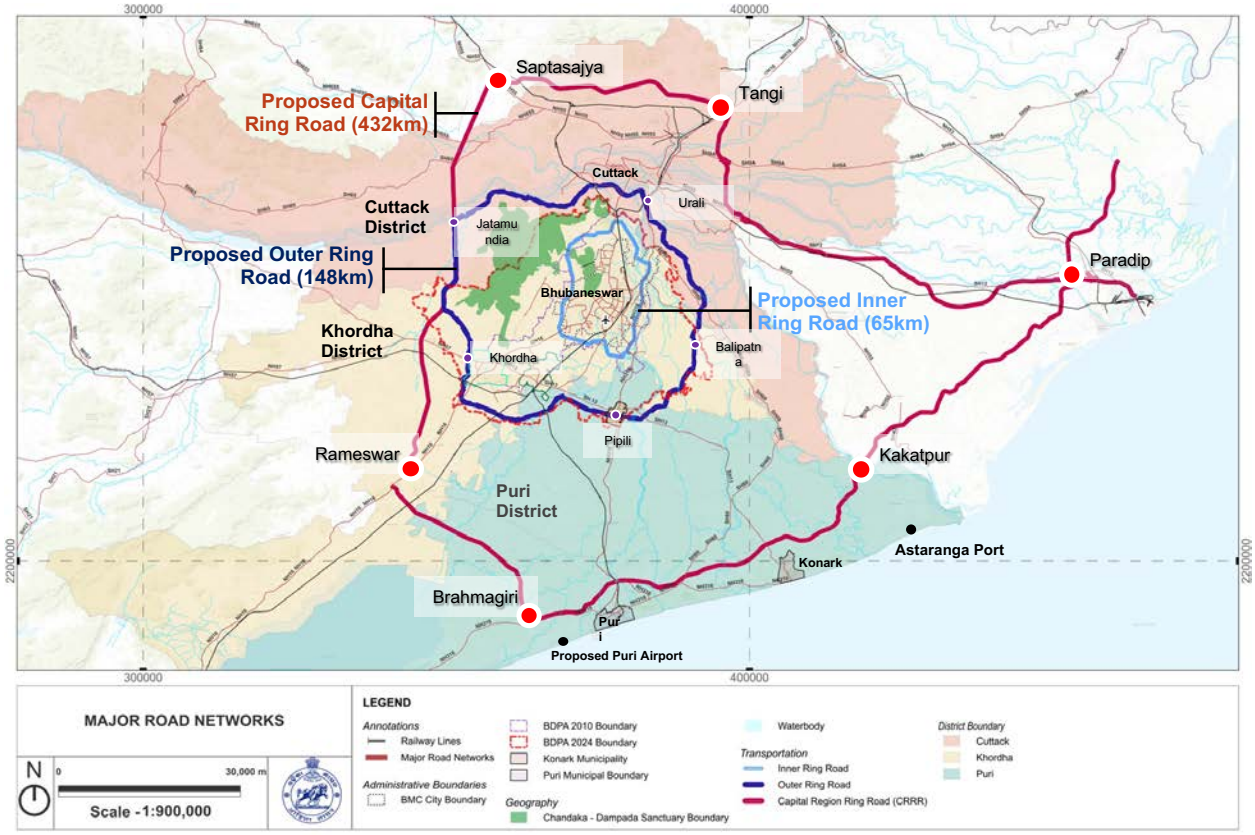
3.1.6 Planned urbanisation championing sustainability and multi-modal connectivity

- Champion sustainability, targeting over 80% EV penetration[4] and more than 70% renewable energy usage by 2047
- Ensure best-in-class multi-modal logistics connectivity including promoting and scaling up affordable public transport, integrating metro, bus, para-transit modes, first-last mile connectivity, and enabling unified, contactless smart card (Detailed in 'Logistics, infrastructure and connectivity' chapter)
- Expedite the development of ring roads connecting the major cities in the region (Exhibit 6.12)

[3] Science, Technology, Engineering and Mathematics
[4] as a % of new cars registered

EXHIBIT 6.12

Ring road plan for BCPPER



432 km
Capital region ring road

Connecting:
Khordha - Tangi to Cuttack - Tangi (111 km advance stage - Paradip Road and Coastal Highway to be finalised)

148 km
Outer ring road

Connecting:
Jatamundia - Trisulia - Pahala - Balipatna - Pipili - IIT - Jatani - Khordha

65 km
Inner ring road

Connecting:
Tamando - Chandaka; Chandaka - Chandaka - Pahala; NH16 – NH316; Dhauli - Tamando

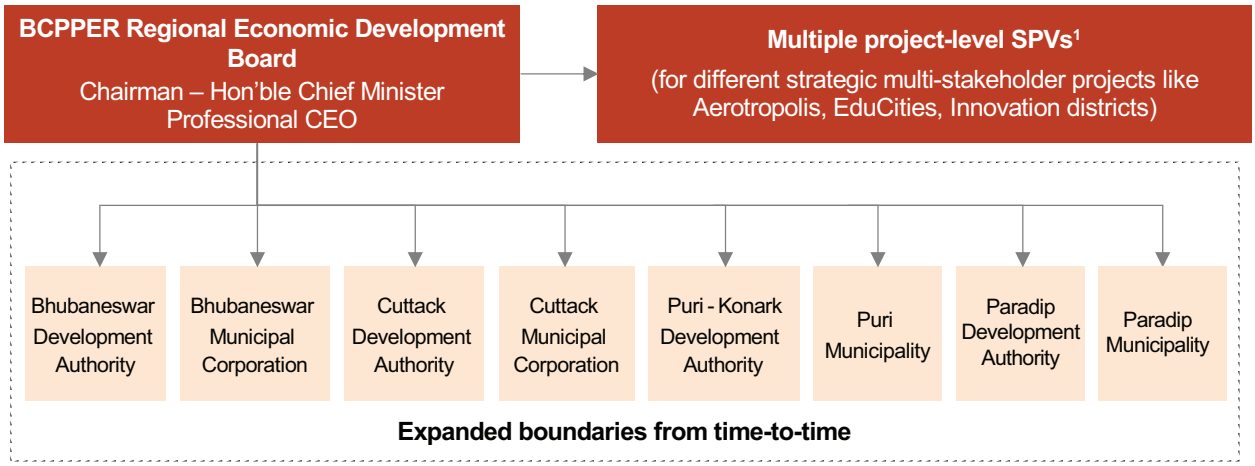
3.1.7. Port-led development through Paradip: Detailed in the chapter 'Logistics, infrastructure and connectivity'

To expedite this Vision, Government of Odisha would establish a **'BCPPER Regional Economic Development Board'** under the office of Chief Secretary (Exhibit 6.13).

The Board, empowered through Statutory Acts and rules, will be crucial for the integrated development of the region, driving multi-modal connectivity and the growth of suburban and satellite cities - objectives difficult to achieve with multiple local bodies. Inspired by Mumbai Metropolitan Region Development Authority's (MMRDA) role in Mumbai, the Board would be responsible for strategic thinking and overall economic region planning. To ensure alignment with the State priorities, it will have State-level representation, with effective stakeholder coordination and robust data management as cornerstones for cohesive regional progress.

EXHIBIT 6.13

Illustrative structure of the Regional Economic Development Board, which could drive more than 80% of the economic drivers for BCPPER



Roles of the Board

- Regional economic visioning and spatial planning
- Regional transportation planning – metro, railways line, ferries, inter-regional roads, airport
- Guideline-making and frame-working for planned, sustainable urbanisation
- Regional investment promotion for job creation in key economic projects (through investment task force committee cell)

Structure and Composition

- To be established as a lean, strategic body chaired by the Hon'ble Chief Minister and led by the Principal Secretary, Housing and Urban Development
- Professional CEO
- 10+ Board members – ACS/ PrS[2] from Planning and Convergence, Industries, Electronics and Information Technology, Tourism, Forest, Commerce and Transport, Skill Development, Higher Education, Finance, PWD, Water Resources, Rural Development and other key departments
- Key divisions: Planning, EPC, Investment attraction, Digital and support functions (finance, administration, legal), Environment and Urban forestry

[1] Special purpose vehicles

[2] Additional Chief Secretary/ Principal Secretary

As an immediate next step, an integrated economic plan will be developed in the next 12 months with following illustrative components:

- **Baselining and forecasting** across geographical boundary, demographics, liveability and sustainability metrices
- **Final Vision, goals and priority projects** through detailed consultations from national and global experts
- **High-level zonal plan for 2036** by mapping geographical dispersion of economic activities, urban growth axes, trunk connectivity corridors, and infrastructure
- **Downstream spatial planning** to translate into tangible planning inputs with the 2029 horizon, e.g., real estate requirement (affordable housing, hotel keys, industrial land, commercial BUA, sports complexes, and warehousing etc.), public transport, infrastructure connectivity, bulk utilities (water supply, power), and land requirement
- **Prioritised list of investible projects** for each growth theme for 2029
- **Detailed actionable roadmap** focusing on project implementation plan, policies, funding plan (including, corporate financing) and key performance indicators (KPIs) for tracking success
- **Institutional structure needed**: Effectively implement the economic plan, including mapping role of each Government agency involved and new agencies to be created

3.2 Activate three additional agglomerations based on BCPPER as a model

The State will develop three other potential agglomerations, with distinctive endowments and potential for growth into economic clusters. It will undertake a phased approach to prioritise the immediate action in BCPPER, which will then act as a model for the development of other clusters in the future.

Immediate priority: (1) Bhubaneswar-Cuttack-Puri-Paradip (detailed above) as a model agglomeration (2) Bargarh-Jharsuguda-Sambalpur

Post 2029: (3) Berhampur-Chhattrapur-Gopalpur, and (4) Jeypore-Koraput-Sunabeda

These are demonstrated below:

EXHIBIT 6.14

City agglomerations

(x) Deep-dive in chapter

>5 Lakhs population | 1–5 Lakhs population | 0.5–1 lakhs population

Immediate priority

1. Bhubaneswar-Cuttack-Puri -Paradip
2. Bargarh-Jharsuguda-Sambalpur

From 2029

3. Berhampur-Chhattrapur-Gopalpur
4. Jeypore-Koraput-Sunabeda

Exports: Sambalpuri sarees, Sambalpuri Kendu leaves (known as Odisha's green gold), sponge, iron and steel

Agriculture: 363k ha forest cover, 18k ha land under cultivation with ~90cr. agro-based and soda water industries and ~250 cr. turnover of rice mill cluster

Animal husbandry: Cows, buffaloes, goats, and pigs as alternate living

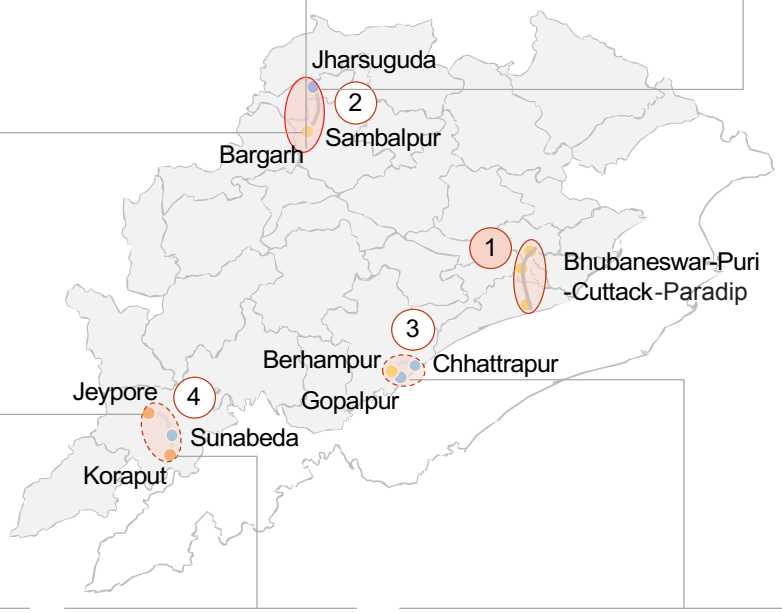
Handlooms: 12k+ looms of silk, tussar, cotton weaving

Ancient temples: Nrusinghanath, Asta Sambh, tiger sanctuary also known for Legendary Veer Surendra Sai's battle against British, etc.

Agriculture: 30% of Odisha's rice production (i.e., 0.8 MMTPA) with 95 mills

Minerals-based economy: Coal, quartzite and fire clay + 13 sponge iron plants – MSME units of Vedanta Alumina, Steel Limited, SMC Power Generation Ltd.

Non-minerals-based economy: Limestone, granite, white sandstone and laterite stone – with plants of Ultratech Cement



Minerals: Bauxite (~50L tonnes), Limestone (170k tonnes) that can be vertically integrated to do value addition within the city

Tourism: Forest

Industries: HAL factory[1] (~15 km from town), NALCO

Tourism

Textiles: Known for exquisite silk sarees woven with silver and gold threads, 'Patto' sarees

Crafts: Brass and bell metal ware, wood carvings, horn toys and carpets, bamboo-straw handicrafts

Tourism: Religious spaces (shrines of Thukurani, Nilakantheswar), and beach

Fisheries: Fish processing potential

[1] Hindustan Aeronautics Limited, a defence enterprise of the Government of India

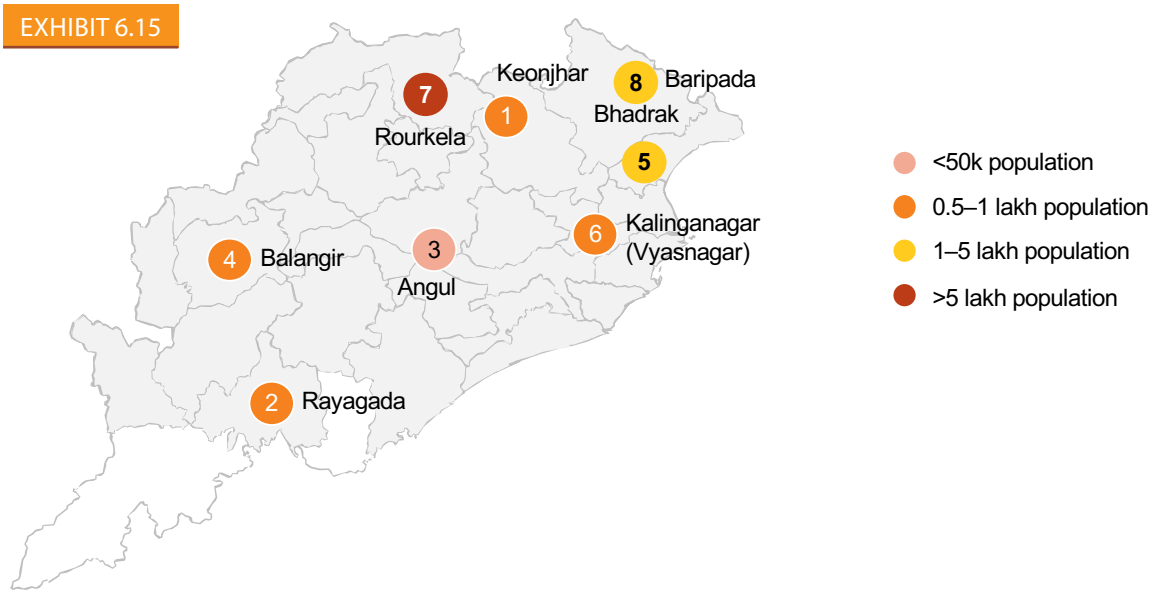
3.3 Transform cities as 'Model industrial cities'

Select brownfield cities will be redeveloped into a future-ready, world-class cities to attract top talent and strategic investment. In Odisha, revitalising such areas would help facilitate efficient use of land, prevent urban sprawl and preserve critical natural ecosystem, while stimulating the economy.

The State aims to redevelop eight brownfield cities in a phased manner (Exhibit 6.15):

- **Immediate priority**: (1) Keonjhar (2) Rayagada
- **Post 2029**: (3) Angul (4) Balangir (5) Bhadrak (6) Kalinganagar (Vyasnagar) (7) Rourkela (8) Baripada

EXHIBIT 6.15



1 **Manufacturing:** Metal downstream industries (50+ existing) for minerals like iron, manganese, chromate, bauxite, and limestone, etc.

2 **Food processing:** More than INR 4k crore investments by MSMEs

Manufacturing: Two existing aluminium plants of nearly 5 MTPA

3 **Manufacturing:** Nine large scale industries and PSUs in downstream metal and energy, including NALCO Aluminium plant, and NTPC and Talcher thermal stations, etc.

4 **Food processing:** Existing rice mills cluster with 60+ enterprises

Handloom and textiles: Three existing handloom clusters with nearly 270 (combined) enterprises

5 **Tourism:** Goddess Bhadrakali temple

Manufacturing: FACOR (manufacturers of Ferro Chrome)

Port-led: Upcoming port

6 **Manufacturing:** Nine major steel companies including Tata Steel producing nearly 10 Million tons of steel and have generated employment for over 40,000 people

7 **'Industrial capital of Odisha' Steel:** 28k tonnes of iron ore production (at a district level) with one of the biggest steel plants in India situated at Rourkela - Steel Authority of India (SAIL)

Handicrafts: 350+ MSME1 units across jute work, batik print, applique work, silver filigree, embroidery, tie and dye, etc.

Other large plants: Indian Detonators Ltd., Odisha Industries Ltd., Gulf Oil Corporation Ltd., Rourkela Constructions Pvt. Ltd., Orissa Cement Limited

8 Sal leaf and Sabai craft clusters

[1] Micro, Small and Medium Enterprises

The following core principles will drive the efforts for transforming these cities into thriving, sustainable communities:

- **An economic plan at attracting the first 25,000 jobs** as an anchor for development. Preferential land allotment policies and corporate sector engagement in building mixed-use clusters will help catalyse economic growth
- **A 15-minute walking city with integrated infrastructure**: Well-designed street grid pattern complete with footpaths, subways, and essential underground utilities (electricity, water, drainage, and fibre networks, etc). Successful examples include Gujarat International Finance Tec-City (GIFT City), Marina Bay in Singapore, and Barcelona's superblocks
- **Green and blue public spaces**: Ensuring at least 12-14% of the city's area is dedicated to open spaces, such as parks, gardens, and playgrounds
- **Common amenities and last-mile infrastructure**: Large parks, sports complexes, schools, hospitals, retail spaces, and places of worship, with plots allocated at subsidised rates. GIFT City's model, where hospitals and clubs received land at discounted rates, can be an inspiring example
- **Mixed-use planning with affordable housing**: Integrated residential, commercial, retail, and job hubs, with walkable access to public transit. This approach fosters vibrant, inclusive communities

These core principles lead to six actionable steps focused on planning, infrastructure, connectivity, housing, inclusivity and sustainability, as well as corporate investment:

EXHIBIT 6.16

Key driver	Projects	Policy interventions	Institutional interventions
3.3.1. Economic-planning and visioning	Prepare economic master plans for the finalised brownfield cities Form task forces to take up implementation of economic plans in a phased manner	Mandate integration of blue (water) and green (parks, vegetation) infrastructure into city planning	Institutionalise 20-25-year economic Vision and plan exercise for priority cities Empower ULBs with capabilities and talent for planning and investment Launch digital, citizen participation platforms Establish urban data labs at local universities and tech companies for data mapping
3.3.2. Infrastructure and utility development	Saturate road connectivity to all urban areas, ensuring compliance to minimum width and quality standards Saturate climate and disaster resiliency in infrastructure Saturate waste segregation, recycling and treatment; Build stormwater harvesting, green rooftop, etc. in flood-prone areas	Establish norms for retrofitting existing infrastructure to meet modern requirements	Form a task force to build capability and ensure 100% IoT integration to monitor utility usage and maintenance (e.g., sensors to detect leaks and optimise energy usage)

Key driver	Projects	Policy interventions	Institutional interventions
3.3.3. Urban transport and connectivity	Establish adequate multi-modal public transport Saturate transition to electric buses for all public transport Saturate inclusive facilities (e.g., for women, PWD) in public transport Implement intelligent mobility systems, e.g., AI-powered traffic management, real-time tracking	Mandate norms for car-free zones, to promote walking, cycling, and public transport	Constitute a 'City Mobility Planning Committee' (taking inspiration from Pune) for comprehensive mobility planning and integrating different transit modes like buses, and metro, etc.
3.3.4. Housing	Develop inclusive infrastructure like working women hostels and elder care housing to cater to the needs of various groups Launch affordable housing projects in suitable locations in collaboration with corporate players with adequate coverage across the cities Integrate GIS and drone-enabled technology to survey and manage increase in slums in cities	Launch a 'Mixed-income housing scheme' where Government-subsidised housing co-exists with other housing Simplify approval process and allow innovative financing models to increase corporate investments Formulate urban land pooling policies to create land parcels for large-scale investments	Establish the 'Slum Rehabilitation Authority' under respective ULBs (like Mumbai) to promote public-private projects for slum re-development, e.g., offering free, re-built houses to slum dwellers with monetisation of surplus space
3.3.5. Inclusivity and sustainability	Identify and build community spaces and gender-specific infrastructure like public toilets, crèches, women-specific green zones in urban planning	Mandate universal design principles to ensure all infrastructure is accessible Mandate green building codes (like LEED, IGBC) for all new housing projects	Form a task force to establish and promote sustainability goals for each city, promoting EV, rooftop solar installations, and waste management
3.3.6. Corporate investment	Form an investor attraction team to conduct infra-focused roadshows and investor seminars (like Invest Odisha) Develop a list of investible projects for prioritised cities Build frameworks for corporate investment across project types, with innovative finance models	Provide incentives like, tax breaks, subsidies, and long-term financing options for corporate developers to invest in sustainable urban projects	Establish economic development and promotion councils with specialised capabilities in urban marketing Identify and evaluate revenue generation models from land, and smart city initiatives, etc.

3.4 Launch a comprehensive 'Liveable cities mission' ensuring minimum quality of life for all cities and towns through a dedicated mission

Odisha will base it on the following key principles to achieve basic quality of living in all its cities and towns:

EXHIBIT 6.17

A Inclusive access to basic amenities

- 100% access to minimum standard housing, with 24/7 access to clean piped water, reliable energy, and telecommunications
- Saturation of sanitation services such as waste collection and treatment
- Access to affordable, safe, and reliable public transportation that minimises travel time and cost

B Affordable healthcare and education

- 100% access to private and public healthcare and education institutes to every citizen
- General health indicators like life expectancy and child mortality rates to align with the national best practices
- Learning outcomes at par with national averages, supported by modern curriculums and well-trained educators

C Economic empowerment and livelihood opportunities

- Adequate access to decent work opportunities with fair wages, job security, and basic labour rights across sectors
- Economic empowerment programmes offering skills training, enabling transition to higher-paying jobs and improving their standard of living
- Establish comprehensive social safety nets, including unemployment benefits, disability benefits, and old-age pensions, to protect individuals and families from economic shocks

D Social inclusion and equity

- Equal access to all urban services, opportunities and public spaces for every citizen, regardless of their gender, caste, income, ethnicity, or disability
- Policies to actively promote inclusive urban planning
- Dedicated efforts to eliminate social discrimination and bridge inequality gaps

E Peace of living: Safety, security, and justice

- Political and social stability with no serious disruptions in life or work
- Minimal petty and violent crime through proactive policing and community engagement

3.4.1 To achieve this, the State will launch an end-to-end programme 'Livable cities mission' with the following key components:

- **Annual marquee liveability index**: Group around 45 cities and towns with more than 25,000 population across Odisha based on key parameters like access to 24/7 clean piped water, waste collection, and sanitation in cities, access to public transportation, etc.
- **Customised annual growth plans**: Build targeted plans for cities or towns based on their category
- **Plan-linked funding** to ensure unique needs are addressed
- **Performance-based rewards**: Incentivise cities and towns with additional funding and performance incentives for improvement

3.4.2 Governance mechanisms: Following actions are critical for successful implementation -

- Establish a dedicated Cell with a Mission Director and programme team with suitable multi - disciplinary skills
- Form a high-powered EGoS under the Chief Secretary with appropriate inter-departmental Secretary- or Minister-level representation to monitor periodic progress
- Develop inter-departmental cells under each ULB for implementation

3.5 Set up a well-structured governance system to ensure timely implementation

3.5.1 Strengthen Urban Local Bodies (ULBs) through an autonomous local governance structure

- Establish clear frameworks for financial and operational accountability within ULBs to build trust and ensure effective and transparent governance
- Empower ULBs to make localised decisions catering to community-specific needs
- Equip ULBs with the necessary resources and expertise, focusing on areas like public service delivery and infrastructure management

3.5.2 Devolve powers to local bodies with necessary empowerment

- Empower ULBs with authority on local budgets and resource allocation for responsive and efficient governance
- Actively involve citizens in planning to reflect community priorities and encourage local ownership of development

3.5.3 Strengthen the Housing and Urban Development Department to monitor and enable capacity building of all governing bodies

- Create a data-driven framework to regularly assess ULB performance, capacity and provide targeted assistance
- Implement a fast-track recruitment process in critical areas like urban planning, transport management, and climate resilience

3.5.4 Launch a State-wide capacity building programme

- Conduct a skills audit across the Department and ULBs immediately to identify gaps and roll-out targeted training programmes across public health, environmental management, and administration
- Saturate establishment of town planning boards with adequate capacity and capability of skilled planners in all ULBs

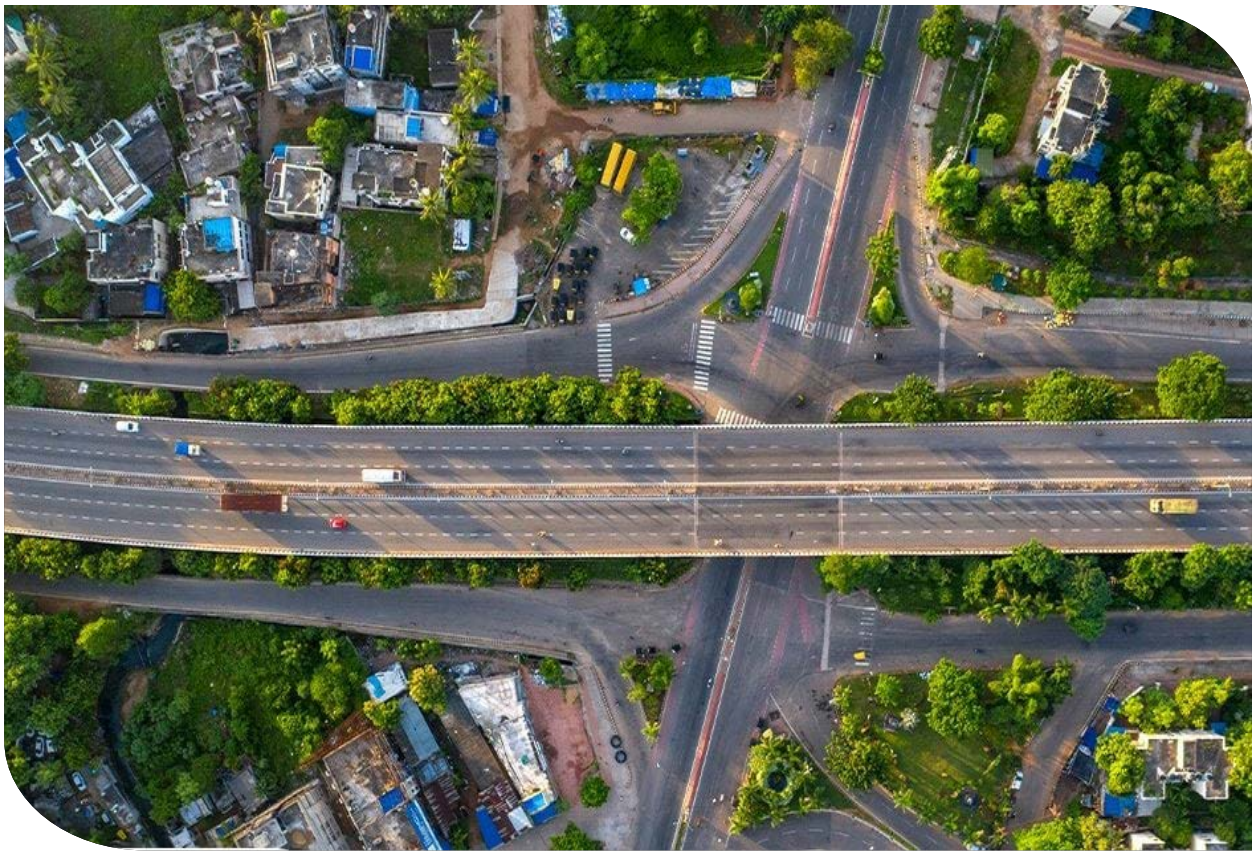
- Launch a 'Central training centre' in partnership with leading institutions (e.g., Indian Institute for Human Settlements (IIHS), Massachusetts Institute of Technology (MIT), Centre for Environment Planning & Technology (CEPT)) for specialised training across digital governance, and urban economics, etc.
- Introduce certification programmes for training completion and fostering career progression

3.6 Constitute a task force committee to attract corporate investments

This team will play a crucial role in attracting investments, facilitating ease of doing business, and promoting the urban centres as prime destinations for both domestic and international investors. Key responsibilities:

3.6.1 Facilitate investments

- Develop and implement strategies to attract investments in urban areas
- Serve as a single point of contact for investors, providing comprehensive support throughout the investment lifecycle
- Streamline processes and reduce bureaucratic hurdles for enhanced ease of doing business



3.6.2 Ensure marketing and promotion

- Conduct roadshows to promote urban centres as attractive investment destinations
- Showcase the unique advantages of investing in specific urban areas, such as infrastructure, skilled workforce, and strategic location
- Participate in national and international investment forums and trade fairs to attract potential investors

3.6.3 Coordinate and support project execution

- Assist investors in navigating regulatory requirements and obtaining necessary approvals
- Facilitate site selection and provide information on the available infrastructure and resources
- Offer post-investment support to ensure successful project implementation and operation

3.7 Facilitate policy reforms to enable equitable and rapid urbanisation

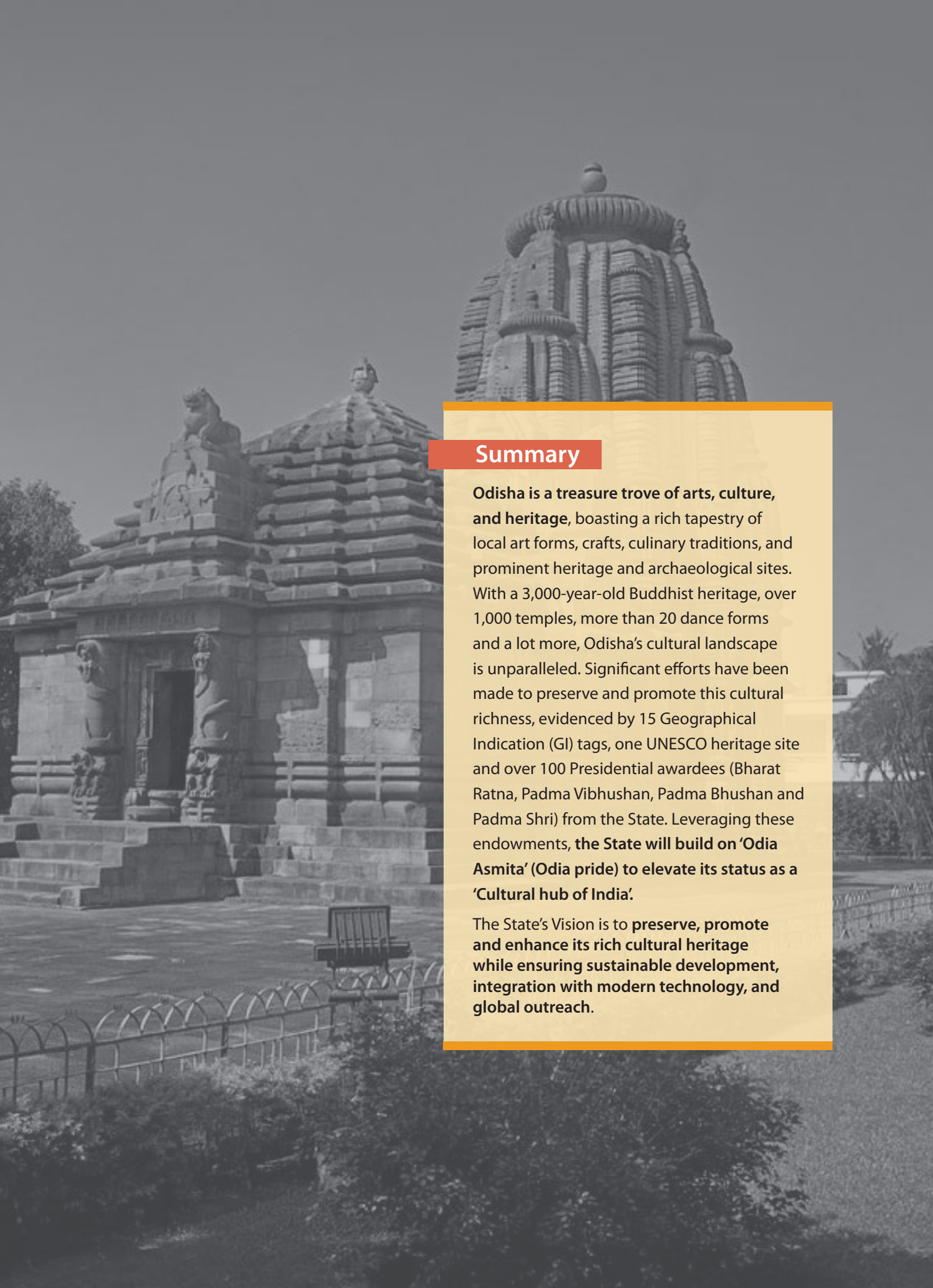
The following table shows an illustrative list of policy reforms that can enable equitable and rapid urbanisation in Odisha:

EXHIBIT 6.18

Illustrative suggestion	Details
Regular revisions of the economic plan	Ensure adherence to a five-year review cycle for economic plans for all ULBs, enabling relevance and responsiveness to changing urban dynamics
Strengthen centralised town planning	Transform and strengthen the existing 'Directorate of City Planning' with expanded authority and adequate resources across locations. This will involve: • Investing in training and development programmes for urban planners and related professionals to enhance their skills and knowledge • Increasing hiring in mission mode to attract high quality talent for planning • Providing adequate funding and technological tools to support comprehensive planning activities
Streamline the conversion of agricultural land	Amend 'Odisha Land Reforms Act, 1960' to eliminate the need for converting agricultural land to non-agricultural use, if the land has already been designated for such purposes under an approved Development Plan. This amendment will expedite land utilisation for housing development
Mandate 'Affordable housing' provisions	Include a compulsory reservation of at least 20% of land for affordable housing projects in economic plans, ensuring space for housing targeted at economically weaker sections (EWS) or low-income groups (LIG)
Provide single window clearance for approvals	Institute a robust single-window clearance system to provide time-bound approvals for layout and building plans across relevant authorities. This mechanism will significantly reduce delays and complexities in the approval process, benefiting both developers and end users
Develop pre-approved plans for EWS/ LIG housing	Develop pre-approved standard designs for EWS and LIG housing and make them publicly available. This initiative will allow individuals to commence construction swiftly, without the need for additional permissions, thus reducing both time and cost
Provide incentives for slum re-development and affordable housing	Give additional incentives, such as increased Floor Area Ratio (FAR), Floor Space Index (FSI), Transferable Development Rights (TDR), and relaxed density norms to encourage slum re-development and promote the construction of affordable housing. These measures will facilitate higher density development, making projects more viable for developers while addressing housing shortages
Add provision for reserving areas for proposed roads and development	Amend 'Odisha Development Authority Act, 1982' and 'Odisha Town Planning and Improvement Trust (OTPIT) Act, 1956' to introduce a provision that mandates reserving 'No build areas' for proposed roads and development for 10 years. During this period, private owners may not be allowed to utilise the land for construction, ensuring the land is available for future infrastructure projects. This provision may remain valid as long as the economic plan is in effect, even extending beyond 10 years if necessary, facilitating smoother urban planning and development
Mandate planning authority permissions for sub-dividing plots	Strengthen the enforcement of the existing requirement under the Odisha Development Authority Act, 1982 and 'Odisha Town Planning and Improvement Trust (OTPIT) Act, 1956' which mandates obtaining permissions from planning authorities before sub-dividing plots, ensuring the necessary infrastructure and civic amenities are laid out before the land is sold. To address the issue of poor implementation, the State may introduce a tiered system based on plot size: • For plots below a certain threshold (e.g., 500 square meters), streamline the approval process to facilitate quicker development while ensuring basic infrastructure requirements are met • For larger plots, enforce stricter planning requirements, including detailed infrastructure plans and phased development approvals

CHAPTER 7

VIBRANT CULTURE, LANGUAGE AND HERITAGE: ELEVATING 'ODIA ASMITA' TO GLOBAL PROMINENCE



Summary

Odisha is a treasure trove of arts, culture, and heritage, boasting a rich tapestry of local art forms, crafts, culinary traditions, and prominent heritage and archaeological sites. With a 3,000-year-old Buddhist heritage, over 1,000 temples, more than 20 dance forms and a lot more, Odisha's cultural landscape is unparalleled. Significant efforts have been made to preserve and promote this cultural richness, evidenced by 15 Geographical Indication (GI) tags, one UNESCO heritage site and over 100 Presidential awardees (Bharat Ratna, Padma Vibhushan, Padma Bhushan and Padma Shri) from the State. Leveraging these endowments, **the State will build on 'Odia Asmita' (Odia pride) to elevate its status as a 'Cultural hub of India'.**

The State's Vision is to **preserve, promote and enhance its rich cultural heritage while ensuring sustainable development, integration with modern technology, and global outreach**.

By 2047, the State envisions the following outcomes

- Preserve and promote of Jagannath culture within the country and across the Globe
- Preserve and develop 100% Identified Heritage Sites with a sustainable financial model to generate more employment
- Enhance employment opportunities for youth and women

Key initiatives to achieve the outcomes

Expand culture-based economy by establishing model arts, crafts and handloom villages, targeting INR 700 crore in annual revenues while supporting artisan training and building job banks; position Odisha as a 'Global hub for artisans' through G2G-enabled cultural exchanges, development of Centres of Excellence (CoE) for different crafts such as Pattachitra and Dhokra casting, and setting up of Asmita Bhawan/ Sanskruti Bhawan in all districts

Obtain global recognition for over 20 heritage sites and develop five 'Model museums' with technology integration, while ensuring all the major sites are covered in the State's tourism development Creation of virtual tours or walkthroughs for museums, non-restricted temple areas and memories of great sons

- Establishment of the 'Shree Jagannath Museum and Interpretation Centre', where all rituals, incarnations and traditions and films depicting stories of the Scandha Purana will be depicted
- Designation of Baraputra, Arts & Crafts, and Freedom struggle villages as 'Heritage villages' with development into tourist destinations

Digitise Odisha's cultural assets to attract a minimum of five lakh annual visits on its one-stop-shop digital platform, including virtual heritage tours, temple management system and e-commerce marketplace, launch a unified marketplace for local art, craft and handloom through public-private partnerships (PPP)

Developing center of excellence in different crafts like Pattachitra, Dhokra casting, brass and bell metal and different handloom production

Create a year-round calendar of festivals and events, contributing to at least 10% of the State tourist footfall. This will include elevating Rath Yatra, Bali Jatra, Dhanu Yatra, and Khandagiri Mela, etc. as landmark international festivals, and Prabasi Odia Divas as an biennial international mega-event

Preserve and promote Odia language, culture, and heritage for the future generations through policy, financial support, and a roadmap for research and artifact collection. A robust governance mechanism, including an expert advisory board and a cell for sustainable financing, will serve as a key enabler

In addition to the above, a robust governance mechanism, including an expert advisory board and a cell for sustainable financing, will serve as a key enabler.

Over the next 24 months, the State will

- **Formulate the 'Odisha Heritage Policy' and the 'Odisha Film Development and Promotion Policy'**. The policy framework will outline clear goals, strategies, accountabilities, and timelines, making Odisha among the first few States in the country to have a comprehensive, robust framework for heritage conservation and promotion
- **Establish the 'Kalinga School of Sculpture and Temple Architecture'** to cultivate highly skilled professionals for the design, construction, restoration, and maintenance of temples both in and outside India. The school will also conduct research and documentation on the intricate details of Kalinga temple craftsmanship
- **Prioritise and create plans for revamping or developing five museums as 'Model museums'** with experiential design and technology integration
- **Plan and implement the first phase of 'Asmita Bhavans'**, 'Sanskruti Bhavans', and 'Model arts, crafts, and handloom villages'
- **Establish task forces for each of the six key initiatives** highlighted above, to manage project implementation, prioritise initiatives, and monitor programme-level goals
- **Establish a financing cell** to centralise budgeting, apply for Central Government grants, and promote investments by engaging with international institutions and corporate players
- **Constitute a financing cell for centralised budgeting**, applying for Central Government grants and engaging with international institutions and corporate sector

1. Context

The arts, culture, and heritage sector is essential in preserving a community's identity, enhancing social cohesion, and fuelling economic growth. Odisha, renowned for its enduring art forms, showcases unique dances, tribal paintings, intricate sculptures, folk music, exquisite handicrafts, and rich handloom products (Exhibit 7.1).

Central to this cultural wealth is the Jagannath culture, one of India's oldest traditions. Rooted in the ancient city of Puri, this profound and vibrant tradition revolves around the worship of Lord Jagannath, an incarnation of Lord Vishnu. Puri is home to the iconic Lord Jagannath Temple, a pivotal pilgrimage site among India's sacred Char Dham. The annual Rath Yatra, or Chariot festival, exemplifies the magnificence of this culture, attracting thousands of global devotees who come to experience the deities' procession on massive, adorned chariots. Beyond religious practice, Jagannath culture shapes the art, music, dance, and cuisine of the region. It embodies inclusivity and devotion, breaking social and economic barriers and promoting unity and spiritual fulfilment. Inspired by these principles, Odisha seeks to expand its cultural economy by leveraging this rich heritage to foster growth and community engagement.

Over the years, Odisha has attained significant success and received various accolades:

- **Established over 10 major museums**: Including the State Museum, Netaji Birthplace Museum, and Tribal Museum, Odisha Craft Museum - Kalabhoomi, etc. which showcase Odisha's diverse heritage
- **Home to more than 100 Presidential awardees**: One Bharat Ratna, four Padma Vibhushan, 11 Padma Bhushan and 90 Padma Shri
- **Obtained 15 Geographical Indication (GI) tags**: Including six GI-tagged crafts like, Konark stone carving, Pipli Applique, Orissa Pattachitra, Cuttack Silver Filigree, Idital painting, Dongria Kandha shawl, and nine GI-tagged handloom products i.e., Orissa Ikat, Kotpad saree, Sambalpuri Bandha saree and fabric, Berhampur Patta (Phoda Kumbha) saree & joda, Gopalpur Tussar fabric, Dhalapathar Parada and fabric, Khandua saree and fabric, Habaspuri saree and fabric, Bomkai saree and fabric
- **Revitalising historic palaces for tourism**: Historic palaces like Belgadia Palace, Rambha Palace, Gajlaxmi Palace, Killa Aul Palace, Killa Dalijoda, and Mahodadhi Palace, among others, have been transformed into heritage hotels, enhancing cultural tourism
- **Introduced supportive policies**: Including the Odisha Handloom policy, Odisha Handicraft policy, tourism development schemes for cultural- and eco-tourism, and initiatives focused on cultural preservation such as the establishment of handloom parks

EXHIBIT 7.1

KEY ENDOWMENTS

Timeless art forms

- 20+ dance forms
- 5+ painting styles
- 10+ music forms
- Arts and sculpture on 5+ surfaces
- Unique fashion

Vibrant crafts

- 10+ unique handicrafts
- Local handlooms

EXHIBIT 7.1 (continued)

Heritage and archaeology

- Buddhist heritage
- 20+ heritage and archaeology sites
- Rock-cut caves
- Maritime heritage
- Great sons & daughters of Odisha soil
- Historical sites

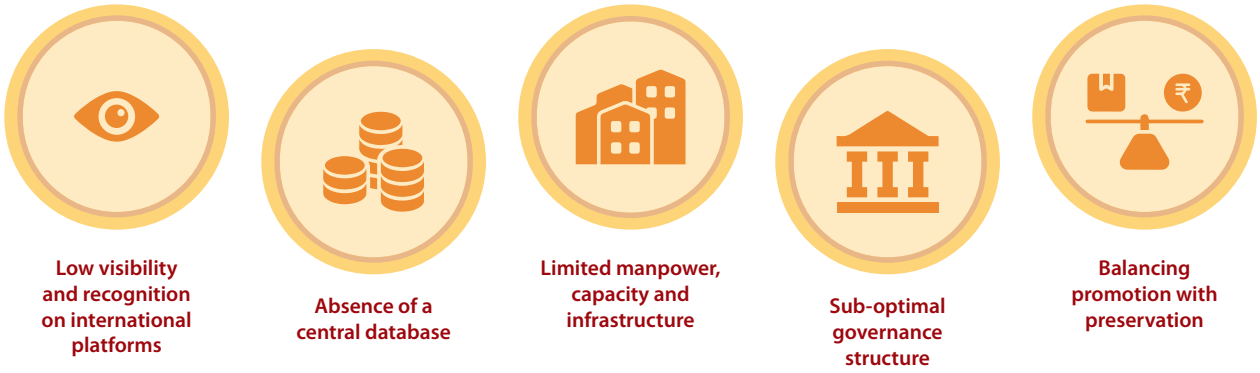
Cultural tapestry and food

- 1,000+ sacred temples
- 10+ local food specialities

1.1 Key challenges

Balancing preservation with modernisation, securing adequate funding, and ensuring timely execution are critical challenges in the sector, as detailed below:

EXHIBIT 7.2



- **Low visibility and recognition on international platforms** (e.g., need for UNESCO tag for Bali Jatra)
- **Absence of a central database** mapping unique cultural practices and heritage across the State (e.g., unique agricultural practice by tribals)
- **Limited manpower, capacity and infrastructure** (e.g., land) due to historically low allocation of resources, including limited access to technical or subject specialists
- **Sub-optimal governance structure**: Mandate to preserve, promote and propagate culture and heritage is split across departments (Odia Language Literature & Culture, Tourism, Handlooms, Textiles & Handicrafts, and Industries)
- **Balancing commercial promotion** of heritage sites with ecological and cultural conservation

1.2 Key trends

In recent years, the landscape of cultural tourism and heritage conservation has undergone significant transformation, driven by evolving consumer preferences and technological advancements. Key trends shaping the industry are given below, highlighting how these developments are fostering a deeper appreciation for local traditions, arts, and heritage:

- **Boom in cultural tourism**: Tourism experiences that highlight local traditions, art, and heritage are growing in popularity. For example, homestays rank as the third-highest provider of tourist accommodation rooms in Kerala now - with 1,600 such units operating across the State1

[2] 'Homestays and Kerala Abkari Policy 2023-24', Centre for Public Policy Research (CPPR)

- **Immersive experiences**: Interactive and immersive tours are on the rise, revolutionising the way people experience and engage with cultural and historical sites. These tours go beyond traditional sightseeing by incorporating advanced technologies such as augmented reality (AR), virtual reality (VR), and interactive exhibits that allow visitors to actively participate in the storytelling process. For example, the Red Fort in India has launched a new light and sound show named 'Jai Hind', which presents the country's history since the 17th century[2]
- **Revival of regional literature and handicrafts through digital platforms**: Digital platforms are boosting regional arts and crafts, providing artisans, weavers and writers with unprecedented access to global markets. For example, Sahitya Akademi's translations promote regional literature in digital formats, while e-marketplaces like Amazon India's Karigar programme and ONDC showcase local handicrafts
- **Diversification in handloom and handicrafts**: By blending traditional craftsmanship with modern design sensibilities, artisans are expanding beyond conventional textiles into categories such as apparel, home decor, and accessories. This not only enhances market appeal but also provides artisans with access to broader, more sustainable income streams. This shift is driven by growing consumer demand for culturally rich, sustainable products and increasing Government support for craft-based livelihoods
- **Sustainable heritage conservation**: Eco-friendly practices are becoming essential in preserving heritage sites with minimal environmental impact. This includes promoting the use of local materials and traditional construction methods and engaging local communities in the preservation process, etc.
- **Digital preservation for heritage promotion**: Digital archives, such as the Indian National Digital Library, and storytelling platforms for oral histories, and folklores, etc, are promoting heritage on a large-scale through podcasts and videos, etc.
- **Fusion cultural festivals**: Festivals merging local traditions with global culture foster cross-cultural exchange, like the Ziro Music Festival, which combines traditional Arunachal folk music with contemporary global sounds and attracts more than 10,000 people every year[3]

2 Archaeological Survey of India
3 Ziro festival, Utsav India, Ministry of Tourism

2. Vision and outcomes

The State's policies, inspired by 'Odia Asmita'—which fosters Odia glory, pride, and self-identity—and guided by the 'Rule of three V's: Visible, Visual, Viral,' aim to align with global best practices. These initiatives will transform the State's rich cultural tapestry and heritage into a vibrant, dynamic force that both, preserves its glorious past and propels the economy toward a prosperous future.

EXHIBIT 7.3

VISION 2047

Preserve, promote, and enhance State's rich cultural heritage, ensuring sustainable development, integration with modern technology and global outreach

[1] Assuming 25% of tourism and 15-20% of textiles GSVA is credited to the sector

The State plans to implement its Vision by establishing clear and measurable outcomes:

EXHIBIT 7.4

Key outcomes	Unit	Current	2029	2036	2047
Revenue from culture and heritage related products and services[2]	Multiple on current base	1x	2x	5x	10x
UN recognised global tangible heritage sites[3]	Number	1	5	8	15
UN recognised global intangible heritage[4]	Number	0	2	5	7
Globally and nationally recognised artists	Incremental numbers	–	10+	50+	100+

[1] Calculated as 25% of tourism and 15-20% of textiles GSVA; world average (3.1%), USA (4.4%), India 2021 (<0.5%), 2047 target (>5%)
[2] Incl. arts, handlooms, handicrafts, and information and broadcasting (e.g., heritage walks, film shoots)
[3] India (total) – 42, China – 56, Italy – 52
[4] India (total) – 15, China – 42, Spain – 25

Source: Odisha Economic Survey Report 2023-24, UNESCO World Heritage List Statistics, 2023; Bureau of Economic Analysis, US 2021; UNESCO Creative Cities Network, 2023

3. Key initiatives

The State plans to launch five key initiatives to achieve its Vision. These initiatives will focus on building robust infrastructure, enhancing digital access to cultural assets, supporting artists, artisans and craftsmen, and promoting Odia Asmita at the global platform:

EXHIBIT 7.5

3

Digitise Odisha's cultural assets, attracting minimum five lakh annual visitors

4

Build a year-round calendar of global and national events contributing to 10% of State's total tourist footfall

2

Enhance cultural tourism by renovating existing sites and developing new attractions

5

Preserve and promote local language, culture and heritage for future generations

1

Expand culture and heritage-based economy to contribute to 2.5% of the State GSVA[1]

6

Ensure a robust governance and financing mechanism

[1] Calculated as 25% of tourism and 15-20% of textiles GSVA

3.1 Expand culture and heritage-based economy to contribute to 2.5% of the State GSVA

3.1.1 Artist upskilling for local and global opportunities

- **Conduct a demand assessment to identify the need for skilled artisans and expand training programmes to bridge skilling gaps**. For example,
  - Introduce a programme to upskill and promote local sculptors for building new and maintaining existing temple architecture around the world
  - Develop comprehensive training programmes for handloom weavers that preserve traditional textile patterns while equipping artisans to integrate modern designs, ensuring their craft remains authentic, relevant, and appealing to diverse audiences
- **Upgrade the infrastructure of institutions related to culture and heritage**, to ensure they meet contemporary standards for effective education, training, and professional development. This will support ongoing research and innovation in the field, fostering a new generation of skilled artisans, curators, and cultural managers
- **Develop a portal to connect companies with skilled artisans** for recruitment while simultaneously updating curricula in universities and skilling institutes to align with industry needs
- **Partner with prominent institutions** like National School of Drama (NSD), Film and Television Institute of India (FTII), National Institute of Fashion Technology (NIFT), and National Institute of Design (NID), etc. for research, training, and exposure visits for skill upgradation of artists. For example, to equip the handloom workers in blending of products using alternate yarn sources like bamboo, banana, and pineapple, etc.
- **Establish 'Raw material bank' and 'Design bank'** for the weaver and artisan communities
- **Establish Regional Craft-based training institute** as a Centre of Excellence in the model of the State Institute for Development of Art & Craft (SIDAC)
- **Strengthen State Agency for Development of Handloom Clusters (SADHAC)** as a handloom design and marketing hub of excellence and promote Odisha Silk through integrated process and research

3.1.2 Position Odisha as a 'Preferred filming destination' at a national level by 2036 and international level by 2047

- **Formulate a 'Odisha Film Development and Promotion Policy' to boost the Odia local film economy and film tourism by leveraging the region's unique cultural and natural assets**:
  - Provide financial incentives such as tax breaks, grants, and subsidies to encourage local and national filmmakers to produce films in Odisha and to attract movie producers, targeting at least 10 films annually at Odisha's heritage sites
  - Invest in state-of-the-art studios, post-production facilities, and film-friendly locations to attract both local and international productions
  - Establish training centres and workshops to develop local talent in various aspects of filmmaking

- Facilitate the marketing and distribution of Odia films through festivals, online platforms, and international collaborations to reach a wider audience
- Encourage MSMEs to provide support services for the filmmaking value chain. For example, provide equipment on lease, and recruitment of junior artists, etc.

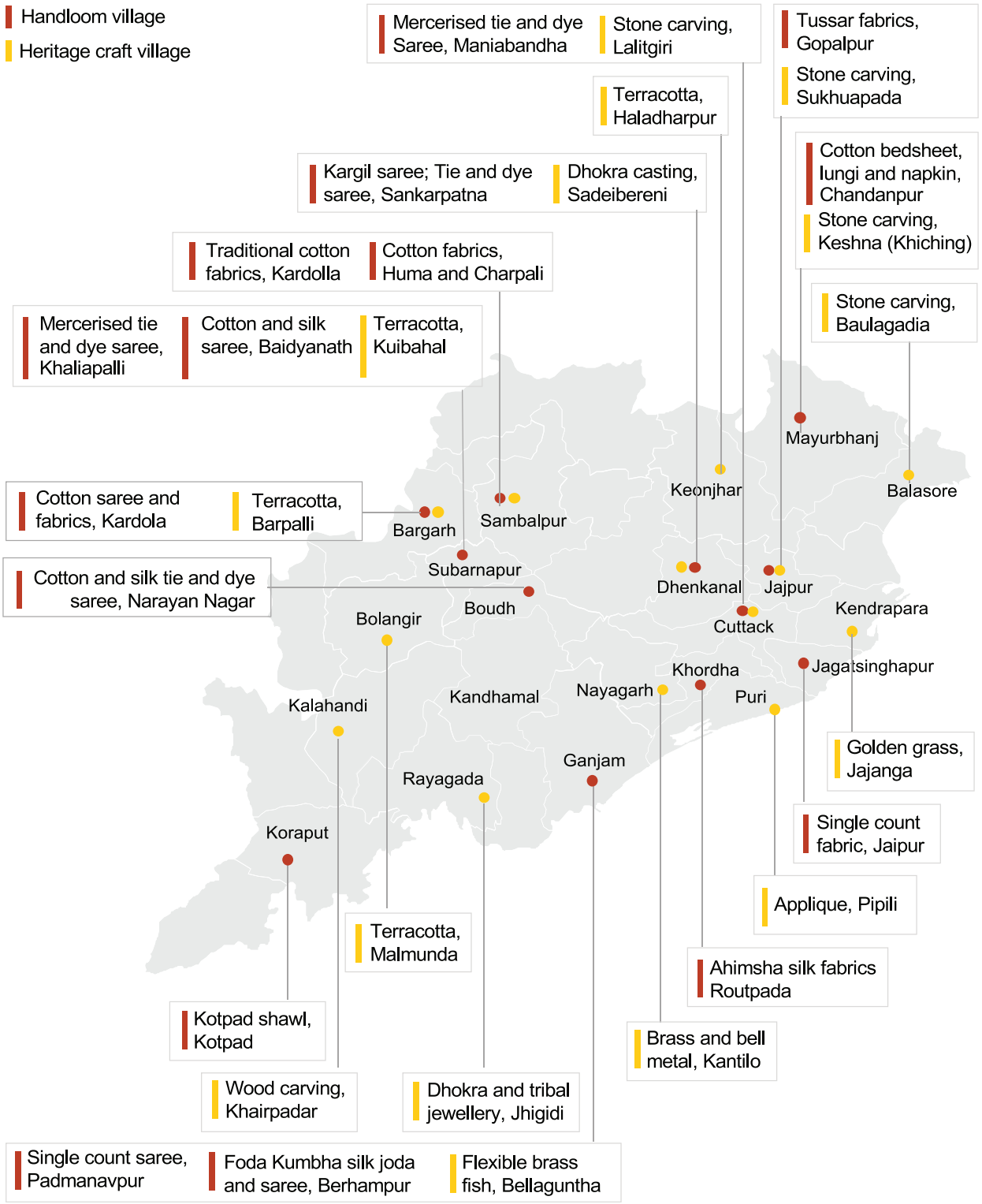
- **Revamp 'Odisha Film Development Corporation' and 'Kalinga studio'**:
  - Host film festivals and promoting local films nationally and internationally
  - Commission world-class documentaries and films on Odia history and culture
  - Develop modern infrastructure and upgrading equipment to attract high-quality film productions
  - Open the studios to tourists with guided tours, showcasing Odisha's cinematic heritage and generating additional revenue.
  - Eventually transform these entities into financially sustainable hubs by renting facilities and shooting sites to filmmakers
- **Revive and expand the local film economy**:
  - Subsidise film exhibition by constructing small, affordable cinema houses at the block-level, enhancing accessibility for all audiences
  - Partner with corporate investors to co-finance the development of these cinema houses and ensure their operational sustainability
  - Promote regional film content to strengthen local culture and create demand for Odisha-based productions
  - Develop a state-of-the-art film archive to celebrate landmark films and film personalities

3.1.3 Heritage-based infrastructure to preserve and promote Odia Asmita:

- **Plan and establish at least five 'Asmita Bhavans'** at State and national level and more than 50 'Sanskruti Bhavans' at sub-divisional level to showcase Odia culture and promote local food, handloom, arts, dance, and handicrafts, etc.
  - Expand to other cities (such as Bangalore, Kolkata, Delhi, Mumbai and Surat, etc.) and countries with strong Odia diaspora
  - Create a new brand SRUJANIKA for the prducts of handicraft clusters
- **Establish a network of 'Asmita Experience Centres' at strategic locations within Odisha,** major metropolitan cities in India, and selected international markets. These Centres will function as retail and cultural showcases for Odisha's handlooms and crafts, offering immersive buyer experiences, live demonstrations, and curated exhibitions. The initiative will be implemented through a public-private partnership model under the umbrella of the State Artisan Mission
- **Build 30 model arts, craft and handloom villages across all districts**. Each village shall serve as an integrated ecosystem encompassing production clusters, artisan residences, co-creation centres, training spaces, and direct-to-consumer retail units. These will also be developed as cultural tourism hubs, supporting heritage preservation and income generation." (Illustrated in Exhibit 7.6)

EXHIBIT 7.6

Illustrative list of 15 handloom and 15 craft villages



3.1.4 Create a unified marketplace for local art, craft, and handlooms through public-private partnerships

- Establish a world-class incubation and innovation hub for MSMEs and startups in the sector
- Enable collaboration with top artists, sculptors, handicraft artisans to help expand in multi-model retail with online and offline presence
- Target INR 4500 crore in annual revenues for premier art and craft hubs such as Boyanika and Utkalika by expanding their physical presence, enabling participation in global exhibitions, and enhancing their digital and export capabilities. This includes integration with government e-marketplaces and national platforms like ONDC, Amazon Karigar, and Flipkart Samarth
- Double revenue from exports by involving Handloom Export Promotion Council (HEPC), ensuring 'Made in Odisha' tag is placed on all locally produced goods
- Strengthen credit facilities and financial support programmes for artisans, including subsidies for raw materials for handloom and handicraft products, and interest subvention, etc.
- Implement a structured income augmentation programme for weavers and artisans, targeting a two to three-fold increase in average earnings by 2036. The programme shall include design diversification, disintermediation of sales channels, adoption of digital marketing and e-commerce tools, and facilitation of access to export registration and market intelligence

3.2 Enhance cultural tourism by renovating existing sites and developing new attractions

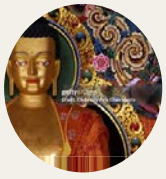
3.2.1 Develop 'Model museums' with technological integration for an immersive experience to bring Odisha's rich heritage to life, aligning with global trends in experiential learning. These spaces will be built with latest technology like augmented reality (AR) and virtual reality (VR) with exciting visuals from the past and multilingual commentary, making the visits interactive and in line with the global best practices:

EXHIBIT 7.7

Potential 'Model museums'

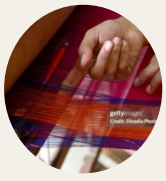
'1,000 years of Odia heritage' museum, Puri integrating various aspects of Lord Jagannath culture under one roof

Maritime museum upradation through partnerships with international bodies to enhance global narratives

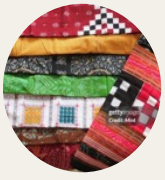


Buddhist history museum to record and showcase Odisha's rich Buddhist traditions

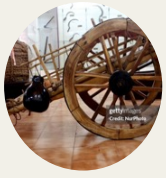
Palm leaf museum that sheds light on the administrative, socio-cultural and economic facets of ancient Odisha



Three handloom museums across Bargarh, Kotpad and Jajpur ('Karuna silk')



Textile museum showcasing the history of Odia textiles, including a digital bank preserving prominent local designs



Other museums like the 'Dolls Museum', Museum at Puri depicting the 'Deities and the Temple Rituals', 'Craft museums' like Kala Bhoomi, etc.

Shree Jagannath Museum and Interpretation Centre

3.2.2 Celebrate historically important events and persons

- Create a task force of historians to **identify, research, and document historically significant events and figures in Odisha** and develop detailed narratives and educational materials to promote them
- **Transform historical sites into premier tourist landmarks by**:
  - Conducting comprehensive site assessments to identify potential for tourism development
  - Collaborating with architects and designers to create engaging and informative visitor experiences. For example, integrating multi-lingual audio-visual guides, digital libraries and cutting-edge technology such as augmented reality (AR) and virtual reality (VR)
  - Revamping existing memorials to integrated complexes featuring exhibits, photographs, and narratives of the history and/ or cultural significance
  - Implementing preservation and restoration projects to maintain the integrity of historical sites
  - Designating Baraputra, Arts & Crafts, and freedom struggle villages as 'Heritage villages' and developing them into tourist desitinations
- Some of the historical sites that the State will take up include:

EXHIBIT 7.8

Illustrative historical sites

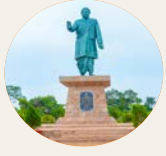
Paika Memorial in the context of 1817 uprising

Satyabadi Bana Vidyalaya (revive) to re-introduce nature-based learning

Buxi Jagabandhu Statue at Barunei

Other memorials for the 'Great sons of Odisha': Baji Rout, Madho Singh, Laxman Nayak, Veer Surendra Sai, and others

Eram Memorial (revamp) to honor the 1942 massacre



10-12 statues of at least 40 ft, e.g., at the birth places of other prominent 'Baraputras' and freedom fighters

3.2.3 Link all major heritage and cultural sites to popular tourist destinations, and ensure global recognition

- Constitute a task force to identify and apply for global recognition for over 20 tangible and intangible heritage assets – e.g., Bali Jatra as a UNESCO intangible heritage
- Popularise the existing 15 GI tags by conceptualising a special logo 'Treasures of incredible Odisha' and launching dedicated efforts to bring 15 more handicraft and three more handloom products under the GI fold
- Enhance collaboration between Archaeological Survey of India (ASI) and State Archaeology to foster efficient preservation, documentation, and promotion of cultural heritage sites
- Facilitate handicraft artists to apply for 'Green mark' to promote local products globally for their sustainable production methods

3.2.4 Promote local community development

- Launch certificate courses to train local communities to act as certified cultural guides, anchors, and comperes to accurately convey the historical significance at prominent cultural and heritage sites and events
- Publish multi-lingual brochures to ensure that the correct narrative of the heritage site is presented
- Provide financial support to establish world-class amenities in at least 50 heritage sites initially, including cafe, souvenir shops, parking, and restrooms, etc.
- Open souvenir shops, bookstores and Government outlets (such as, women SHG brands, Boyanika, Sambalpuri Bastralaya, and Utkalika, etc.) at all major airports, railway stations and tourist spots

3.3 Digitise Odisha's cultural assets, attracting minimum five lakh annual visitors

Develop the one-stop digital platform through public-private partnership, encompassing Odisha's history, mythology, architecture, and bibliography of freedom fighters, etc.:

3.3.1 Create a comprehensive digital strategy on the principles of 'Discover-document-preserve-digitise' as outlined by the Central Government scheme of National Mission on Manuscripts

3.3.2 Launch a digital archive and e-book portal showcasing and promotion Odia literature

- Launch a multi-lingual e-book portal and digital maps offering comprehensive resources and information on local arts, culture, and heritage.

3.3.3 Conduct digital mapping and archiving of cultural practices and artworks (e.g., digitisation of Sishu Sangeeta – children's traditional songs - integrating use of indigenous art and crafts like puppets)

- Ensure digitised manuscripts, books, and texts are available through a centralised mobile application on the app stores (both iOS and Android) and as e-books or audiobooks on platforms like Kindle
- Transform the platform into a revenue source using a pay-per-download model and include these resources in the school curriculum for children

3.3.4 Conduct detailed videography of all museums and key heritage and archaeological sites to launch AR/ VR view and digital walk-through on the platform, and non-fungible tokens[1], etc.

3.3.5 Develop an integrated temple management system with digital documentation of 25 prominent temples initially, expanding to at least 100 temples eventually. The system would cover insights into the temples' history and legends, rituals and festivals, booking options, and donation facilities

3.3.6 Launch a digital marketplace for handlooms, and handicrafts, integrated with the Asmita Experience Centre network. This platform shall offer immersive product storytelling, verified artisan profiles, virtual storefronts, and export-ready features such as multi-currency payment support, fulfilment tracking, and integration with international shipping partners.

3.3.7 Integrate the site with social media platforms for scaled promotion and digital marketing

3.4 Build a year-round calendar of global and national events contributing to 10% of State's total tourist footfall

3.4.1 Develop a comprehensive calendar of over 12 global and national-level events every year (illustrative list in Exhibit 7.9)

- Scale up existing festivals to global eminence, with world-class facilities and transformative experiences that showcase Odisha's rich culture and traditions, drawing visitors from around the world
- Launch new events that spotlight Odisha at a global and national scale, creating platforms that elevate local talent and foster cultural exchange, while celebrating the State's unique legacy
- Adopt a structured process to regularly engage with global Odia community by framing and launching the 'Overseas Prabasi Odisha Policy'

EXHIBIT 7.9

Illustrative list of festivals and events to scale or launch at a global level

Elevate Bali Jatra, Rath Yatra, and Dhanu Yatra as global landmark festivals

Restore the glory of Khandagiri mela with proper sanctity

Organise Prabasi Odia Divas as annual, global, mega event

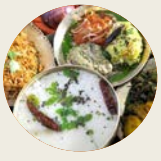
Cultural festivals to celebrate local artforms (e.g., Odissi dance and music), and religion diversity

Tribal festivals featuring tribal fashion (e.g., traditional face tattoos, and piercings), sports, and other cultural traditions

Buddhist festival to promote Odisha's rich Buddhist traditions

Literature festival and Sanskruti Charcha to give prominence to indigenous, literary work

Theatre festival to give artists a platform for propagation of Odia culture and theatrics



Food festivals and tours to introduce the taste of Odia culture to the world

[1] unique digital certificate that represents ownership of a digital or physical asset

3.4.2 Ensure high visibility for the platform through targeted promotions

- Integrate online registration and promotion of all festivals and events on the single digital platform, enabling wider reach and participation from Indian and global audiences
- Partner with international cultural organisations and tourism boards to co-host and promote key events and festivals, enhancing Odisha's visibility on global platforms
- Onboard one or more brand ambassadors and sponsors to ensure collaborative concerts and performances with the best local and global artists and musicians
- Implement outreach programmes in educational institutes to enhance youth engagement in cultural events and festivals, fostering a sense of pride and participation in local culture and traditions

3.5 Preserve and promote local language, culture and heritage for future generations

3.5.1 Heritage conservation and cultural preservation

- Formulate the 'Odisha Heritage Policy' including:
  - Developing a database and roadmap for artifact collection and recovery, and site restoration
  - Funding research and revival of ancient rivers, like the Prachi River, to map their mythological presence
- Preserve, promote, and revive dying art and languishing weaver and crafts including inter-alia,
  - Establishing training centres in relevant districts
  - Highlighting these art forms on special occasions such as Independence Day, Republic Day, Utkal Divas, and on key festivals including Dhanu Yatra, Thakurani Yatra, Nuakhai, Rath Yatra, and Dola or Kartika Purnima

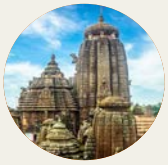
3.5.2 Institutions of academic excellence, educating over one lakh students per year

- Scale up 'University of Culture' to global eminence and ensure homogeneity in culture-related subjects such as archaeology, heritage, performing arts, and Kalinga architecture, etc.
- Establish and revamp state-of-the-art institutions to promote education and research on topics of prominence for Odisha, as shown below:

EXHIBIT 7.10

Illustrative institutions of excellence

School of Buddhist Studies at Utkal University of Culture with exchange programmes (e.g., with Japan, Indonesia)

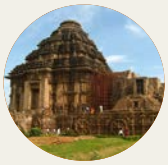


Kalinga School of Sculpture and Temple Architecture to cultivate highly skilled professionals to work in temples across the globe

Lalit Kala Akademi (scale) to achieve global eminence for folk and tribal arts (including near extinct art forms)

Adivasi Dance Institute and Musical Academy (ADIMA) to celebrate and promote the rich indigenous heritage of tribal performing arts

Dedicated CoE for culture and heritage-related research tagged to local institutes with global partnerships



World-class courses on Odisha's heritage with experts; Introduce through online and offline media

Other state-of-the-art institutes
Adivasi Swabhiman University for tribal culture and language, Art Research Centre, Translation Academy with Advanced Language Lab, and Maritime Archaeology Centre and Laboratory

3.5.3 Cultural promotion at national and global scale

- Scale up the 'Cultural ambassadors' programme' for funding local troupes in at least five national and international tours per art-form per year
- Establish 'Odisha Centre for Cultural Relations', like Indian Council for Cultural Relations (ICCR) to co-ordinate events with other States, Eastern Zonal Cultural Centre (EZCC) and Central Sangeet Natak Academy (CSNA)
- Constitute an 'Odia Bhasa' task force to preserve and promote Odia language at a national and global scale

EXHIBIT 7.11

Illustrative initiatives to be taken up by the 'Bhasa' task force

Publish Odia encyclopaedia to ensure preservation of local language and grammar

Engage with online platforms like Google to improve digital accessibility and ensure accuracy in Odia translations

Publish biographies of more than 15 tribal legends like Rendo Majhi, and Chakara Bisoyi, etc.

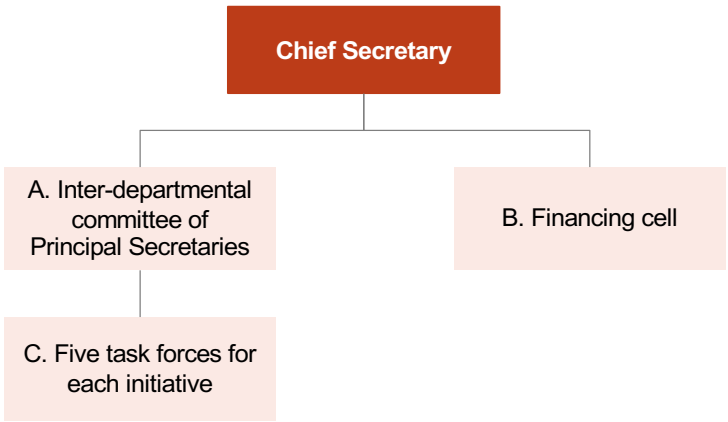
Fast-track translation of over 20 local epics (e.g., Odia works on Mahabharata, Bhagabata, Ramayana, and Laxmi Purana, etc.) and ancient manuscripts in multiple languages

3.6 Ensure a robust governance and financing mechanism

To execute these initiatives seamlessly, ensuring a structured process and ownership from all stakeholders, the State plans to establish a governance and financing mechanism under the Chief Secretary:

EXHIBIT 7.12

Illustrative structure



Key departments

- Odia Language Literature and Culture (Chair)
- Handlooms, Textiles, and Handicrafts
- Tourism
- Industries
- MSME
- Mission Shakti
- Skill Development and Technical Education
- ST & SC Development, Minorities and Backward Classes Welfare
- Any other relevant departments

Roles and responsibilities

A. Inter-departmental committee of Principal Secretaries (PMU)	B. Financing cell	C. Task force for each of the five initiatives
• **Develop a comprehensive roadmap for the sector**, aligned with Vision 2047, including both short- and long-term objectives across key initiatives • **Identify and define key projects**, ensuring integration with relevant departments for cohesive implementation • **Set key performance indicators** (KPI), conduct regular reviews, and address implementation challenges to track progress toward the State-level goals • **Form an advisory panel** of industry experts and scholars to fine-tune strategies and foster their collaboration with the Government	• **Prepare detailed budgets**, monitor expenditures, and ensure transparent financial planning and reporting • **Apply for central funds and establish partnerships** with NGOs, global funds, and CSR initiatives to secure sustainable financial support • **Develop revenue-generating strategies** for cultural assets, aiming for 50% financial independence by 2036 and 80% by 2047	• **Break down initiatives into specific projects**, prioritise based on resource availability, and align with Vision 2047 • **Execute projects** by collaborating with NGOs and local communities for on-ground implmentation • **Implement regular monitoring** to provide updates to the inter-departmental committee and the Chief Secretary, ensuring transparency • **Actively communicate** with artists, cultural organisations, and community leaders, incorporating feedback into project planning

CHAPTER 8

WOMEN-LED GROWTH: POWERING ODISHA'S PROGRESS THROUGH SUBHADRA AND LAKHPATI DIDI

Summary

Empowering women through increased participation at all levels and in all sectors facilitates inclusive economic growth and societal development. Greater focus on women's health, education, security, and livelihood, especially in rural areas, helps foster prosperity and well-being for all. It positively influences the holistic development of their children – the future of Odisha. **Women-led development is, therefore, a key pillar of the State's journey towards a Viksit Odisha.**

To achieve this goal, the State has launched a transformative initiative for women's empowerment – 'SUBHADRA' – for more than one crore women, by providing financial support, encouraging digital financial literacy, and fostering personal and professional growth. **Building on SUBHADRA, Odisha is committed to 'creating economic opportunities, promoting positive discrimination, ensuring safety and freedom of choice, while fostering diverse leadership at all levels' for its women.**

By 2047, the State envisions the following outcomes

- Be among the top three Indian states in performance on SDG index 5: Gender equality
- Create an enabling environment for working women to increase female labour force participation rate to at least 70%
- Increase livelihood opportunities for Women Self-Help Groups (SHG)
- Enhance safety and security measures, especially for vulnerable and marginalised women

Key initiatives to achieve the outcomes

To achieve these outcomes, several initiatives have been proposed in previous chapters (Quality education, World-class higher education, Skilled in Odisha, Skilling for the World, Healthy Odisha, Logistics, infrastructure connectivity and Service sector expansion, etc.), summarised later in this chapter. Apart from these, the State will give additional emphasis on the following areas:

Ensure safety and security through creation of infrastructure such as dedicated 'Pink zones', prompt assistance for emergencies, and prevention of cyber-bullying and fraud, etc.

Increase female participation in the formal economy through an enabling environment that includes building creches, sanitation facilities, digital platform for jobs, and ensuring gender pay parity, viability gap funding for skilling initiatives, and gender badges for inclusive workspaces, etc.

Improve livelihood for women by enhancing share of women-led MSMEs and upscaling the ongoing SHG programme through end-to-end support– including branding, market-linkage, production expansion, product diversification, and mentorship

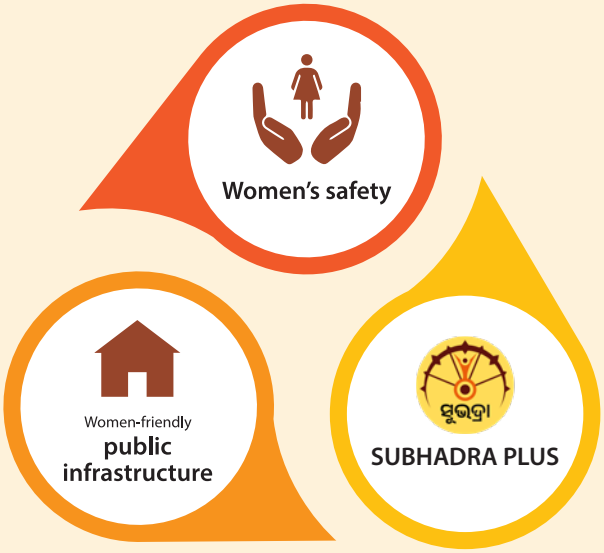
Empower vulnerable women and adolescents by generating awareness about rights and support mechanisms such as strengthening of legal and counselling services, establishing a robust rehabilitation ecosystem, and executing a vibrant social and behavioural change communication strategy for all

Strengthen existing institutional mechanisms to fulfill the Vision of the State by revamping the current Integrated Child Development Scheme (ICDS) structure, strengthening the State Institute for Women and Children (SIWC), building dedicated centres for evidence-based research and action on women-led development, etc.

Over the next 24 months, the State will

- **Scale up SUBHADRA as an umbrella scheme** for women's empowerment and expand women SHG-owned brands (café, bazaar and mela)
- **Launch the 'Odisha Pushti Mission'** to improve overall well-being of women and children
- **Develop a policy framework and roll out pilot projects for**:

EXHIBIT 8.1



  - **Women's safety**, including distress signal system integrated with emergency services in Bhubaneswar and Cuttack, enhancing accessibility through local community networks, helplines, and mobile panic buttons at key hotspots such as workplaces and transportation hubs
  - **Women-friendly public infrastructure** in high-traffic areas, starting with dedicated toilets for women and breast-feeding rooms
  - **SUBHADRA PLUS** will be scaled up to empower women-led enterprises by turning local businesses into national brands in food processing, textiles, wellness, and handicrafts. The initiative will provide support through incubation, packaging and branding assistance, e-commerce platforms, and institutional procurement.
- **Launch gender badges** to ensure affirmation for women in workplaces; promote positive discrimination in educational institutions
- **Strengthen the State Institute for Women and Children and establish a 'Centre for Women's Empowerment'** as a think-and-do-tank for ensuring evidence-based policy development and advocacy, promoting inter-departmental collaboration, facilitating capacity-building for State functionaries, and publishing an annual women's empowerment report (in collaboration with institutes of repute)
- **Operationalise an integrated command-and-response-centre** with helplines and an interoperable dashboard to monitor data from multiple schemes and helplines

1. Context

Odisha's two crore females represent nearly half of the State's population. Women contribute immensely to the State's governance, corporate sector, traditional arts and crafts, and small-scale enterprises. However, the State faces critical challenges such as lower female labour force participation rate (LFPR)[1], wage disparities, socio-cultural restrictions and limited access to formal economic opportunities.

As Odisha aspires to become a USD 1.5 trillion economy, prioritising the overall development of women is not just a matter of equity but also a strategic imperative to accelerate inclusive growth, enhance social resilience, and improve key human development indicators.

Some of the Government initiatives that have delivered significant impact include the following:

EXHIBIT 8.2

Category	Scheme/ Act/ Programme	Salient features and impact
Women safety	Shakti Sadan	68 centres across all districts providing temporary shelter, counselling, and rehabilitation for women in distress, and supporting their re-integration with dignity
	One Stop Centre	Provides integrated support for women affected by violence, including medical, legal, and psychological services, benefiting more than 22,000 survivors since 2015
	Women's helpline	Offers 24x7 toll-free assistance, providing emergency response, legal aid, and rehabilitation services
	Help desks	Women and child help desks are established in police stations, railway stations and bus stands
Women participation in formal economy	Sakhi Niwas	Safe accommodation with daycare facilities enabling women to pursue employment opportunities
	Menstrual leave policy	Allows women employees a paid day-off each month during menstruation, promoting gender-sensitive workplaces
	Creches	Provides effective day-care for young children as a support system for mothers across the State
Livelihood	SUBHADRA	Flagship scheme of the State designed to drive transformative financial inclusion for women. Under this initiative, more than one crore women aged 21 to 60 will receive a financial benefit transfer of INR 50,000 over five years through Direct Benefit Transfer (DBT) and Central Bank Digital Currency (CBDC)
	Women SHGs	Empowers 70 lakh women through six lakh SHGs, offering credit, skill development, and entrepreneurship support

[1] Labor Force Participation Rate

Category	Scheme/ Act/ Programme	Salient features and impact
Institutional support	Supplementary Nutrition Programme, POSHAN 2.0 and Scheme for Adolescent Girls	Provides nutritional support to children under six years, pregnant women and lactating mothers, and adolescent girls; addressing malnutrition and improving health outcomes
	Mukhyamantri Sampoorna Pushti Yojana	A flagship initiative of the State that focuses on addressing malnutrition among women, adolescent girls and children complementing existing nutritional schemes by provisioning additional nutrition entitlements
	MAMATA-PMMVY[1]	Conditional cash transfer scheme aimed at promoting maternal and child health among pregnant and lactating women. The scheme provides INR 12,000 for the birth of a girl child and INR 10,000 for the birth of a boy child, supporting better nutrition, regular health check-ups, and early childhood development.
	State Institute for Women and Children (SIWC)	Since 2023-24, SIWC is being developed as a 'Centre of Excellence' with a number of MoUs[2] executed with Government institutes, and international agencies, etc. for strengthening capacity-building initiatives of Department of Women and Child Development
Women rights	ADVIKA	Empowers adolescents with life-skills education to reduce vulnerabilities like early marriage and school dropout
	The Prohibition of Child Marriage Act	Prevents child marriages and provides support to survivors through robust legal and community frameworks
	The POSH[3] Act	Ensures a safe workplace for women by mandating Internal Complaints Committees (ICC) and providing a framework for addressing complaints
	The POCSO[4] Act	Protects children from abuse with child-friendly reporting, investigation, and financial aid for rehabilitation

The aforementioned efforts of the State have not only uplifted the status of women and children but have also catalysed broader socio-economic development. While the State has performed well across many indicators, in comparison to other Indian States, the Government of Odisha has identified specific areas for focus and improvement, as illustrated in Exhibit 8.3.

The State will continue its mission of promoting women-led development and unlocking their full potential, as part of its efforts toward the realisation of a Viksit Odisha by 2047.

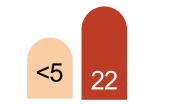
[1] Pradhan Mantri Matru Vandana Yojana
[2] Memorandum of Understanding
[3] Prevention of Sexual Harassment Act, 2013
[4] Protection of Children from Sexual Offences Act, 2012

EXHIBIT 8.3

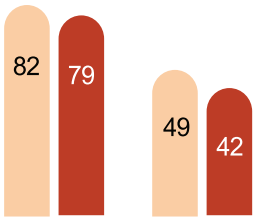
Odisha India

Key metrics tracked by the department

01
MSME owned/ led by women, (percent)

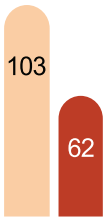


02
Labour force participation aged 15+ years, (percent)



03
Average wages/ salaries, (Female to male ratio)

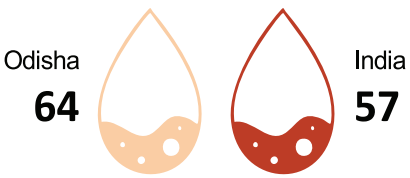
04
Crime against women
(Number of crimes reported per one lakh women)

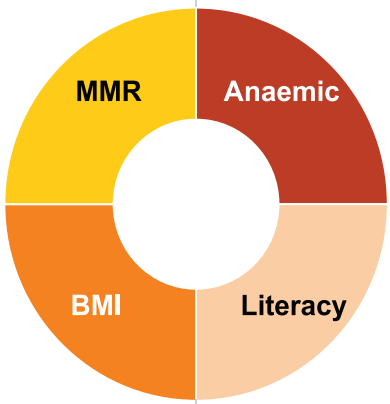


Other critical cross-sectoral challenges[1]

Maternal deaths, (per one lakh live births)

Anaemic women aged 15-49 years, (percent)





Women aged 15-49 years with low BMI, (percent)

Female literacy for women aged 7+ years, (percent)

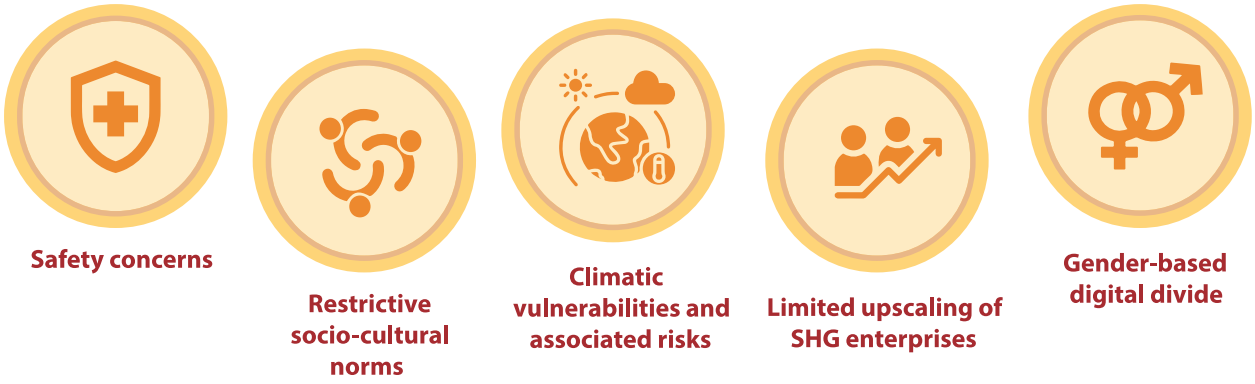
[1] Covered in other chapters

Source: National Statistical Office (NSO), Ministry of Statistics & Programme Implementation (MoSPI), Government of India; National Family Health Survey - 5 (NFHS-5), Ministry of Health and Family Welfare, Government of India

1.1 Key challenges

The State has identified challenges in women's empowerment that need addressing on a priority basis. These include the following:

EXHIBIT 8.4



- **Safety concerns**: Despite significant improvement, women's safety remains a major challenge, with over 15,000 cases of rape reported during 2019-21 and many instances of domestic violence going unreported
- **Restrictive socio-cultural norms**: Many families resist allowing women to work or study outside their villages due to safety concerns and cultural restrictions. Women who have migrated for better opportunities outside the State, are often unwilling to come back due to these restrictions
- **Climatic vulnerabilities and associated risks**: Odisha is highly susceptible to natural disasters, including cyclones, floods, and droughts. These events lead to displacement, resource insecurity, and livelihood loss – often impacting women more. The State's coastal regions are particularly vulnerable, with frequent cyclones causing significant damage to infrastructure and agriculture, thereby affecting the livelihoods of many communities
- **Limited upscaling of SHG enterprises**: While SHG have provided women with access to credit and entrepreneurial opportunities, many SHG-led businesses struggle to scale up due to poor market linkages, small production quantities, and insufficient training in skills such as communication, leadership, and financial management etc.
- **Gender-based digital divide**: In Odisha, the digital divide between men and women remains significant. According to NHFS-5, only 25% of women have ever used internet against 51% men. This disparity limits women's access to information, education, and economic opportunities, thus, exacerbating gender inequality

[5] Ministry of Home, Government of Odisha

1.2 Key trends

Women, across the globe, are emerging as key drivers of economic growth, innovation, and social change. Some of the key trends are as below:

EXHIBIT 8.5

Recognition of unpaid care work: Globally and in India, the economic significance of unpaid care work is gaining attention. Indian women perform 10 times more unpaid care work than men, valued at USD 300 billion annually if included in GDP[1]

Digital inclusion: Only 38% of women in India own mobile phones, compared with 71% of men[2]. Programmes like Digital India Mission aim to empower women through technology. The Pradhan Mantri Gramin Digital Saksharta Abhiyan has trained lakhs of rural women in digital literacy, enhancing their ability to access essential services. Odisha's SUBHADRA aims to reward women with the highest number of digital transactions in each Gram Panchayat and Urban Local Body

Skilling for economic participation: Programmes, such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), have trained over 8 lakh women[3] in FY 2021-22 in sectors like healthcare, textiles, and retail. Additionally, women are breaking the glass ceiling in several male-dominated sectors like armed forces, logistics and transportation, mining and assembly line manufacturing

Emergence of women in gig economy: Women make up 33% of the gig workforce in India[4], with many using these platforms to supplement family income or re-enter the workforce after a break, as these offer flexibility that aligns with their personal and family needs

Legislative framework for workforce participation: The Maternity Benefit (Amendment) Act 2017 offers 26 weeks of paid maternity leave, mandating crèche facilities[5] and 15 days paternity leave (only for Government employees), while the POSH Act enables safety and harassment protections and requires employers to provide safe transportation to women employees working night shifts

[1] 'India's care economy: Unlocking opportunities', Ministry of Women and Child Development, Government of India
[2] A Tough Call: Understanding barriers to and impacts of women's mobile phone adoption in India, Harvard CID Research Programs and Initiatives
[3] Ministry of Skill Development and Entrepreneurship, Government of India
[4] Report by Good Business Lab, 2021
[5] Ministry of Labour and Employment, Government of India

2. Vision and outcomes

Odisha envisages regional balanced development to bridge disparities, unlock untapped social and economic potential, and create opportunities for inclusive growth, especially for the marginalised groups such as women, tribals and those in distress.

EXHIBIT 8.6

VISION 2047

To empower women by creating economic opportunities, promoting positive discrimination, ensuring safety and freedom of choice, fostering diverse leadership and changing societal outlook through positive discrimination

EXHIBIT 8.7

To achieve this Vision, the State will monitor its performance across the following key parameters:

Theme	Key outcomes	Unit	Current	2029	2036	2047
Health	Maternal mortality ratio[1]	No. of maternal deaths per one lakh live births	119	<100	<50	<5
	Adolescent girls (15-19 years) who are anaemic[2]	%	65	<50	<30	<1
	All women (15-49 years) who are anaemic[3]	%	64	<50	<25	<5
	Institutional births[4]	%	89	>90	>99	>99
Education	Female literacy (>7 years)[5]	%	74	85	100	100
	Gender Parity Index (Primary, upper primary and secondary levels)	-	1	1	1	1
	Gender Parity Index (Higher education level)	-	0.88	0.95	1	1
Economic status	Female labour force participation rate (>15 years)[6]	%	49	54	60	70
	Women having mobile phone that they themselves use	%	50	65	80	>95
	Female to male ratio of average wages/ salaries received	-	0.8	0.9	1.0	1.0
	SHGs involved in non-farm activities	%	NA	25	33	>50
	Number of 'Lakhpati Didis' (More than INR 1 Lakh annual income of household)	Lakh	2.7	20	36	60
	Number of 'Millionaire Didis' (More than INR 10 Lakh annual income of household)	Lakh	0	2	5	10

[1] India – 97, Kerala – 19, Norway and Spain – 3, Japan and Germany – 4
[2] India – 19%
[3] India – 57%, Manipur and Nagaland – 29%
[4] Kerala – 100%
[5] India – 80%
[6] Himachal Pradesh – 63%, Chhattisgarh – 52%, Ethiopia – 75%, Vietnam – 68%

EXHIBIT 8.7 (continued)

Theme	Key outcomes	Unit	Current	2029	2036	2047
Leadership	MSMEs owned or led by women[7]	%	<5	15	33	50
Security	Married women (18-49 years) who have experienced spousal violence[8]	%	31	<15	<5	<1
	Rate of crimes against women[9]	No. of crimes reported per 1L women	103	<50	<20	<5
	Women (20-24 years) who were married before the age of 18 years	%	21	<10	<5	0

[7] India – 22%, Indonesia and Vietnam – 30%, USA and Canada – 40%
[8] India – 29%
[9] India – 59, Gujarat – 23, Tamil Nadu – 24
Sources: Odisha Economic Survey Report 2023-24, National Family Health Survey 5, Periodic Labour Force Survey

3. Key initiatives

To achieve these outcomes, several initiatives are outlined across various chapters of the Vision report:

EXHIBIT 8.8

Chapter	Initiatives
Quality education	Revamp school curriculum to ensure it is gender sensitive
	Sensitise adolescents and parents through institutional initiatives on issues such as child marriage, teenage pregnancy, the Protection of Children from Sexual Offences (POCSO) Act 2012, and the Prevention of Sexual Harassment (POSH) Act 2013, etc. through: ■ Specialised parent-teacher meetings ■ Weekly, outcome-linked sessions for students, with regular assessments
	SUBHADRA and opportunities for the growth and development of women will be taken up as a separate institutional initiative
	Enhance Samagra Shiksha Abhiyan to improve girls' school-enrollment and retention rates
	Rigorously track enrolment and dropout rates of girls in secondary and higher education to inform strategies to address barriers such as safety, distance, and economic constraints, reinforcing the importance of education in creating new SUBHADRAs; enable focused tracking of vulnerable girls in case of prolonged absence due to poor health, child marriage, etc.
	Establish fully equipped residential schools for girls in remote areas, addressing challenges of distance and safety
World-class higher education	Ensure 50% Gross Enrolment Ratio (GER) in tertiary education for all girls, including access to advanced higher education in science, technology, engineering, and mathematics (STEM)[1] courses
	Provide scholarships for girls to pursue STEM education in eminent national and international universities
	Achieve at least 30% placements for girls
	Mandate access to either girls hostels or network of safe residential spaces for girls in or around all higher education institutions
	Launch awareness programmes on women's rights such as POSH and provide self-defence training in educational institutions
	Integrate database of women entering higher education to track their progress and provide targeted interventions
Healthy Odisha	Launch 'Odisha Pushti Mission' to ensure the nutrition and health of all women
	Ensure anaemia eradication in women and adolescent girls
	Expand the existing health services focused on the prevention and reduction of breast cancer, cervical cancer and osteoporosis; launch a focused initiative to eliminate cervical cancer, including encouraging vaccination for girls in the age group of 9 to 14 years
Urbanisation as a growth engine	Ensure inclusive master planning and women-centric infrastructure in all cities
	Mandate CCTV installation and adequate coverage of street lighting in all high-traffic urban public areas to ensure near zero dark spots
	Expand the number of separate public toilets, breast-feeding rooms and creches for women in high-traffic locations

[1] Science, technology, engineering, and mathematics

EXHIBIT 8.8 (continued)

Chapter	Initiatives
Rural resurgence	Engage local communities in project planning and monitoring to ensure that public services meet women's needs (mobility, and sanitation, etc.)
	Actively involve women in leadership and decision-making roles at Gram Panchayat level
Logistics, infrastructure and connectivity	Encourage private sector to launch safe transport for women in and around industrial spaces
	Establish driving schools (Government-owned or through PPP) for women with employment-facilitation in State-owned and private bus services, and ride-hailing services, etc.
	Ensure 100% saturation of affordable and accessible transport, especially for low-income and adolescent women commuting for work or education
	Equip all transportation services with safety features such as CCTV surveillance, panic buttons, well-lit bus stops and trained personnel sensitive to women's safety concerns
	Increase the number of women drivers and conductors in public buses to increase safety, especially for women travelling at night
Skilled in Odisha, Skilling for the world	Mandate minimum 30% enrolment of women in all ITIs[2] and expand them in each district for sunrise sectors such as hospitality, electric vehicles operations and maintenance, and elder-care and associated services, etc.
	Provide scholarships for women to undergo vocational education
	Implement gender-sensitive curricula, pedagogy, and teacher training in all ITIs and Polytechnic institutions; commence mandatory courses on POSH
	Achieve 100% digital literacy for women and adolescents by 2036
	Integrate database of women entering ITIs to track their progress and provide targeted interventions
Revitalising agriculture	Improve gender equity in the sector with at least 50% farmland ownership by women
Startup Odisha	Announce sub-targets for women-led startups in Government procurement
Youthful Odisha	Launch additional women sportsperson-focused competitions to spot talent, and encourage greater participation of women in sports
Service sector expansion	Launch a policy on 'Gig economy' to ensure fair wages for gig and part-time workers; especially focusing on women
Disaster Management	Implement targeted disaster resilience programmes for women, including skill development in sustainable livelihoods, disaster management training, and access to resilient infrastructure. These measures aim to empower women to become key agents of change in building a disaster-resilient Odisha

[2] Institutional Training Institutes

In addition to these, the State will implement the following initiatives to enable women's empowerment:

EXHIBIT 8.9

3

Increase livelihood by scaling up 'SUBHADRA' as an umbrella brand for economic empowerment, providing end-to-end support for women entrepreneurs and women SHGs

2

Enhance women's participation in the formal economy by providing ecosystem support, including care infrastructure, skilling incentives and inclusive workplaces

4

Strengthen institutional support by revamping ICDS structure and SIWC by enhancing their capacity, and building new institutional mechanisms for dedicated research and monitoring, etc.

1

Improve women's safety and security by creating 'Pink zones' of 10 km radius as designated safe zones and strengthening the emergency response systems in high footfall public spaces

5

Boost access to women's rights by strengthening counselling and re-habilitation support and scale up awareness through 'Social Behaviour Change Communication', with a special focus on men

3.1 Women's safety and security

3.1.1 Develop 'Pink zones' of 10 km radius each, as designated safe zones for women in urban, semi-urban, and rural areas equipped with surveillance, help desks, and 24x7 monitoring to provide immediate assistance and shelter for women in distress. These zones will be co-located with essential services including police outposts, healthcare, and legal aid, etc.

- **Deploy CCTV cameras** at key public spaces and transit points and establish a centralised monitoring system for real-time oversight and quick response
- **Set up round-the-clock help desks** manned by trained personnel to address distress situations, ensuring easy accessibility to support services and public awareness about their locations

- **Establish designated shelters** providing temporary refuge for women in distress, equipped with basic facilities, in proximity to healthcare centres that offer physical and mental health support, and trauma care, and legal aid facilities providing immediate guidance on rights and legal processes
- **Launch training programmes** for local residents and volunteers to act as first responders and assist in emergencies and awareness drives to educate women about their rights and available support systems; form neighborhood watch programmes to enhance vigilance
- **Partner with organisations** specialising in women's safety, counselling, and rehabilitation to guide efforts and ensure implementation across all districts, especially in remote or rural areas

3.1.2 Ensure prompt assistance during emergencies by strengthening distress signal and emergency-response mechanism:

- **Build local community response networks** including mobile units for immediate assistance
- **Increase collaboration with NGOs** at police stations for women in distress, to enhance empathy and support systems
- **Popularise the 'Women and Child Helpline'** by displaying the helpline numbers prominently in all Government offices and public places, including vulnerable hotspots, e.g., railway stations, bus stations, industrial areas, and workplaces, etc.
- **Mandate physical panic buttons** at all workplaces and transportation systems along with a mobile application

3.1.3 Establish a dedicated 'Women Safety Cadre' to take charge of all safety-related initiatives. This Cadre will develop and implement district-level safety plans, ensuring a structured and proactive approach to addressing safety concerns. Their responsibilities will include liaising with the police, legal service authorities, NGOs, and community groups to create a coordinated response mechanism. They will monitor the implementation of safety measures, conduct evaluations, and propose improvements for enhanced effectiveness.

3.1.4 Combat online harassment, cyberbullying, and financial fraud targeting women:

- Launch cyber literacy campaigns in schools and colleges to sensitise women about online safety
- Establish a dedicated 'Women Cyber Security Taskforce' to address complaints and swift prosecution
- Develop user-friendly app and portal for reporting and expedited redressal

3.1.5 Launch focused campaigns to tackle duping of women, especially tribal and vulnerable women with false promises of marriage, employment, or financial security

3.2 Women's participation in the formal economy

3.2.1 Develop an enabling environment for working women:

- **Increase public investments in childcare and eldercare services**, providing 100% coverage across all working spaces:
  - Create child-care centres across the State to ensure access to young children aged six months up to six years
  - Organisations to establish on-site childcare facilities or creches
  - Build the capacity of caregivers and educators of creches with a proper training module
- **Ensure universal safe working condition** for women with proper sanitation units
- **Establish breast-feeding rooms and toilets** for women in workplaces, high-traffic areas including train stations, bus stations, and shopping complexes, etc.
- **Build State-owned hostels and affordable housing options** for women in urban and semi-urban areas
- **Create and launch a digital aggregator platform** to facilitate job search for women, with focus on flexible working hours, work-from-home, and re-joining the workforce after a break, etc.

3.2.2 Ensure gender pay parity for all workers, including casual and regular employees by enforcing policies to maintain transparent salary structures to address pay disparities

3.2.3 Capacity building of women-in-entrepreneurship and business development; training in collaboration with Sector Skill Councils, linkage to technology and access to capital

3.2.4 Focus on skilling in sunrise sectors, mapping available skill sets with employment opportunities and creating avenues for upskilling with placement

3.2.5 Provide viability gap funding (VGF) to employers and individuals for increasing women's access to skilling

3.2.6 Develop women-led value chains in sectors such as hospitality, agri-processing, crafts and creative economy, leveraging Odisha's abundant raw materials

3.2.7 Award 'Gender badges' with performance-linked incentives to drive affirmative actions at workplace. Key requirements for the 'Gender Badges' are as shown below:

EXHIBIT 8.10

Key actions	Key requirements
• Set up an institutional mechanism to provide 'Gender Badge' for factories that meet standards of safety and working conditions for women • Provide incentives and subsidies for factories with the badge • Encourage Government and corporates to prioritise buying from gender-certified factories	1. Medical insurance 2. Childcare facilities 3. Gender sensitisation and inclusivity training 4. Safety and security 5. Transportation facilities 6. Maternity leaves and re-joining programmes 7. Hygiene facilities 8. Equal pay

3.3 Livelihood

3.3.1 Scale up 'SUBHADRA' as an umbrella brand to enhance the economic status of women and expand women SHG brands to become independent, financially sustainable, global entities by 2047

- **Launch 'SUBHADRA Entrepreneurship Hub'**
  - Set up dedicated incubators in each district, linked to local institutions, to provide counselling to women entrepreneurs to set up businesses, especially in emerging sectors such as eco-tourism and homestays in rural areas, etc.
  - Provide a single-window facility to women entrepreneurs in the State for taking up economic ventures across target sectors, such as food processing and textiles, etc.
- **Facilitate establishment of women-specific mentorship and networking programmes** to increase their representation in business leadership, connecting current and aspiring women leaders
- **Scale up women SHG brands** through an end-to-end support (detailed in Exhibit 8.11)

EXHIBIT 8.11

Scale up Women SHG brands
to a INR 2,500+ crore-value brand

Key principles for expansion

01 Focus on a strategy that emphasises women's empowerment

02 Leverage technology and modern retail practices, including digital marketing

03 Highlight the uniqueness and cultural significance of Odisha-origin products

04 Foster community engagement, support and mentorship

KPIs for tracking	2024	2029	2036	2047
Number of physical stores	550	750+	1,250+	1,500+
Revenue (INR cr.)	25+	150+	400+	2,500+
Geographic coverage	Pan Odisha	Pan India	Global	Global

Key interventions

- **A** Targeted branding and awareness creation
- **B** Scale up production capacity of SHGs
- **C** Enable financial sustainability

EXHIBIT 8.11 (continued)

B. Scale up production capacity of SHG

Training programmes

Expand skilling initiatives to include advanced training in production techniques, quality control and busines management.

Example: SEWA's training programmes have increased member's incomes by 50%.

Focus on multi-level value addition

with sound positioning to realise better values for SHG products, especially for non-seasonal forest produce; Promotion of different successful aggregation models to bring economies of scale, better price realisation and value addition.

Technology integration

Introduce appropriate technology to streamline production proces and increase product shelf life while maintaining the handcrafted quality of products.

Cluster development

Organise SHGs into district-level clusters to enhance production efficiency and faciliate bulk orders.

EXHIBIT 8.11 (continued)

Micro-entrepreneurship

Encourage SHG members to become micro-entrepreneurs by providing them with the necessary support and resources to scale their operations independently. Ensure access to credit opportunities, facilitate the preparation of Detailed Project Reports (DPRs), and offer handholding support in their engagement with financial institutions.

Strengthen SHG federations

Train leaders in governance, financial management and digital skills. Organise peer learning sessions to share best practices and scale operations effectively.

Revenue diversification

Develop multiple revenue streams through product sales, franchising fees and event sponsorships. Example: Lajjat Papad's diversified revenue streams have helped it become a USD 224mn enterprise.

EXHIBIT 8.11 (continued)

Cost management

Implement cost-effective practices in production, logistics, and marketing to maximise profitability.

Investment and grants

Seek investments and grants from national and international bodies that support women's empowerment and sustainable development.

Example: Barefoot College received grants from organisations like the Skoll Foundation, helping it expand its programmes globally.

Community support

Engage the local community and diaspora in fundraising and support activities to ensure a steady flow of resources.

Example: Akshaya Patra Foundation leverages community support to serve 20 lakh children daily

Trademark the brand and build a roadmap

to achieve profitability in the next 8-10 years

3.3.2 Provide integrated, end-to-end support to women entrepreneurs including, branding, market-linkage, production expansion, product diversification and mentorship:

- **Increase financial access for women**:
  - Achieve 100 percent financial inclusion for women across the State by expanding the reach of microfinance institutions and facilitating partnerships with NBFCs for low-cost loans
  - Create State-backed fund to provide low-cost formal loans to women-owned businesses via micro-finance institutions (MFI), and non-banking financial companies (NBFC)
  - Develop financial products such as ongoing zero-interest and revolving fund-based loans for women-owned businesses
- **Expand market access**:
  - Identify opportunities in existing programmes to scale up women-owned businesses. For instance, millet entrepreneurs can be given a thrust by introducing specific millet-based food such as 'Millet Khichdi' in the mid-day-meal programmes, hospital diets, and supplementary nutrition programmes, etc.
  - Create export-oriented, Gram Panchayat-level Farmers Producer Organisation (FPO) to help market products outside India
  - Provide tax incentives to investors in women-led startups modeled after the UK's Enterprise Investment Scheme (EIS) and other similar initiatives

3.4 Institutional support

3.4.1 Revamp ICDS machinery by enhancing infrastructure, human resource and capacity

- **Conceptualise 'Model Anganwadi Centres' as benchmarks of excellence,** equipped with inclusive infrastructure:
    - Re-imagine the centres as Anganwadi-cum-creche centres, operating for extended hours (eight hours) to support working mothers. These centres will integrate childcare, nutrition, and early education, symbolising the State's commitment to inclusive growth and gender parity.
    - Expand Anganwadi centres to at least 1,000 sq ft, increasing from current average size of 500 sq ft with integrated creches, and nutritional spaces such as kitchen gardens and vertical nutrition gardens
    - Ensure 100 percent availability of basic facilities, including separate toilets, safe drinking water, running electricity, boundary walls, breast-feeding rooms, and creches, etc.
- **Invest in capacity building and skill development**
    - **Introduce lady supervisors** trained in nutrition, health, reproductive rights, early childhood development, and education, to lead capacity-building programmes for frontline workers, ensuring effective knowledge transfer and skill enhancement. They will also provide ongoing mentorship and technical assistance to support the implementation of targeted interventions and ensure consistency in service delivery across all levels
    - **Set up 'Digital literacy hubs'** in rural and underserved areas, led by trained women facilitators, to provide training on basic computer skills, internet usage, and digital financial literacy. Women will also be taught how to access Government services online, empowering them to participate in the digital economy and governance processes
- **Recognise high-performing centres and workers annually**, incentivising innovation and community engagement

3.4.2 Tansform SIWC into a nodal body for women's empowerment by establishing a new think-and-do tank in collaboration with eminent institutions. Set up Center for Women-Led Development (CWLD) in premier state institutions. The responsibilities of SIWC will include:

- Provide support to all concerned departments in creation of schemes and policies based on evidence-based research and global best practices
- Designate a 'Chief Gender Equality Officer' under SUBHADRA within the State Government to oversee the implementation of women-centric policies and ensure accountability. This officer will

work closely with all departments to review and monitor the integration of gender-responsive strategies and will be responsible for regular reporting to the State Government. Additionally, designate a 'Gender Equality Officer' within every major department (Health & Family Welfare, School & Mass Education, Higher Education, and Labour & Employees' State Insurance, etc.). These officers will be responsible for ensuring the department's programmes are gender-responsive, advocate for women's rights, and provide regular updates to the department on gender equality outcomes.

- **Ensure convergence on schemes and programmes related to women's empowerment**:
  - Support regular inter-departmental meetings to assess progress, address challenges and identify areas for collaboration
  - Identify potential risks, and establish mitigation and contingency plans, along with risk owners and trigger points for action
- **Spearhead legislative reforms** to ensure gender sensitivity and acknowledgement of local, grassroot-level issues. For example, strengthening enforcement of the Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act to prevent gender-selective practices, with clear provisions to void actions that violate its provisions, ensuring stricter compliance and penalties
- **Evaluate impact of ongoing policies and programmes**:
  - Establish baseline data and KPIs for measuring progress across multiple domains – health, education, workforce participation, and leadership, etc.
  - Publish first-of-its-kind women's empowerment progress report with data, success stories and progress of key initiatives on an annual basis

Key roles and responsibilities of the 'Center for Women-Led Development (CWLD)' will include:

- Establish a robust framework for collecting and analysing data on women's socio-economic status, employment, health, education, and safety, etc., taking inspiration from the National Family Health Survey (NFHS)
- Commission studies focusing on gender disparities in various sectors, including agriculture, industry, and academia etc.
- Partner with leading research institutes to produce high-quality, credible insights for regular monitoring. For example, the World Bank's Gender Data Portal offers comprehensive gender-specific data that has influenced global gender-equality policies
- Create a publicly accessible digital repository of research, data, and case studies on women's issues to support policymakers, academics, and NGOs

3.4.3 Operationalise an integrated command-and-response centre as a unified mechanism for helplines

- Centralise all existing and proposed helplines for monitoring through a unified command-centre
- Equip the command-centre with an interoperable dashboard to ensure monitoring of data from various departments. Some of its roles will include:
    - Enable real-time monitoring of schemes' progress, including the number of beneficiaries enrolled, funds disbursed, and services rendered, etc.
    - Provide insights to decision-makers as to where certain schemes may be underperforming or where specific groups, such as rural women or marginalised communities, are underserved
    - Incorporate a feedback system from helplines and schemes' beneficiaries directly into the dashboard to enable immediate corrective action. For example, if women beneficiaries report difficulties accessing a scheme or service, it could be flagged for follow-up and resolution
    - Use AI and technology to engage with target audience for maximising impact

3.5 Women's rights

3.5.1 Strengthen legal and counselling services for women, especially to prevent human-trafficking and other GBV[1] crimes, through State family counselling centres, one stop centres, and women's helplines, etc.

3.5.2 Establish a robust rehabilitation ecosystem to empower distressed women

- Set up adequate, well-equipped crisis response centres in urban and rural areas equipped with medical, legal and psychological support services and integrated with employment and skilling initiatives
- Integrate rehabilitation structures with skilling and employment opportunities

3.5.3 Generate awareness regarding rights and support mechanisms among adolescents and women

- Launch comprehensive campaigns on 'Social Behaviour Change Communication (SBCC)' to address gender stereotypes leveraging different media such as, social media and radio, etc.
- Conduct legal literacy programmes at educational institutes and workplaces to educate women about their rights and legal recourses
- Mobilise and train women volunteers to work as agents of change in rural and tribal areas. These volunteers will focus on empowering women through the formation and strengthening of SHGs

[1] Gender-based violence

and promoting active participation in local governance. They will also undertake extensive Information, Education, and Communication (IEC) campaigns to raise awareness about Government schemes, health, and hygiene practices. Additionally, these volunteers will lead community outreach initiatives, resolving local challenges and facilitating sustainable practices for socio-economic development

- Develop grassroots programmes to educate communities about women's rights and the benefits of gender equality. For example, identify and appoint '**Women's Empowerment Ambassadors'** as influential community leaders or volunteers who are trained to raise awareness, mobilise women, and assist in the implementation of programmes at the local level. They will work closely with district and State authorities to ensure alignment with broader goals
- Leverage media to ensure elimination of gender-based discrimination

3.5.4 Launch a campaign to develop women's capacity for governance and encourage them to participate at various levels – State, District, Block and Panchayat levels

- Establish **'SUBHADRA mentorship groups'** in all Gram Panchayats to promote women's participation in governance and conduct capacity building programmes to ensure that leaders address local issues and drive holistic empowerment of women in rural areas
- Implement a '**Women's Empowerment Champions Programme'** within Government departments to recognise and reward individuals who excel in promoting gender equality in their work. These champions will serve as role models and leaders within their respective teams, advocating for and inspiring change on gender-related issues

CHAPTER 9

INCLUSIVE AND BALANCED GROWTH: BUILDING A FUTURE ROOTED IN EQUALITY AND DIGNITY

Summary

Odisha is characterised by its rich cultural heritage and natural resources, featuring a diverse demographic with a significant tribal presence, including 64 tribal communities and 13 PVTGs1. Additionally, about 17% of its population comprises scheduled caste communities. Despite this diversity, the delivery of basic services to tribal areas faces considerable challenges, resulting in regional disparities that impact education, healthcare, infrastructure, and livelihoods, hindering the State's overall development.

Although the State has implemented various initiatives such as residential schools, urban hostels, scholarships across educational stages, OPELIP, MMJJM and other livelihood programmes for the holistic development of tribals and other marginalised groups, including scheduled castes, and other backward and minority classes, it is crucial to reassess and refine the strategies to promote balanced growth.

The State aims to empower tribals and other marginalised groups[2], it is crucial to reassess and refine the strategies to promote balanced growth by ensuring (i) equitable access to dignified livelihoods, (ii) quality education, and (iii) health outcomes, while preserving their unique culture and fosteringbalanced regional development across the State.

[1] Particularly vulnerable tribal groups

[2] including scheduled castes, and other backward and minority classes

By 2047, the State envisions the following outcomes

- Achieve 100% saturation of access to quality health and education facilities
- Ensure 100% availability of qualified and trained teachers in all tribal schools
- Improve livelihood opportunities by ensuring saturation of major interventions such as housing, school education (including Anganwadi and Aatmanirbhar Bharat services), electricity connectivity, and more by 2036
- Ensure accelerated income to increase the per capita income of tribal communities

Key initiatives to achieve the outcomes

Enhance access and quality of education for tribal students by scaling up residential schools, scholarships, and teacher training, while ensuring a pupil-teacher ratio and teacher attendance are in line with the Right to Education (RTE Act). Additionally, develop appropriate policies to ensure optimal incentivisation and fair transfer policy for teachers

Promote sustainable livelihoods for tribals and other marginalised groups by promoting farm and non-farm opportunities, supporting micro-entrepreneurship, reforming policies around natural resource management, providing durable livelihood support infrastructure and skilling

Preserve and promote tribal heritage by involving communities in cultural preservation decisions, promoting tribal languages and traditions, and integrating these into economic development initiatives such as folklore promotion and cultural tourism

Launch the Odisha Tribal Renaissance Initiative (OTRI) as a comprehensive programme for strategic, long-term projects to drive holistic development and global integration of Odisha's tribal heritage and cultural skills. Initial projects will include (i) scaling up ADISHA to a niche tribal brand expanding to 20x in revenues by 2047, (ii) establishing an academy to increase the representation of Odia sportspersons in the National Archery teams, and (iii) developing a national arts and music institute of excellence to promote Odisha as the hub of tribal performing arts

Build a robust and inclusive governance mechanisms by strengthening community-led governance by involving local leaders and organisations, ensuring transparency in public services, and involving marginalised communities in the policymaking process to create inclusive and accountable systems

Given tribal and marginalised community empowerment is a State-wide and cross-cutting subject, additional critical initiatives like universal healthcare access, nutritional sufficiency, sports, skilling, industrial development, and ease of living, etc. have been covered under other chapters (specific interventions for tribals and other marginalised groups are summarised in Exhibit 9.4 for easy reference).

Over the next 24 months, the State will

- **Launch a comprehensive 'Inclusive growth policy'** to establish institutional mechanisms and incentives for the key interventions
- **Establish at least 100 model tribal schools** equipped with quality hostel management, trained teachers and digital infrastructure
- **Provide livelihood support to at least 2.5 lakh tribal households** by promoting various livelihood activities and infrastructure
- **Establish at least two world-class incubation centres** for tribal entrepreneurs, focusing on handicrafts and natural resource-based industries like bamboo, mahua, Sabai grass and other similar commodities. This will support at least 10,000 tribal micro-entrepreneurs to set up their own business enterprises
- **Introduce digital health cards** to all boarders residing in the ST & SC Development Department (SSD) hostels
- **Organise the 'National-level Sickle Cell Conference'** in the State in 2025
- **Form an inter-departmental Empowered Group of Secretaries (EGoS),** headed by the Hon'ble Chief Minister, constituting of Princ ipal Secretaries of major departments including SC & ST Development (Chair), Culture, Industries, Women and Child Development, Agriculture, Sports, and others, to ensure a robust governance mechanism of the programmes

1. Context

Odisha, renowned for its rich cultural heritage and abundant natural resources, comprises a diverse demographic, including approximately 24% tribal population with 64 tribal communities and 13 Particularly Vulnerable Tribal Groups (PVTGs). Additionally, about 17% of the population belongs to scheduled caste communities, alongside various communities categorised as socially and educationally backward classes.

The tribal communities, particularly the STs and PVTGs, reside in regions where the delivery of basic services poses significant challenges, leading to pronounced regional disparities. These disparities are evident in education, healthcare, infrastructure, and livelihoods, adversely affecting the State's overall development. For instance, in the education sector, the State's Tribal Sub-Plan (TSP) regions still grapple with over-crowded schools, limited hostel facilities, and inadequate academic resources. Similarly, in the livelihood space, while several Government initiatives aim to uplift tribal communities, considerable challenges remain in terms of sustainable livelihood generation, skill development, and market access.

The Government has launched several initiatives and schemes to address the regional imbalances and empower tribal and marginalised communities in the State.

EXHIBIT 9.1

Focus area	Ongoing Initiative	Details and impact
Education and skilling	Residential education facilities	Free accommodation to around 5.5 lakh students residing in hostels equipped with all basic and advanced educational and living amenities like books, libraries, nutritional snacks, and LED TV, etc.
	Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY)	Assistance to women under the 'Income Generating Scheme', skill development training to youth and villages to be declared as 'Adarsh Gram'
	Shahid Madho Singh Haath Kharcha Yojana	Financial aid of INR 5,000 provided to tribal students in Class IXth and XIth as a one-time financial incentive to reduce their dropout rates
	Eklavya model residential schools (EMRS)	Establishment of quality education facilities for tribal students in classes VIth to Xth with residential support in tribal-dominated districts, aiming to align outcomes with the CBSE education pattern
	Upgradation to Ashram high schools and high school to next level	Upgradation of Ashram schools[1] to high schools and high schools to higher secondary schools to ensure access to quality education
	Skill development training for OBC/ SEBC youth	Youth training for Other Backward Classes (OBC), Socially and Economically Backward Classes (SEBC) and other minority communities under the skill development programme

[1] Residential elementary schools for students in Ist to VIIIth standard

EXHIBIT 9.1 (continued)

Focus area	Ongoing Initiative	Details and impact
Livelihood	Minimum support price for minor forest produce (MSP for MFP)	Empowerment of one crore tribal collectors in 119 blocks across 14 districts in Odisha by ensuring fair pricing and support for MFP. The scheme offers an MSP, along with processing, value addition, and training for sustainable MFP harvesting and marketing. Establishing small and medium industries at the district-level will enhance processing and value addition, creating a sustainable supply chain for regular tribal income.
	Mukhya Mantri Janjati Jeevika Mission	Empowerment of 1.5 lakh tribal households in 121 blocks through farm, off-farm and non-farm livelihood activities, infrastructure creation and grass root community institution strengthening. Promotion of micro-entrepreneurship for tribal youth is a unique initiative under this. A budget of INR 500 cr. has been sanctioned to implement the first phase of the programme from FY 2023-26
	Odisha PVTG Empowerment and Livelihoods Improvement Programme (OPELIP)	Livelihood improvement for 13 PVTG in the State by 2031, with a budget of INR 2,422 crore. This will cover 1,679 PVTG villages across 14 districts
	Promotion of micro-entrepreneurship	Tribal youth training for entrepreneurship facilitating business development
Language and culture	2 major institution covering Janajati Ayitihiya and Swabhiman Bhavan along with Janajati Bhasa and Sanskruti Pratisthana	Establishment of the infrastructure in Gotapathna, Bhubaneswar under a sanctioned fund of INR 150 cr.
	SCSTRTI (SC, ST research and training institute) and ATLC (academy of tribal language and culture)	Research and documentation projects to be taken up for preservation and promotion of tribal culture, arts and crafts, languages, indigenous practices, and heritage
Others	Dharti Aaba Janjatiya Gram Unnat Abhiyan (DAJGUA)	Holistic and sustainable development of 7,667 tribal-majority villages across 27 districts including residential schools, Forest Rights Act management, etc.
	Inter-case marriage support	INR 2.5 lakh smarriage incentive amount provided to inter-caste marriage per couple (increased from INR 1 lakh previously)
	Other key initiatives	Learning through 'Hand, heart, and mind' by way of joining National Cadet Corps (NCC), Red Cross, scouts and guides, sports, and volunteering services, etc.

A balanced growth model is crucial for Odisha to achieve its target of USD 1.5 trillion GSDP by 2047. This approach will not only ensure equitable access to resources but also unlock the vast economic and social capital of these communities, enabling them to contribute meaningfully to the State's growth.

1.1 Key challenges

Despite the Government's commendable efforts, several challenges persist that have yet to be fully addressed. These challenges, further exacerbated by regional imbalances, include:

EXHIBIT 9.2

1.2.1. Inadequate educational infrastructure and monitoring:

- Inadequate academic monitoring system across all the level of education
- Limited training support for subject teachers
- Need to expand life skills education at all levels with adequate counselling support
- Absence of structural mechanisms like mentoring, career guidance and self-study timetables

1.2.2. Hostel management and student welfare:

- Lack of hostel management cadre and limited hostel supervision due to capacity constraints
- Opportunity to improve the amenities, safety measures and sanitation facilities in hostels by saturating housekeeping, laundry, and self-care services
- Potential for increase in facilities for physical activities such as playgrounds and sports halls
- Need to saturate age-appropriate nutritional diets for all students

1.2.3. Geographical and logistical barriers:

- Difficult accessibility of tribal regions due to poor all-weather connectivity and hilly terrains
- Presence of hostels in internet and telecom shadow zones hindering effective monitoring and supervision

1.2.4. Cultural sensitivity and community engagement: Erosion of tribal culture due to limited ethnographic studies for its documentation and preservation

1.2.5. Administrative and development coordination:

- Absence of long-term vision and strategy for tribal development and lack of convergence between different sectors and agencies result in fragmented planning and execution
- Limited data and administrative capacity to monitor sectoral gaps and development progress

1.2.6. Regional imbalance and disparities in development:

- Unequal distribution of resources and opportunities across regions, leading to imbalanced development
- Several tribal and rural areas being underserved in terms of infrastructure, education, and healthcare, further deepening regional disparities

1.2 Key trends

As socio-economic conditions shift, there is an increasing focus on addressing the unique needs of tribal communities, improving educational infrastructure, and fostering sustainable practices. This is evident across the major economies in the world:

EXHIBIT 9.3

Global indigenous rights movement. For example, Canada's Indigenous Languages Act (2019) protects over 70 languages

Economic empowerment: Globally, there is rising interest in tribal products through Geographical Indication (GI) promotion. Many countries are also leveraging tribal culture for sustainable tourism, like Thailand's hill tribes

Higher burden on poor health and nutrition gaps on tribal and minority populations. For instance, in India, the NFHS-5[1] highlights a 15% higher malnutrition rate among Scheduled Tribes compared to the general population

Innovative education models focusing on the preservation of cultural heritage while improving tribal literacy. For example, New Zealand's Kohanga Reo pre-schools teach Maori language and culture

Exacerbated climate and disaster vulnerabilities due to higher dependency on natural resources with high employment concentration in agriculture, and mining, etc.

Tribal culture and heritage preservation through several initiatives like 'UNESCO's intangible cultural heritage list' which recognises and protects local practices

[1] National Family Health Survey - 5

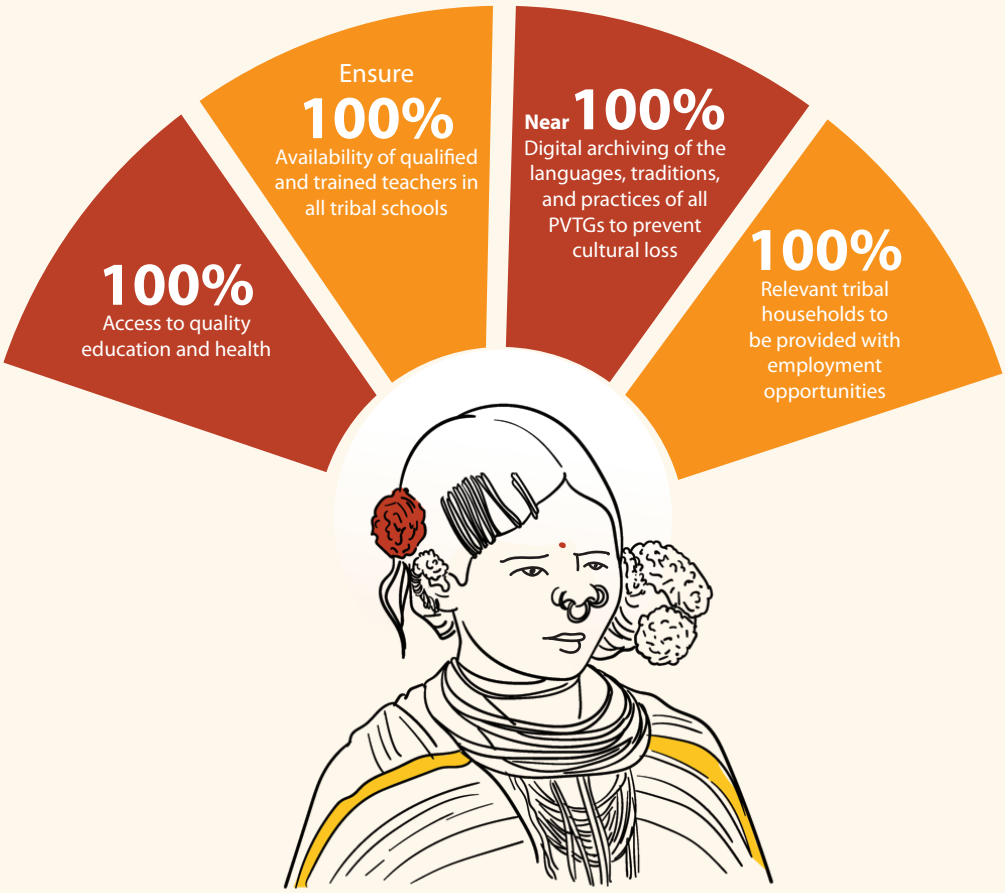
2. Vision and outcomes

Odisha will focus on empowering tribals and other marginalised groups by addressing systemic barriers across the social parameters. Consequently, the Vision emphasises regional balanced development to bridge disparities, unlock untapped economic and social potential, and create opportunities for inclusive growth:

EXHIBIT 9.4

VISION 2047

To empower tribals and marginalised groups by ensuring equitable access to dignified livelihoods, quality education, and health outcomes, while preserving their unique culture and fostering balanced regional development across the State



The State plans to implement its Vision by establishing the following clear and measurable outcomes:

EXHIBIT 9.5

Key outcomes	Unit	Current	2029	2036	2047
Mega residential education complex	Nos.	1	10	20	28
Tribal livelihood opportunity	% relevant tribal households	-	50%	70%	100%

3. Key initiatives

To accomplish these goals, numerous initiatives for inclusive and balanced regional growth, especially pertaining to the tribals and other marginalised groups, have been detailed across various chapters of the Vision report (summarised here for convenience):

EXHIBIT 9.6

Chapter	Key initiatives targeted towards tribals and other marginalised groups
Agriculture	Double the area under millets to around 6% of the gross cropped area, focusing on finger and foxtail millet especially promoting millet cultivation in tribal areas
	Skilling initiatives, especially focusing on tribal communities enhancing their market information flow, financial literacy, entrepreneurial skills, and sustainable forest management practices
Culture	Promote tribal art, crafts, and heritage as economic assets through sustainable cultural industries
	Develop respectful cultural tourism, including homestays, tribal language-trained guides, and soft skills for service
	Leverage technology for digital documentation of languages and cultural heritage
	Establish tribal museums and experience centres in tribal-dominated districts
	Organise tribal festivals with national and State holidays to celebrate their culture
	Position Odisha's tribal heritage on national and international platforms through exhibitions and collaborations
	Safeguard tribal sacred sites and knowledge systems through targeted policy frameworks
	Strengthen the Academy of Tribal Language and Culture (ATLC) to preserve and protect the unique heritage of tribal languages, dance, music, and culture

EXHIBIT 9.6 (continued)

Chapter	Key initiatives targeted towards tribals and other marginalised groups
Healthcare	Screen for genetic disorders such as sickle cell anaemia and thalassemia, as well as emerging and re-emerging viral and zoonotic diseases prevalent in tribal and Particularly Vulnerable Tribal Group (PVTG) communities
	Engaging with issues related to adolescent, sexual and reproductive health in tribal with special focus on PVTG communities
Industries	Promote green economic zones for traditional industries like handicrafts through cluster-based development
	Provide training on business skills, including marketing, finance, and management, to empower entrepreneurs
Nutrition	Implement nutrition programmes that provide age-appropriate and culturally relevant diet plans for tribal students and communities
	Develop data-driven policies addressing the unique challenges of tribal and remote areas
Rural development	Develop fair-weather roads, clean energy solutions, and mobile connectivity to improve market access for tribal communities
	Promote rural businesses by connecting them with digital platforms and e-commerce channels to reach broader markets
	Promote decentralisation of power and resources to local bodies such as Panchayats and Municipalities to ensure better service delivery at the grassroots level
School education	Promote vocational education tailored to traditional and market-relevant skills in all secondary schools
	Organise sports and cultural events in residential schools to build holistic skills
	Develop one integrated school complex, with high quality hostels in each block, especially in tribal areas
Services	Integration of Odisha's tribal areas into the IT sector will be prioritised through digital platforms, targeted training programmes, and employment opportunities
Skilling	Expand access to skilling programmes in predominantly tribal blocks and districts on mission mode, in partnership with industry through PPP mode and CSR funding support
Sports and fitness	Promote traditional tribal sports like Archery and Kho-Kho in a mission-mode (similar to the efforts on hockey) on State and national platforms
Women's empowerment	Launch focused campaigns to tackle duping of women, especially tribal and vulnerable women with false promises of marriage, employment or financial security
	Mobilise and train women volunteers to work as agents of change in rural and tribal areas

Additionally, rooted in the principles of dignity and inclusion, the following proposed interventions address systemic challenges unique to tribals and other marginalised groups while unlocking their economic, social, and cultural potential.

3.1. Enhancing access and quality of education

3.1.1. Expand and upgrade residential schools

- Build and upgrade composite residential schools in every tribal block, ensuring safe child-friendly infrastructure and saturation of modern facilities
- To preserve the tribal languages and address language issues in the early grades, establish mother-tongue-based learning models at least till the IIIrd standard, integrating tribal languages into the curriculum through targeted incentives, and certificate programmes, etc.

3.1.2. Teacher training and quality improvement

- Conduct comprehensive training programmes for teachers, focusing on culturally relevant pedagogy and the unique needs of tribal and SC students
- Ensure administrative and management capacity either by developing a dedicated cadre for hostel management or through public-private partnership (PPP)
- Establish e-learning modules for remote education delivery, targeting hard-to-reach tribal areas

3.1.3. Inclusive curriculum design

- Contextualise digital initiatives and curriculum to reflect the cultural heritage of tribals and other marginalised groups (e.g., digital folklores)
- Introduce prominent tribal languages (such as Santali) as optional certificate courses to support language preservation and multi-lingual education

3.1.4. Boosting retention and learning outcomes

- Ensure 100% retention in residential schools and 100% GER for PVTG students by 2029
- Facilitate transition to tertiary education by increasing student preparedness (detailed further in Higher education and skilling chapters)

3.2. Comprehensive livelihood enhancement

3.2.1. Livelihood schemes

- Saturate livelihood support to all tribals and other marginalised groups by 2036
- Provide infrastructure (e.g., irrigation, processing units) and enablers like financing and skilling
- Encourage animal husbandry for livelihood enhancement by setting up animal hostels in tribal clusters (more details in the Animal husbandry chapter)

3.2.2. Tribal entrepreneurship development

- Establish specialised, incubation centres to support tribal entrepreneurs in sectors like handicrafts, agriculture, and natural resource management (e.g., bamboo, mahua, and Sabai grass)
- Develop market linkages and promote tribal products (e.g., jackfruit, bamboo, and Sambalpuri sari) through local, regional, and global platforms
- Link tribal communities to national entrepreneurship support schemes and welfare programmes

3.2.3. Policy and rights for natural resources

Reform policies to:

- Grant appropriate rights for Kendu leaf and bamboo trading
- Ensure 25% for forest area is protected through Community Forest Resource (CFR) management plans led by the community

3.3. Cultural-led economic development

- Actively involve tribal communities in decisions regarding cultural preservation, ensuring they have a voice in safeguarding their heritage
- Recognise and promote tribal languages, oral traditions, and cultural practices
- Develop mobile applications and e-learning modules to make tribal languages accessible
- Conduct ethnographic studies and develop encyclopaedias of tribal languages and art forms
- Promote tribal folklore and songs through initiatives in schools and community radio channels

3.4. Odisha Tribal Renaissance Initiative (OTRI)

OTRI aims to elevate select, cross-cutting projects within the tribal community of Odisha to global prominence. By leveraging the rich cultural heritage, traditional skills, and unique products of the tribal communities, the initiative seeks to create sustainable economic opportunities, enhance global recognition, and preserve the cultural identity of Odisha's tribal population. The initiative comprises three sub-programmes:

3.4.1. Position 'ADISHA' as a global brand for revival and promotion of Odia tribal products

Odisha will work towards elevating ADISHA to a niche tribal brand expanding to 12-15x in revenues by 2036 and 20x by 2047, enhancing tribal incomes through an end-to-end transformation:

- Develop a national and, subsequently, a global branding strategy with a focus on authenticity, quality, and sustainability
- Promote ADISHA as a State-sponsored flagship brand, ensuring products produced on tribal **lands are sold under ADISHA brand, with robust data tracking**
- Enhance the market access by connecting with leading digital marketplace platforms in India and abroad
- Establish over 100 procurement centres across tribal regions for Minor Forest Produce (MFP), handicrafts, and tribal products to ensure fair pricing by eliminating intermediaries
- Develop processing hubs and value addition centres for forest produce, artefacts, textiles, and AYUSH-based products, focusing on modern design and packaging at par with global standards
- Train tribal artisans and producers, especially youth, in modern techniques while preserving traditional methods
- Launch incubation hubs for tribal entrepreneurs in key districts, providing mentorship and financial support

3.4.2. Academy for Excellence in Archery

Odisha will aim to ensure a significant representation of Odia sportspersons in the National Archery teams by 2047, driven through the establishment of a world-class 'Academy for Excellence in Archery':

- Equip the academy with state-of-the-art facilities and international coaching standards, along with smaller training facilities at block-level, in a hub-and-spoke model
- Conduct talent identification camps across tribal regions to scout for potential archers
- Develop intensive training programmes with international coaches and exposure to global competitions
- Offer scholarships and stipends to promising athletes to support their training and development

- Integrate sports-science support, including nutrition, psychology, and physiotherapy, into the training regimen

3.4.3. Strengthen Academy of Tribal Languages and Culture (ATLC)

The State will strengthen the Academy of Tribal Language and Culture (ATLC) to preserve and promote Odisha's tribal dance forms, aiming to establish the State as a global hub for tribal cultural heritage. This initiative will foster international appreciation, encourage cultural exchange, and create economic opportunities for tribal communities through the following measures:

- Preserving and showcasing rich tribal culture including dances & music at a global platform
    - Organise workshops and masterclasses with renowned artists to enhance the skills of students
    - Establish collaborations with national and international cultural institutions and artists to promote cultural exchange with national and global recognition
    - Organise world-class performances and cultural festivals, in major cities worldwide to showcase Odisha's tribal heritage
    - Empower and support artists to actively participate in national and international level competitions
- Support tribal artists in becoming cultural entrepreneurs through mentorship and financial aid
- Encourage academic research and map, document and digitally archive traditional tribal dances and music in collaboration with the local communities to ensure authentic preservation and promotion of the artforms
- Develop a centralised online archive accessible to researchers and cultural enthusiasts worldwide

3.5. Robust and inclusive governance mechanisms

The following multi-tiered approach to governance emphasises the importance of local leadership, transparency, and accountability in creating systems that work for all, particularly marginalised communities.

3.5.1. Community-led governance:

- Strengthen the capacity of community-based organisations (CBOs) and local PRI representatives to take ownership of governance processes
- Create platforms for regular dialogues between communities and Government bodies to facilitate feedback and accountability
- Implement community-driven development projects, empowering locals to identify and address their own needs

3.5.2. Transparency and accountability mechanisms:

Form an inter-departmental Empowered Group of Secretaries (EGoS), headed by the Hon'ble Chief Minister, constituting the Principal Secretaries of major departments including SC & ST Development (Chair), Culture, Industries, Women and Child Development, Agriculture, Sports, and others. Its key responsibilities will include:

- Ensure strategic alignment of departmental initiatives with the overall objectives of the State
- Oversee the allocation of resources and ensure adequate funding for various sub-programmes
- Convene regular meetings to monitor progress, de-bottleneck challenges, and ensure inter-departmental coordination
- Define key performance indicators (KPIs) and metrics to monitor the progress
- Evaluate the socio-economic impact of the initiatives on tribal communities to enable data-driven decision making
- Implement digital platforms for public service delivery to ensure transparency in Government schemes and budgets in remote and hard-to-reach areas
- Strengthen auditing and monitoring systems for Government projects, ensuring that funds are used effectively and equitably

3.5.3. Inclusive policy formulation and implementation:

- Involve tribals and other marginalised groups in the policy-making process by holding consultations, surveys, and community meetings
- Create policies that are culturally sensitive and contextually relevant to the needs of tribals and other marginalised groups, particularly in education, health, and livelihoods
- Develop and implement targeted awareness campaigns on governance, rights, and entitlements to ensure informed community participation

3.6. Empowering Every Worker: Towards Zero Distress Migration and Universal Labour Security

Odisha stands at a pivotal moment in its development journey—committed to ensuring that no citizen is forced to migrate out of distress and that every worker, in every corner of the State, is protected, empowered, and dignified. The path to Vision 2036 is clear: inclusive growth is not optional—it is foundational

Ending Distress Migration by 2036: **A Statewide Mission**

The State of Odisha is resolute in its aim to **eradicate distress-induced migration by 2036**. Migration should be a matter of opportunity, not of compulsion, desperation, or vulnerability. Odisha will adopt a whole-of-government approach to eliminate the root causes of distress migration through five decisive pillars:

3.6.1 Statewide Migration Intelligence System

A unified, real-time **Migration Tracking and Intelligence System** will be institutionalised to monitor worker movements, identify high-risk geographies, and enable timely, targeted interventions. The **PAReSHRAM portal**, currently offering over 60 end-to-end digital services across factories, boilers, and enforcement of labour laws, alongside household surveys and a soon-to-be-launched **mobile application for migrant registration**, will serve as the backbone of this system, ensuring that **no worker remains invisible to the State's welfare and protection architecture**

3.6.2. Livelihoods That Anchor People Locally

- **A major strategic thrust** will be directed towards anchoring livelihoods at the district level through **local job creation, enterprise development**, and **irrigation-led agricultural security**-with a special focus on migration-prone regions. Investments in infrastructure, such as dug wells and very minor irrigation, will enhance resilience in rural agriculture and reduce economic vulnerability
- Odisha currently guarantees **up to 300 person-days of employment per household per year** across 9 migration prone districts under MGNREGA,. This effort is complemented by an integrated ecosystem of livelihood support-including access to **microcredit, self-employment assistance**, and **cluster-based skill development programmes**, designed to provide **sustainable, dignified alternatives to distress-driven migration**. The forward-looking focus is on timely wage payments and **uninterrupted availability of work**

3.6.3. Safe Migration Corridors Through Interstate and International Collaboration

- Odisha will **deepen bilateral labour mobility agreements** with key destination states and countries, institutionalising mechanisms that ensure the **rights, entitlements, and dignity of every Odia migrant travel with them**. The network of **Odia Migrant Help Desks** will be significantly expanded at strategic locations to provide legal assistance, welfare linkage, and emergency support

- Through **formalised channels of information sharing and coordination**, Odisha will work with host-state authorities and international partners to improve **on-site living and working conditions**, guarantee **portability of social protection benefits**, and uphold the principles of **safe, dignified, and rights-based migration**

3.6.4. Global Standards for Odia Emigrants

- For Odia citizens seeking opportunities abroad, the Government of Odisha is committed to ensuring **safe, secure, and dignified migration pathways** that align with global best practices. The State will work with the **Ministry of External Affairs**, Government of India, to strengthen the institutional capacity of the Protector of Emigrants (PoE) office and collaborate closely with the ministries, Indian embassies, and consulates worldwide
- Special emphasis will be placed on ensuring timely justice in cases of **wage disputes, compensation claims, exploitation, repatriation of mortal remains**, and other **post-return or post-mortem support challenges**. Standard operating protocols will be developed for end-to-end assistance, including logistics support for the dignified return of deceased migrant workers

To safeguard the interests of Odia emigrants, Odisha will actively pursue **bilateral and multilateral labour mobility agreements**, with a strong emphasis on:

- **Equal treatment and protection from discrimination** in host countries
- **Zero tolerance for exploitative recruitment practices**, especially involving unregistered agents
- **Portability of social security benefits and access to grievance redressal mechanisms** across jurisdictions
- **Targeted support for vulnerable migrant groups**, including women, youth, and first-time international migrants

By raising the bar on migrant protection, Odisha aims to become a **national model for ethical migration governance and global labour mobility standards**.

3.6.5. Children First: Hostels and Continuity of Education

- **Seasonal hostels will be scaled up to protect the rights of children of migrant families. Education will not be interrupted; child labour will not take root. This investment in the next generation will break the chain of cyclical distress migration.**

Social Protection and Workforce Security for All: From Coverage to Saturation

- The State's vision is unequivocal: **Every worker in Odisha-whether formal or informal, local or migrant-must be fully covered under a comprehensive, rights-based social protection framework by 2036**.
- With an estimated **1.75 crore workers** (As per the 2011 census data), **92% of whom are employed in the unorganised sector**, Odisha recognises the imperative of achieving **universal saturation** through policy convergence, technological integration, and grassroots capacity-building.

Key Strategic Initiatives

Odisha will drive this transformation through a suite of initiatives designed to ensure holistic protection and empowerment of all segments of the workforce:

- **100% coverage of organised sector workers** under statutory entitlements including the Employees' Provident Fund (EPF), Employees' State Insurance (ESI), and labour law protections.
- **Comprehensive inclusion of informal, gig, and platform workers** under flagship schemes such as PM-Jeevan Jyoti Bima Yojana (PM-JJBY), PM-Suraksha Bima Yojana (PMSBY), PM-Shram Yogi Maan-dhan (PM-SYM), and Ayushman Bharat.
- **State–Centre convergence** through joint schemes such as the National Food Security Act (NFSA) and the **One Nation One Ration Card (ONORC)** initiative—whose successful technological rollout in Odisha offers a model for **extending portability to other critical welfare areas** including immunisation, health metrics, nutrition, Anganwadi services, and foundational education.
- Leveraging national and state-led initiatives, including **PMAY, MGNREGA**, and flagship Odisha schemes like **MBPY** and **Subhadra Yojana** to deepen social safety nets.
- **Full integration of construction workers** already registered under the Odisha Building and Other Construction Workers' Welfare Board (OB&OCWWB), ensuring seamless access to entitlements related to education, marriage assistance, pension benefits, death compensation, and targeted skilling and entrepreneurship promotion.
- **Expansion of the Odisha Unorganised Workers' Social Security Board** to include newly emerging work categories and vulnerable labour segments, ensuring no worker is excluded from the State's protection mandate.

Delivery Enablers

To ensure last-mile impact, the following structural enablers will be deployed:

- **Inter-departmental convergence cells at the State and district levels to harmonise scheme design and delivery.**
- **Empowered Gram Panchayats** to track, support, and mobilise the local labour force, delivering both preventive and protective interventions in a participatory and dignified manner.
- **Statewide mass outreach and awareness campaigns** to boost enrolment and improve scheme uptake.
- **Technology-led access points** through Mo Seva Kendras, Common Service Centres (CSCs), and platforms to deliver services efficiently.
- **Integrated digital databases** to ensure de-duplication, real-time tracking, and leak-proof targeting of beneficiaries.
- **Portability of entitlements across geographies and occupations**, ensuring that mobile and migrant workers remain protected wherever they go.

From Protection to Empowerment

- **Odisha is shaping an economy where every worker is recognised as a contributor to growth—respected, safeguarded, and enabled to thrive**. The State's inclusive labour vision extends far beyond safety nets; it is a bold commitment to **opportunity, dignity, and an enhanced quality of life**. By 2036, Odisha will stand as a **national leader in labour equity and migration governance**-a State where **no individual is left behind**, and **every worker is an active participant in the journey of shared prosperity**.
- To institutionalise long-term support for migrant workers, the Government of Odisha will develop and adopt a **dedicated State Policy on Migration within the next 24 months**. This policy will serve as a strategic framework to guide safe, dignified, and opportunity-driven migration, supported by robust interstate and international partnerships, legal safeguards, and welfare mechanisms.
- Equally, Odisha will continue to promote a **cultural narrative that honours the dignity of labour**-recognising work not just as a means of livelihood, but as a cornerstone of societal value and pride. Through educational campaigns, community engagement, and integration into school curricula and public messaging, the State will foster a **collective sense of respect for all forms of labour**, reaffirming the role of the worker in building a just and prosperous Odisha.

CHAPTER 10

SEAMLESS GOVERNANCE: ENSURING A TRANSPARENT, PEOPLE-CENTRIC, AND DIGITAL-FIRST GOVERNANCE

Summary

As Odisha aims to achieve the status of a developed State by 2047, **it is key to ensure effective governance and citizen engagement**. This would entail efficiently engaging citizens, and optimising institutions, data, digital services, and internal operations to deliver services effectively.

Odisha has taken multiple steps to ensure effective and time-bound delivery of Government schemes through digital platforms while also addressing citizen grievances swifty. To foster further excellence in governance and pursue administrative reforms, the State needs to overcome challenges in land record management, empathy-based policing, misuse of grievance management, divergence of benefits meant for underprivileged, cybersecurity and capability building across all departments. This approach will **enable the State to improve its position in the 'Good Governance Index (GGI)'** issued by the 'Department of Administrative Reforms and Public Grievances (DARPG),' where it is currently positioned 7th among the eight Group-B States.

The State aims to deliver faceless, seamless and equitable governance system.

By 2047, the State envisions the following outcomes

- Become a leading State in the 'Good governance Index' published by Department of Administrative Reforms and Public Grievances (DARPG) and among the top three States in the 'Sustainable development goal (SDG) Index' for India
- Deliver all mandatory e-services through the 'Odisha One' platform
- Achieve near zero grievance pendency rate
- Ensure at least 50% share for women in the police force

Key initiatives to achieve the outcomes

Establish a faceless, seamless and transparent land administration system

Transform law and order enforcement to be more empathetic, citizen-centric and accountable

Develop a centralised and effective grievance management system

Ensure equitable distribution of social security benefits

Transition to a paperless Odisha

Continue investments in citizen engagement

Saturate digitisation of citizen and business services

Augment Government capability and capacity for governance

Over the next 24 months, the State will

- **Enable unique property identification** through linkage with AADHAR, add biometric verification for additional security e.g., BHULEKH and AADHAR linkage
- **Enhance the existing unified grievance platform**, Jana Sunani, to publish a real-time dashboard, tracking all stages of a customer complaint
- **Conduct a 'Government process re-engineering' exercise** with the help from an external entity to simplify and streamline administrative tasks and approval processe; carry out pilot-testing in 3-4 key departments
- **Ensure 100% digitisation of all Government-to-citizen (G2C) services** on the 'One Odisha' platform with increased transparency - e.g., ensuring real time display of status for each application
- **Shift to paperless processing** in 3-4 key departments
- **Segregate the law-enforcement and investigation wings of Odisha Police** in 3-4 key districts as pilot, with an aim to ensure equal share of Odisha Police in both the wings
- **Maximise public engagement** by enabling digital consultations for key decisions
- **Initiate a unique family database** to ensure 100% saturation of all benefit schemes

1. Context

Government of Odisha has taken multiple steps to deliver effective governance for its citizens, including:

- Integrated more than 440 Government services on a single digital platform – 'Odisha One'
- Ensured time-bound grievance resolution through the 'Jana Sunani' portal and the in-person weekly grievance gatherings hosted by the Hon'ble Chief Minister
- Enhanced the capacity of the Odisha Police through digital platforms like 'Sahayata' and 'Arakhi', to ensure effective law and order management in the State
- Reduced crime against women by employing a 'Special women police desk' at all police stations

These efforts have enabled the State to digitise Government services and connect with people through grievances resolution and effective law and order management.

1.1 Key challenges

Despite multiple initiatives by the State to deliver transparent and effective governance, the State needs to address challenges on land record management, citizen-centric policing and last mile delivery of social benefits:

EXHIBIT 10.1

Grievance management:

- Potential to enhance the existing unified platform. Jana Sunani, to publish ensure real-time tracking and service level agreements (SLAs) for all the stages of grievance resolution
- Misuse of Odisha Right to Public Services Act with multiple petitions for small and non-issues

Cybersecurity:

- Higher share of financial fraud in the State
- Inadequate skill level of Government personnel to tackle the complex nature of cybercrime

Land title and record keeping:

- Interference of middlemen and third-party agencies in registration and issue resolution of land leads to delays
- Lack of transparent tracking of land ownership and related transactions
- Mismatch in digital and physical and records

Law and order enforcement:

- Improvement needed in citizen centricity e.g., empathy-driven policing, digital services and police at door-step
- Scope for increased transparency in maintaining digital records of offences
- Comparatively lower police personnel per station, especially women

Access to social benefits: Need for targeted last-mile delivery of social security benefits without leakages, especially for the under privileged – e.g., Odia labour working in other States

1.2 Key trends

Governments across the world have leveraged technology to address gaps in delivery of citizen services and bring transparency in functioning of their key departments. Digital tools have also enabled real-time feedback on Government services and policies. Some of the best practices include:

EXHIBIT 10.2

Country	Case study	Key learnings for Odisha
1 **Singapore**	**APEX is a cloud-based platform that allows users to access API[1], manage identities and share data**	Odisha can leverage API Setu – a similar app by the Government of India – to build tech stack for seamless land transactions in the State
2 **UAE**	**The paperless strategy eliminated over 30 crore sheets of paper used for Government transactions annually**	Odisha can integrate technology, legislation, and cultural acceptance to create seamless, personalised, and efficient public services while saving costs and benefiting the environment
3 **Estonia**	**The 'X-road platform' is a secure, decentralised data exchange layer that integrates over 1,500 public and private information systems, enabling seamless, transparent, and efficient e-government services**	Many facilities currently provided by the Central Government such as medical through ABHA[1], business register through MCA[2] and Udyam could be integrated on a single app. Odisha can scale-up Bhu Aadhar to link all the land parcels in the State with a unique identifier ULPIN[3]
4 **USA**	**Challenge.gov portal hosts competitive challenges for over 100 federal departments and agencies, crowdsourcing innovative solutions to improve Government services while awarding prizes to winners**	Odisha can participate in the Central Government's MyGov platform, which provides a similar citizen engagement framework, to crowdsource innovative solutions, enhance public participation, and improve the efficiency and effectiveness of State governance
5 **Republic of China**	**Artificial intelligence (AI) to enhance privacy and launch digital and deliberative democracy initiatives, ensuring robust governance and accountability**	Odisha can integrate a feature into the Odisha One app to engage citizens and gauge public opinion on various issues, using AI to analyse feedback, enhance participatory governance, and make data-driven decisions for better public service delivery
6 **India**	**Bhu Aadhaar, a digital land management system, facilitates effective governance of land parcels by providing accurate, real-time data on land ownership and usage**	The discrepancy between digital land records and physical land surveys poses a significant challenge in Odisha. Bhu Aadhaar's land ownership verification API service, through ULPIN[3] for all land parcels in the State, could help mitigate this issue

[1] Application programming interface
[2] ABHA: Ayushman Bharat Health Account
[3] Ministry of Corporate Affairs
[4] Unique Land Parcel Identification Number

3. Vision and outcomes

Odisha aspires to create an equitable governance system with robust digital infrastructure and high citizen-centricity.

EXHIBIT 10.3

VISION 2047

Create a faceless, seamless and equitable governance system with robust digital infrastructure, high stakeholder accountability, and citizen-centric service delivery

3.1 Key outcomes

Odisha has set specific targets to track progress and deliver its Vision:

EXHIBIT 10.4

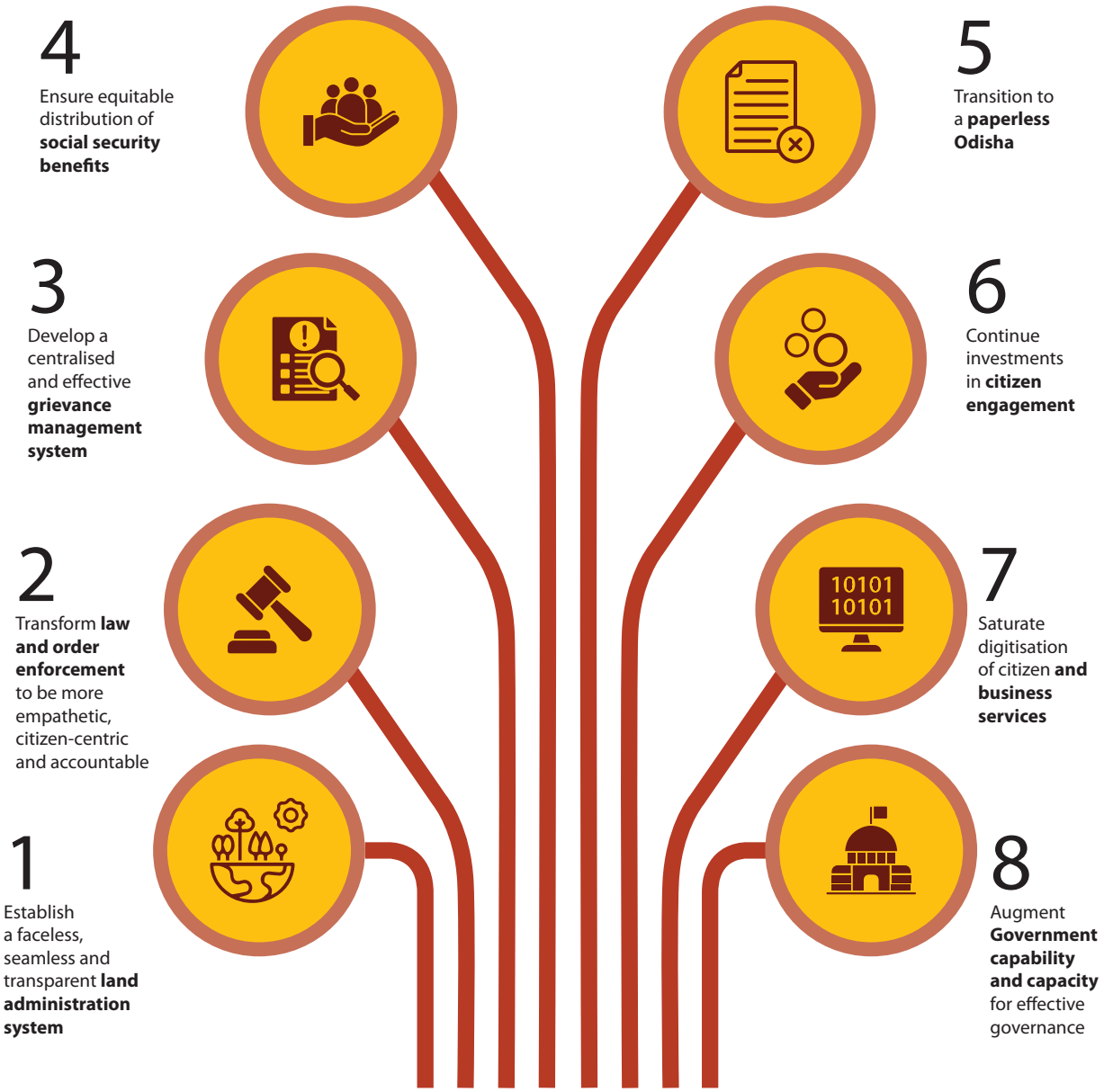
Key outcomes	Unit	Current	2029	2036	2047
Mandatory e-services offered through Odisha One platform	%	67%[1]	100%	100%	100%
Grievances pendency [2,3]	%	30%	20%	10%	0%
Performance on the 'Good governance index'[4]	Rank in India	7th[5]	Top 5	Top 3	Leading State
Performance on the 'SDG India Index'[6]	Rank in India	12th	Top 10	Top 5	Top 3
Police-to-citizen ratio[7]	No. per lakh population	148	165	200	300
Share of women in police force [8,9] (%)	%	9%	15%	30%	50%

[1] 442 out of 657 services linked
[2] Calculated as percentage of grievances pending against total received in the particular year
[3] Uttar Pradesh: 6.5%
[4] Madhya Pradesh: 1st in the eight Group-B States
[5] Among eight Group-B States
[6] Kerala and Uttarakhand are leading
[7] Goa: 512 Chhattisgarh: 220
[8] Tamil Nadu: 19%
[9] Including Civil, District Armed Reserve, Armed and Indian Reserve Battalion
Source: DARPG; NITI Aayog; Bureau of Police Research and Development report 2022, Centre for Economic Data and Analysis (CEDA), Ashoka University; Home Department Government of Odisha

3. Key Initiatives

The State will deliver effective and transparent, digital-led governance by undertaking eight strategic initiatives:.

EXHIBIT 10.5



To deliver the Vision, Odisha will undertake a set of projects, policies, schemes and institutional shifts across these interventions (Exhibit 10.6)

EXHIBIT 10.6

Key initiatives	Projects	Policies and schemes	Institutional shifts
Establish a faceless, seamless and transparent land administration	Ensure the digital land records are **GIS mapped** and are **accurately updated in real-time**	**Enable unique property identification** through AADHAR linkage Add biometric verification for **additional security** e.g., BHULEKH	**Minimise middlemen, third-party vendors** and auxiliary agencies across the land registration process
Transform law and order enforcement to be more citizen-centric and accountable	**Enhance the 'Sahayata' app**, e.g., by integrating the digital complaint filing and tracking system	Supplement citizen-first and **empathetic approach** in law enforcement through, for instance, imposing penalties for misconduct	Build a **digital-ready police force** by enhancing its capacity and capability e.g. • Scale up the State's 'Special cyber command force', and • Segregate the law enforcement and investigation arms, with equal share for both
Develop a centralised and effective grievance management system	**Integrate AI use cases** to analyse large datasets and public comments to identify key issues and enable chatbot functionality **Develop 'Integrated feedback mechanism'** or quality ratings, to capture satisfaction post service delivery through the 'One Odisha' platform	**Ensure citizen accountability** through AI-driven processing and penalties for misusing the grievance portal	**Upgrade the 'Jana Sunani' grievance platform** to include a real-time dashboard. This will track each stage from registration to resolution, outline Service Level Agreements (SLAs), and send regular updates to the complainant **Reduce the resolution time** from current 2-3 months average to less than a month
Ensure equitable distribution of social security benefits	**Ensure 100% coverage of the 'Social protection delivery' platform** by utilising unique IDs for individuals and families linked to AADHAR. This will ensure identification and inclusion of the disadvantaged beneficiaries like migrants	**Devise integrated schemes** to deliver social protection benefits to Odia migrant labour working in other States	**Set up a 'Labour exchange'** to help daily-wage workers find work opportunities

EXHIBIT 10.6 (continued)

Transition to a paperless Odisha	**Ensure 100% digitisation** of all citizen facing services, integrating them on the existing portals **Launch an e-office programme in mission-mode** to digitise all internal processes, with rewards for the best performing Departments **Integrate procurement** on a single portal with seamless vendor empanelment, and standard contracts, etc.	**Eliminate obsolete rules and processes** in Government services, certifications, cash disbursals and registration processes, etc.	**Establish a decentralised data exchange system** integrated with Digilocker and OdishaOne service interface allowing secure and standard data sharing across Government agencies **Launch a single window** portal for all MSMEs and startups with end-to-end coverage
Continue investments in citizen engagement	**Collaborate with premier education institutions** to establish a 'Centre of Excellence'. For example, work with Stanford University's 'Deliberative democracy lab' to become the first State in India to use deliberative polling for policy-making	-	**Get onboarded on the My Gov platform** for crowd-sourcing ideas and citizen feedback
Saturate digitisation of citizen and business services	**Saturate the integration of services** on the 'Odisha One' platform **Create an inter-operable data architecture across Departments**; upgrade with features such as AI chatbot providing real-time communication with the Government and giving automatic alerts (e.g., one week before the expiry of a permit) **Leverage existing digital public infrastructure** such as AADHAR, UPI, and ONDC, etc. to build Government services – like the 'Odisha Yatri' **Build a single window digital system for all MSMEs** and local businesses with enhanced service coverage and quality	**Ensure 24/7 mobile and internet connectivity** in all villages **Ensure data security and privacy protocols** aligned with the personal data guidelines by the Ministry of Electronics and Information Technology (MeitY)	**Evaluate feasibility and build a dedicated cadre for IT** in a hub and spoke model, ensuring presence in every Department, taking learnings from Gujarat; Institutionalise regular trainings on relevant technological advancements **Launch a fellowship for corporate sector employees** to be deputed for a year in the new IT cadre

EXHIBIT 10.6 (continued)

Augment Government capability and capacity to make governance more effective	**Leverage digital resources from the 'Mission Karmayogi'** platform to provide high-quality trainings to the Government employees **Implement real-time public dashboards** for displaying service ratings and monitoring key performance indicators of all departments **Enable biometric registration** in all the Government offices for monitoring attendance	**Formulate a human-resource policy** with an outcome-oriented performance management for all the Government servants **Identify services and devise policy for public-private partnership in citizen service delivery**, focusing on priority services like the 'Passport Sewa Kendra'	Build employee capability through **learning management system and dedicated hybrid periodic trainings, and exposure visits, etc.**, in collaboration with leading national and international institutions Establish an independent committee to **audit the performance and satisfaction level of all Government services**

CHAPTER 11

HEALTHY ODISHA: REVOLUTIONISING HEALTHCARE

Summary

Odisha has taken important steps towards elevating its public health system in the past two decades, achieving notable wins. It has the highest immunisation coverage in the country, ranks second in tuberculosis elimination efforts nationwide, and has achieved 64% decline in malaria. Challenges such as inadequate infrastructure (specialty hospitals and non-functional PHCs) and quality practitioners, however, still deter Odisha healthcare. Additionally, the State has started to see the impacts of trends including an ageing population, shift in disease burden towards non-communicable diseases and the threat of climate change. The State plans to combat these by **building an equitable, inclusive, resilient, and digital-first healthcare system that is affordable**. Inclusivity and equity will be the cross-cutting principle with a focus on gender, marginalised groups, rural communities, and persons with disability.

By 2047, the State envisions the following outcomes

- Become one of the top five States in life expectancy and productive elderly population
- Offer universal access to Indian Public Health Standard (IPHS) primary, secondary and tertiary healthcare facilities
- Enhance life expectancy by controlling risk factors for non-communicable diseases (NCD) and ensuring acccess to effective treatment
- Enable a 100% coverage of disaster-resilient public health infrastructure
- Reduce out-of-pocket expenditure from current levels by 75%

Key initiatives to achieve the outcomes

Comprehensive health data system for evidence-based healthcare policy and decision making

Preventive, promotive, and palliative healthcare programme to be delivered through revamped Ayushman Arogya Mandirs and focus on Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH)

World-class elder healthcare delivery system through adequate service delivery at all levels and senior citizen-friendly infrastructure, activities and services

Climate-resilient health system including strengthening of public health operations network to combat the growing extreme climatic events, infectious diseases and pandemics

Ease of accessing emergency services through scaling up of trauma care centres and reduction in emergency response time

Transition from a doctor-centric to a team-centric model, with skilling pathways for all medical and allied health professionals

Technology-enabled, efficient service delivery by adopting advances in technology and artificial intelligence (AI) across end-to-end patient journey, starting with digital dispensaries at primary health centre (PHC) level

Advanced tertiary care: A medi-city in the proposed "Bhubaneswar-Cuttack-Puri-Paradip" quad city region (detailed under the chapter 'Urbanisation as a growth engine')

Over the next 24 months, the State will

- Develop a **framework for the proposed healthcare data system**, outline the platform architecture and map existing data sources
- **Revamping of Ayushman Arogya Mandirs** into holistic preventive and promotive care centres
- Build a plan for an **expert trainer pool for elder care** in all districts to train current workers and community at large
- Develop a **team-based competency framework** for providing care at Primary Health Centres (PHC)
- Implement the **unified inter-operable citizen healthcare database** linked to Ayushyman Bharat (ABHA) identity numbers
- Design and implement a **model digital PHC dispensary** with end-to-end technology infrastructure
- Scale up the **trauma centres and ambulances** for emergency care

1. Context

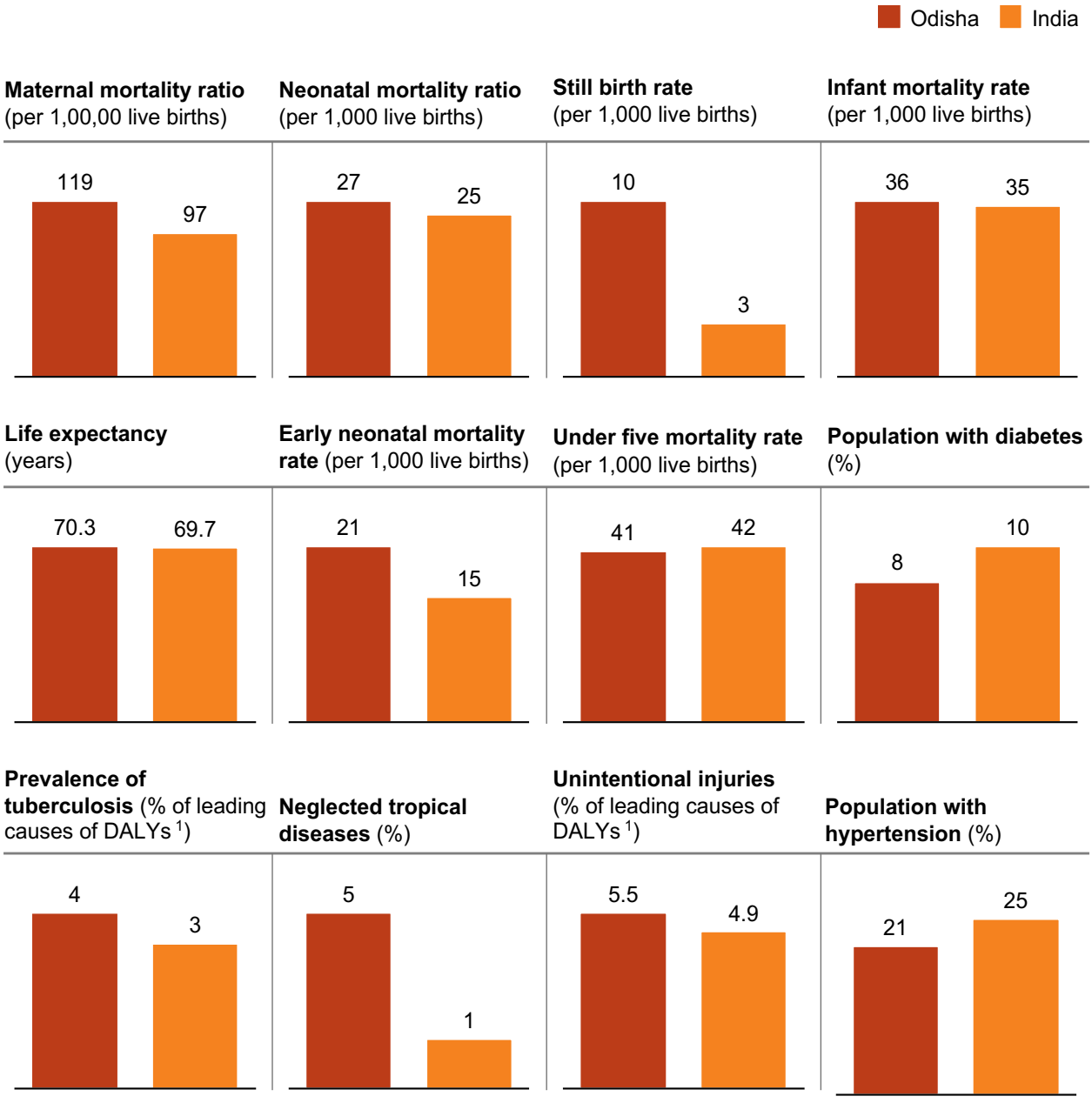
Odisha's public healthcare system has achieved notable wins, surpassing national averages in key indicators related to the third Sustainable Development Goal (SDG 3) which focuses on health and well-being. The State has progressed from a performer with a score of less than 64 in 2018 to a frontrunner with a score of 73 in 2024 among all Indian States. This significant improvement is driven by Odisha's decision to allocate 8% of its total expenditure for the fiscal year 2023-24 towards healthcare, an amount notably higher than the average allocation of 6.3% by other Indian States.

Other feats include:

- Achieving the second rank in tuberculosis elimination (over 80%) efforts in the country in 2023
- 64% decline in reported malaria cases between 2018–22
- 78% women with at least four antenatal visits, compared to the national average of 58%
- 70% utilisation of public health facilities, compared to the national average 37%

EXHIBIT 11.1

Odisha is performing at par with national average on many health parameters with scope for improvement across few outcomes



1. Disability-adjusted life years

Source: Odisha Economic Survey 2024-25, NFHS-5, Odisha SDG report 2023-24, Statistical report 2020; Public Health Foundation of India (PHFI), Institute for Health Metrics and Evaluation (IHME), Indian Council of Medical Research (ICMR), Ministry of Health and Family Welfare (MoHFW), 2019

1.1 Current efforts

The State has already kick started several initiatives to improve health-related outcomes. Some of these are captured below:

1.1.1 Healthcare affordability

- **ABPMJAY-Gopabandhu Jana Arogya Yojana** offers health assurance coverage with cashless hospitalisation at empanelled hospitals in the State. Over 2,070 packages are currently covered with a budget of INR 4,611 crore for FY 2024–25
- **Niramaya** offers over 1,087 types of essential medicines and 268 types of surgical and suture items free of cost to patients at all Government health facilities in the State

1.1.2 Healthcare service delivery

- **Sahay scheme** provides free dialysis services with a budget of INR 191 crore for FY 2024–25. About 493 dialysis machines installed across health facilities and are expanding to sub-district hospital
- **Nidaan scheme** guarantees free diagnostic services in public health facilities since January 2018, with INR 236 crore earmarked in the FY 2024-25 State budget

1.1.3 Healthcare infrastructure

- **Ama hospital scheme** aims to strengthen all 1,858 hospitals in the State, with a budget of INR 1,314 crore for FY 2024–25. 149 hospitals have already been transformed with improved patient care facilities in phase one and about 293 facilities will be strengthened in the second phase
- **Over five hospitals already transformed** with improved patient care facilities and 67 new health facilities introduced in the second phase
- **Mukhya Mantri Swasthya Seva mission** improves healthcare delivery and has established eight medical colleges and two post-graduate institutes in the past six years. INR 2,462 crore earmarked for FY 2024–25

1.1.4 Healthcare protection and promotion

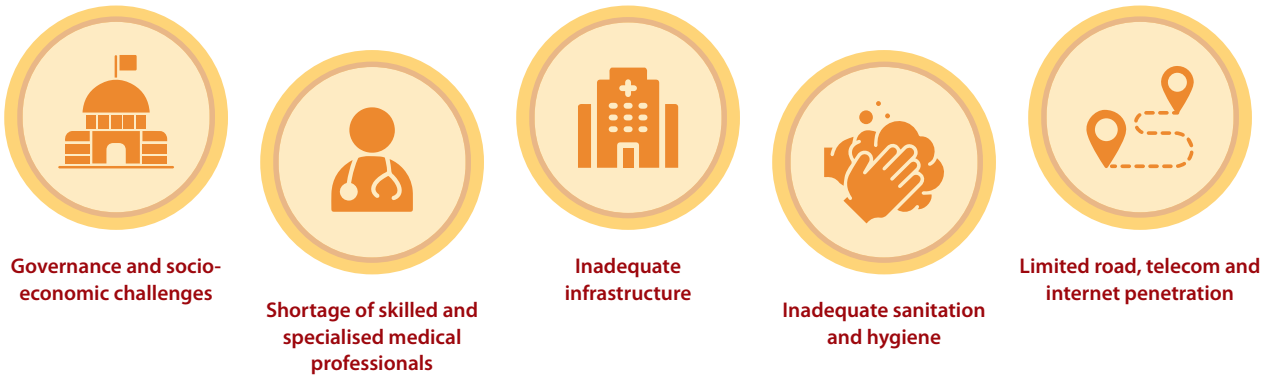
- **SAMMPurNA (Sishu Abang Matru Mrutyura Purna Nirakarana Abhiyan Scheme)** aims to reduce infant mortality rate (IMR) and maternal mortality rate (MMR). The Scheme has been extended for another five years till FY2027–28, with an allocation of INR 152 crore for FY2025–26
- **Nirmal scheme** maintains quality of sanitation, laundry, security, gardening and lift services in public health facilities to provide better ambience, minimise hospital acquired infections and improve patient satisfaction levels
- **Khushi scheme** provides free sanitary pads to 17 lakh girls across Government and non-Government-aided schools with a budget of about INR 512 crore earmarked for five years

These programmes have been instrumental in delivering quality healthcare services to citizens from all backgrounds and income levels. However, there exist further opportunities to unlock impact for the same.

1.2 Key challenges

Despite several improvements in healthcare indicators, Odisha faces considerable challenges due to a combination of logistical, infrastructural, socio-economic and resource-related issues.

EXHIBIT 11.2



- **Governance and socio-economic challenges**
  - Governance is currently centralised and can benefit from more decentralisation
  - Prevalence of early marriage and early pregnancies affecting health and nutrition indicators
- **Shortage of skilled and specialised medical professionals**
  - Inadequate availability of skilled cadre such as super specialist doctors, midwives, mental health experts, and skilled paramedics
- **Inadequate infrastructure**
  - Only four functioning PHCs per one lakh population (2022)
  - Only 77% doctor capacity fulfillment at PHC level
- **Inadequate sanitation and hygiene**
  - Only 60% population with basic sanitation services
  - Only 71% houses have access to toilets, less than national average of 82%
- **Limited road, telecom and internet penetration** leading to challenges in coverage of schemes for vulnerable groups in hard-to-reach areas; e.g., Odisha has only ~40% internet penetration and ~60% road connectivity in rural areas

Source: National Family Health Survey – 5 (2019-21), UNICEF, National Health Authority estimates

1.3 Key trends

Global and national healthcare trends can significantly impact Odisha's healthcare landscape by shaping policy directions, funding priorities, and technological advancements. Some of these are captured below:

EXHIBIT 11.3

Demographic transition towards ageing population: Proportion of elderly population (60+) in Odisha expected to grow from 9.3% in 2011 to 18.1% of total population by 2036

Threat of climate change and extreme climate events such as floods, cyclones, and heat waves; expected to cause 2.5 lakh additional deaths per year between 2030-2050 with 30% increase in child stunting; expected impact on Indian food systems due cropping and agriculture pattens

Evolving digital technology and AI to assist service delivery: Deployment of digital solutions to improve delivery efficiency and quality of care, e.g., telehealth consultations, interoperable health databases, Gen-AI assist in diagnosis, and digital twins for live patient

Triple burden of diseases (communicable, non-communicable and injuries): Over the last 20 years, Odisha's disease burden has shifted to non-communicable diseases (NCD) like stroke, heart disease, and injuries, reducing tuberculosis from 5.5% (1990) to 4% (2019) and increasing road injuries to 2.9% (2019) from negligible in 1990

Threat of frequent emerging and re-emerging infectious diseases (including pandemics): Changing dynamics of interaction between agents, hosts, and the environment, along with evolving infectivity and virulence of infectious organisms, are driving such diseases

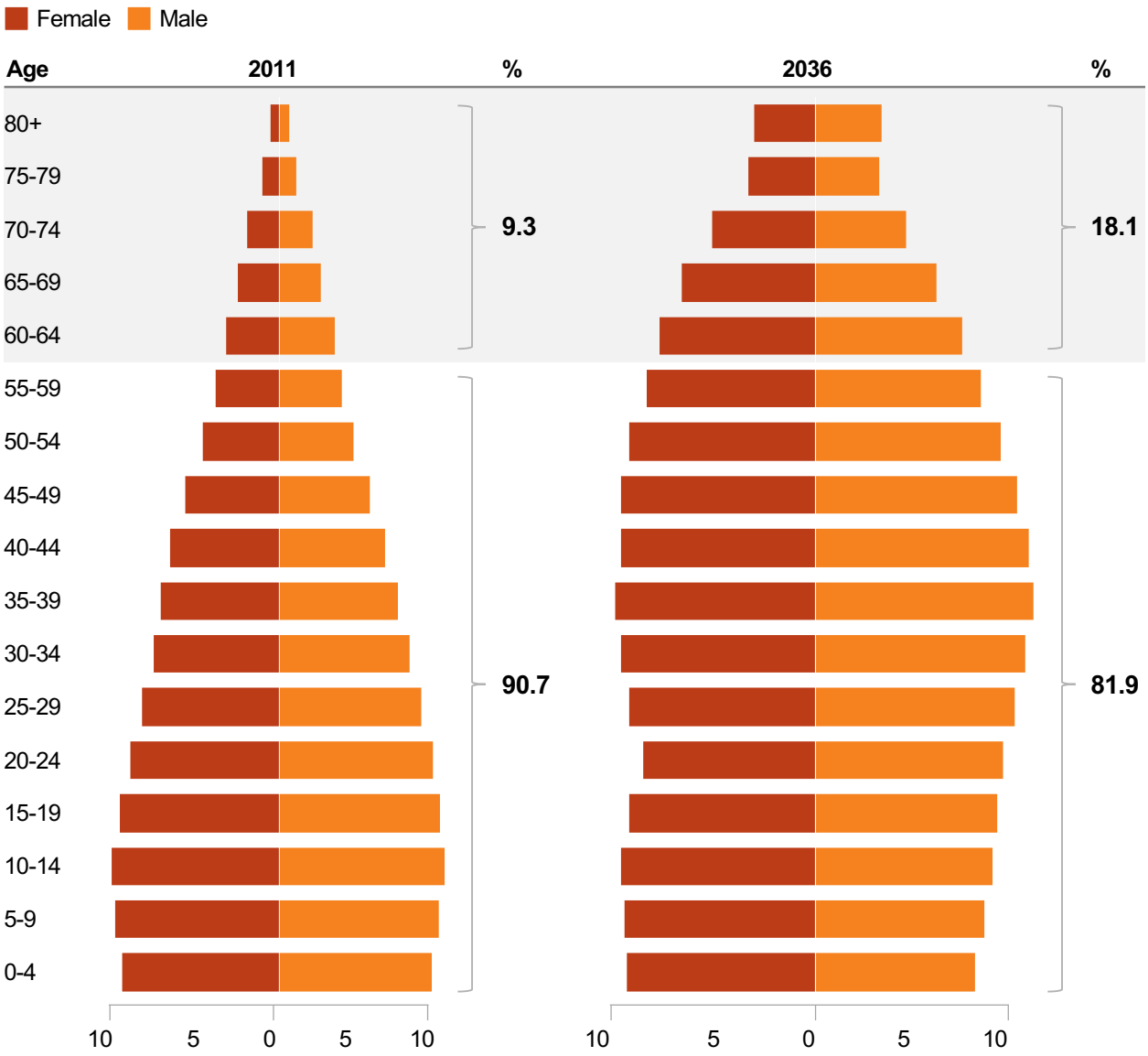
Evolving social structure and urbanisation: Changing family structures, migration, and socio-economic inequities will strain infrastructure and increase demand for health services, especially mental health.

By 2047, India's urbanisation rate is expected to grow by 51%, with mental health issues potentially causing economic loss of USD 2-3 billion by 2030

[1] National Institute of Nutrition
[2] The Pradhan Mantri Poshan Shakti Nirman
Source: Allied Market Research; Grand View Research, 2021; Census of India; World Health Organisation; Odisha Economic Survey

An ageing population in the State is a primary concern, with the proportion of elderly residents (over 60) in Odisha projected to rise from 9.3% in 2011 to 18% in 2036. Such a transition to a higher ageing population will significantly increase the demand for elder healthcare services.

EXHIBIT 11.4

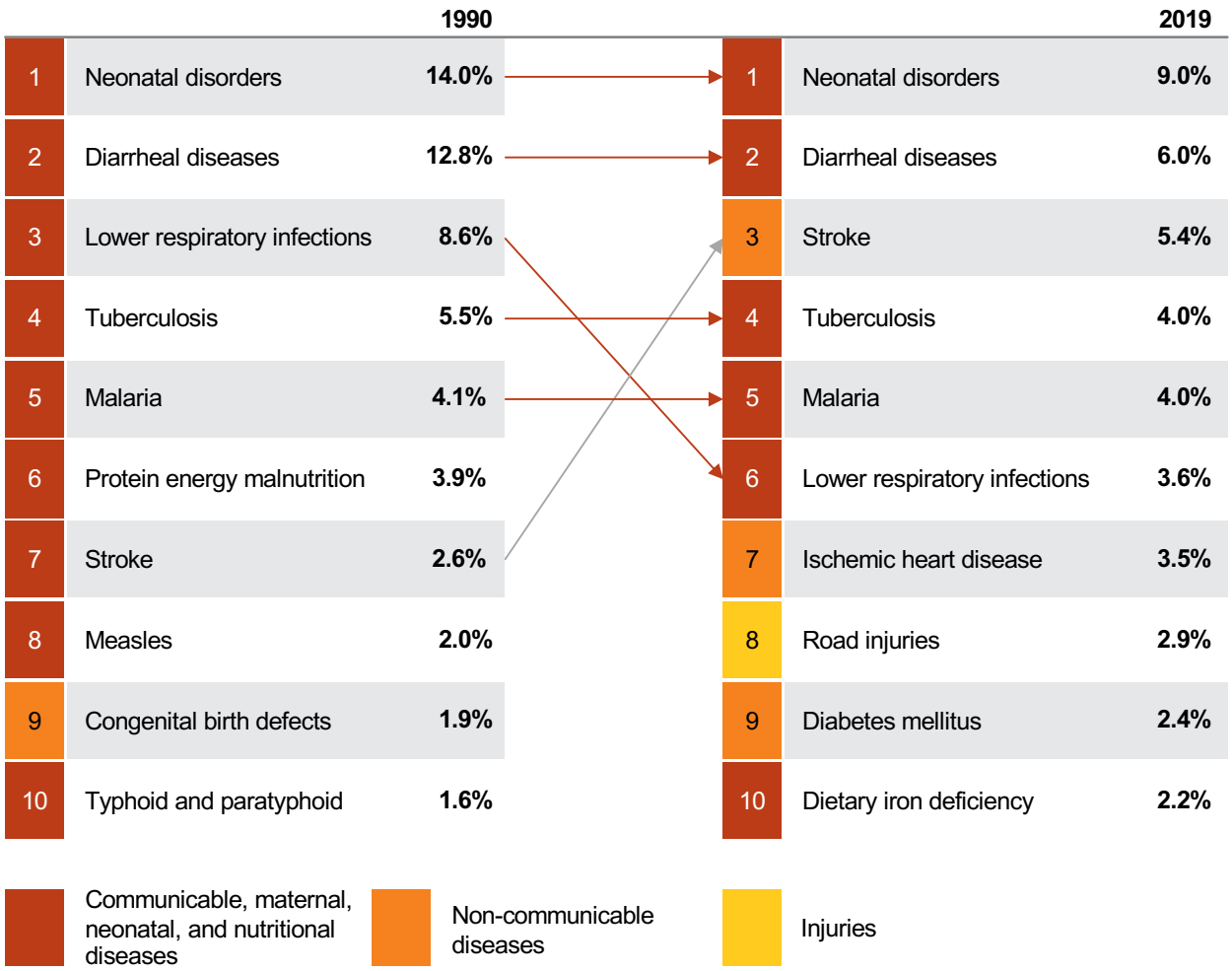


Source: Population Projections for India and States 2011-2036, Ministry of Health and Family Welfare, Government of India

Similarly, there has been a recurrent shift in disease burden towards non-communicable diseases (NCDs) and injuries, as observed in the shift in data below (Exhibit 11.5) on disability-adjusted life years (DALYs). This necessitates a strategic focus on chronic disease management, advanced medical care, improved emergency services and preventive health measures.

EXHIBIT 11.5

Shift in disease burden towards more NCDs and injuries in Odisha



Source: PHFI, IHME, ICMR, MOHFW, 2019

2. Vision and outcomes

Odisha has already established several comprehensive State-level healthcare programmes, but for the future, it aspires for holistic health for its citizens including fitness and nutrition. Inclusion and equity will be the cross-cutting principles with focus on gender, marginalised and rural communities, and persons with disability.

EXHIBIT 11.6

VISION 2047

Enable holistic health and well-being of all citizens through an inclusive, resilient and tech-enabled healthcare system, along with dedicated focus on nutrition

The State envisions achieving the following outcomes:

EXHIBIT 11.7

Key outcomes		Unit	Current[1]	2029	2036	2047
Maternal mortality ratio		No. of maternal deaths per one lakh live births	119	<100	<50	<5
Early neonatal mortality rate		Per 1,000 live births	21	10	6	1
Neonatal mortality rate		Per 1,000 live births	27	12	8	2
Infant mortality rate		Per 1,000 live births	36	14	8	2
Under 5 mortality rate		Per 1,000 live births	41	20	10	5
Institutional births		%	89	>90	>99	>99
Emergency response time		mins	24	18	<10	Maintain status
PHCs (Primary Healthcare Centres) functional as per Indian Public Health Standards (IPHS)		Per 1,00,000 population	2.7	3	3.5	4
CHCs (Community Healthcare Centres) functional as per Indian Public Health Standards (IPHS)		Per 1,00,000 population	0.8	1	1.5	2
HSCs (Healthcare Sub Centres) functional as per Indian Public Health Standards (IPHS)		Per 1,00,000 population	14	16	19	25
Doctors		Per 1,000 population	0.2	0.3	0.6	1
Reduction in out-of-pocket expenditure from current levels		%		15	35	75
Life expectancy		years	70.3	72	75	80
Climate-change prepa-redness	Disaster resilient health infrastructure	%	NA	NA	100%	Maintain status
Anaemia reduction	Children aged 6–59 months who are anaemic (Hb < 11.0 g/dl)	%	64.2	<50	<25	<5
	Women aged 15–49 years who are anaemic	%	64	<50	<25	<5
	Men aged 15–19 years who are anaemic (Hb < 13.0 g/dl)	%	30	<23	<12	<3

[1]Baseline data considered for 2020

Source: NITI Aayog, National Health Profile 2023, Our World In Data, OECD Health Statistics 2023, National Family Healthy Survey – 5 (2019-21), Swachh Survekshan Grameen 2022

3. Key initiatives

To achieve the Vision and outcomes, following key initiatives will be undertaken:

EXHIBIT 11.8

	What will the State do?	How will the State do it?
Comprehensive health data system	Develop a unified, real-time, interoperable data ecosystem for evidence-based healthcare policy and decision making	Data command centre under the Health Directorate
Preventive, promotive and palliative healthcare programme	Develop a marquee preventive, promotive and palliative health care programme with focus on healthcare protection and healthcare promotion; develop AYUSH ecosystem in the State	Revamp Ayushman Arogya Mandirs and equip them to provide extensive suite of health promotion, prevention, palliative, and AYUSH services to the community
World-class elder care delivery system	Transform healthcare approach to focus on continuous care for the rising elderly population	Strengthen care delivery at all levels and launch initiatives to enable elderly citizens to live a dignified life and contribute meaningfully to the society
Climate change and infectious diseases' preparedness	Develop a climate-resilient health system to address disasters and emerging or re-merging infectious diseases including pandemics	Ensure system preparedness and service delivery planning in extreme disaster risks along with disaster resilient health infrastructure; strengthen pandemic and infectious disease response preparedness
Ease of accessing emergency services	Reduce impact on disability and loss of life from injuries, and emergencies	Scale up trauma care centres and ambulance fleet; build trauma-focused human resources
Capability and capacity building	Transition from doctor-centric to team-centric model for healthcare human resources to ensure universal care with a focus on community action	Skill existing and new cadre of medical and allied health professionals, caregivers and the community through targeted skilling pathways
Technology for service delivery	Enable phy-gital service delivery by adopting advances in technology and AI across the full patient journey	Develop model smart primary, secondary and tertiary health centres starting with digital dispensaries at the primary level

In addition, the State will

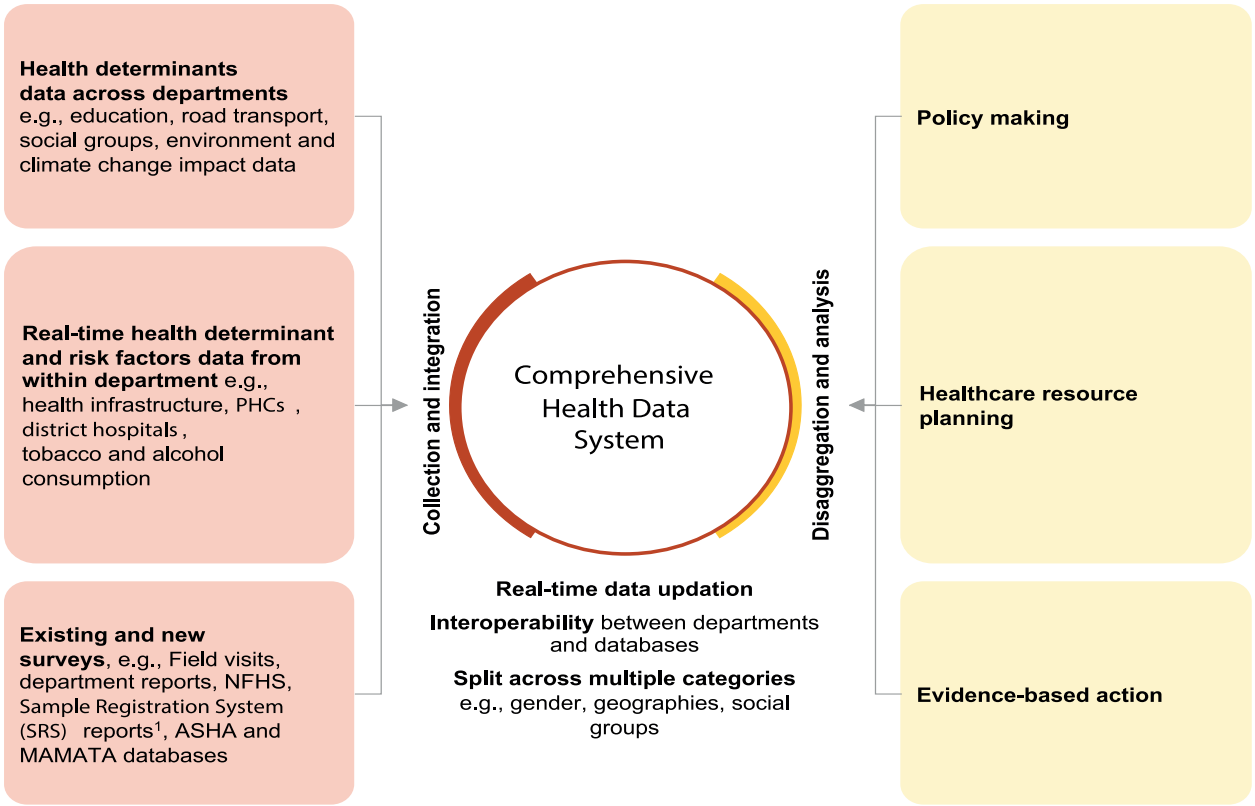
- **Continue to reduce out-of-pocket expenditure** through scaling up of current schemes and programmes for health coverage and affordable medicines
- Strengthen the regulatory frame work for ensuring quality drugs, diagnostics and food safety
- **Develop advanced tertiary care ecosystem through**:
  - A medi-city in the proposed 'Bhubhaneswar-Cuttack-Puri-Paradip' quad city region (covered under the chapter 'Urbanisation as a growth engine')

3.1 Comprehensive health data system

The State will launch a centralised healthcare data system to inform health policy decisions, grounded in real world evidence and customised to the populations needs.

EXHIBIT 11.9

An integrated health data system offers several benefits

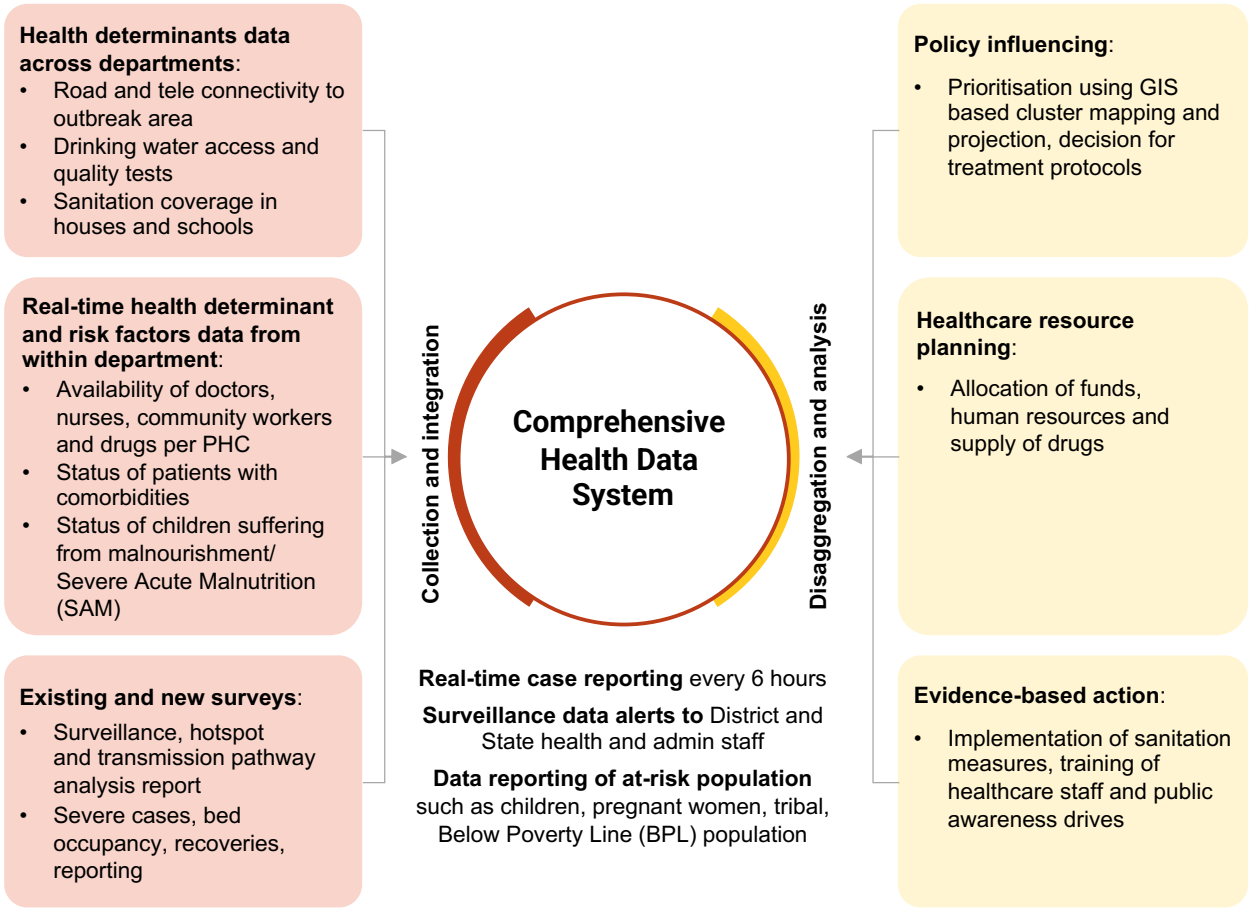


[1]National Family Health Survey, Sample Registration System statistical report

Consider the case example below, which describes how such a system will be leveraged by the State to manage a diarrhea outbreak. From identifying risk factors such as doctor availability, number of children among patients to structuring logistics such as connectivity to outbreak area to understanding and monitoring transmission pathways, it will offer invaluable information to the Government in minutes, ensuring quick and quality decision making.

EXHIBIT 11.10

Case example: Leveraging health data system for managing a diarrhea outbreak



[1]Auxiliary nurses and midwives

Source: National Family Health Survey, Sample Registration System statistical report

3.2 Preventive, promotive, and palliative healthcare programme

The State will create an effective preventative care programme, covering three focus areas:

3.2.1 Healthcare protection

- **Conduct comprehensive health, and risk factor screenings** with a focus on non-communicable diseases (NCDs) and pre-conditions, followed by auto-enrolment in relevant care programmes
  - Screen for genetic disorders such as sickle cell anaemia and thalassemia, as well as emerging and re-emerging viral and zoonotic diseases prevalent in tribal and Particularly Vulnerable Tribal Group (PVTG) communities
- **Provide supplements** like iron, folic acid, and vitamins based on screening results
- **Ensure saturation of routine immunisation programme**
- Include **mental health screening and counselling** as part of the routine care
- Establish a **proactive NCD monitoring system** to analyse trends, detect, and manage risk factors for non-communicable diseases

3.2.2 Healthcare promotion

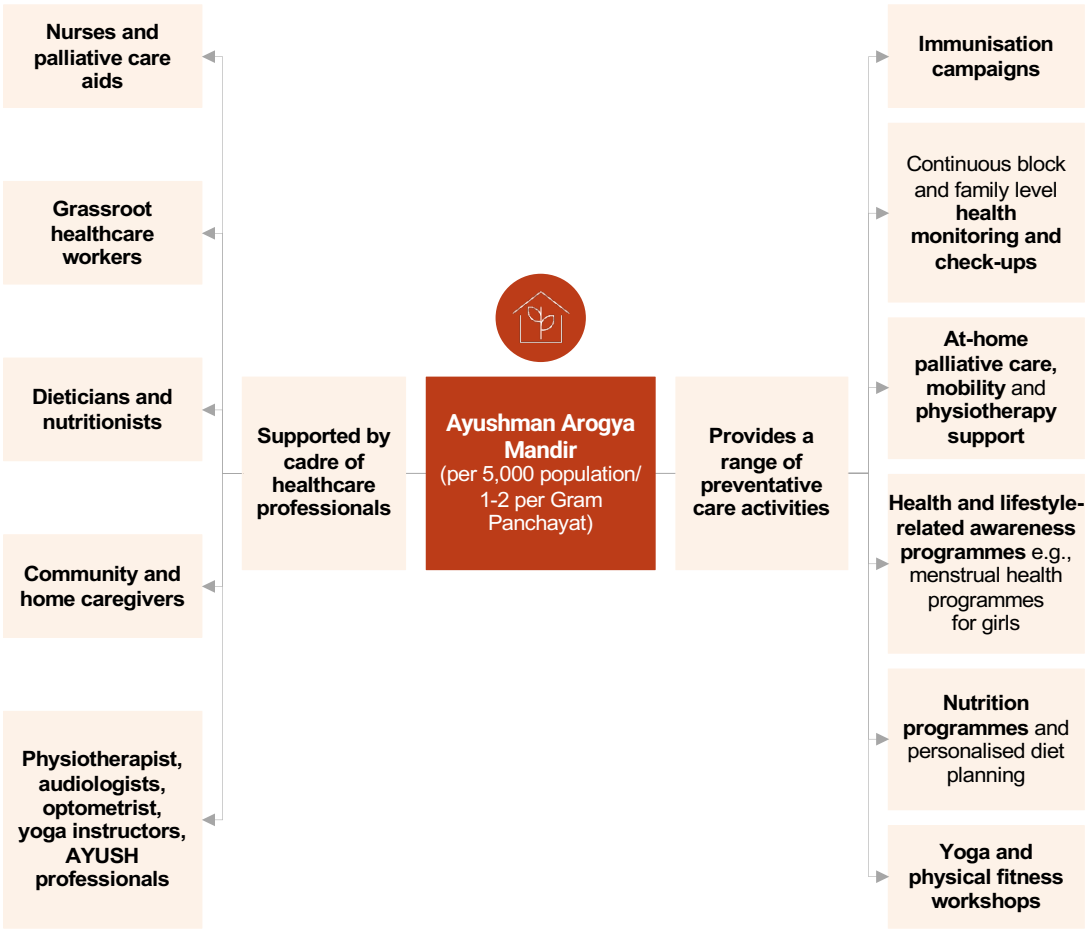
- Develop **customised health promotion programmes** for different age groups
- **Launch local awareness campaigns**, community healthcare programmes and personalised coaching for:
  - Lifestyle improvements like adoption of yoga, fitness activities, and locally available healthy foods (millets), etc. especially for adolescents
  - Enhanced hygiene and sanitation measures e.g., toilet usage
  - Engaging with issues related to adolescent, sexual and reproductive health in tribal with special focus on PVTG communities
- Offer counselling and referrals to **reduce substance abuse** (tobacco and alcohol)
- **Evaluate and explore options** such as health promotion tax (more than 30%), mandatory disclosure of content and compensation on sugary drinks and processed food products

3.2.3 Build Odisha as AYUSH hub

- **Establish a State-level institution** to undertake evidence generation and trials to codify Odisha's traditional medicine systems (especially tribal medicines), into treatment plans and medical products
- **Expand the footprint of AYUSH care**
- **Establish marquee institutions** across the State to train AYUSH practioners as well as centres for skilling AYUSH workers
- **Fomulate policy with fiscal incentives** to encourage manufacturing of AYUSH products leveraging Odisha's biodiversity
- Partner with travel aggregators, airlines, tour operators, and the media for **marketing campaigns to position Odisha as an AYUSH hub**

EXHIBIT 11.11

Odisha's preventative care programme will be delivered by revamping Ayushman Arogya Mandirs



3.3 Advancing Non-Communicable Disease Control and Elderly Health

By the year **2047**, Odisha will have achieved transformative milestones in the prevention, management, and control of **Non-Communicable Diseases (NCDs)**, alongside a comprehensive system for **healthy and dignified ageing**. The following strategic priorities will be realised to ensure a resilient, inclusive, and people-centric health system:

- **Enhance Life Expectancy Beyond 80 Years**
  - Odisha will strive to increase average life expectancy beyond **80 years**, with a concerted focus on **healthy ageing**. This will be driven by state-wide campaigns promoting **physical activity, balanced nutrition, mental well-being**, and **lifestyle modification**, aimed at reducing the NCD burden across all age groups.
- **Establish Integrated Geriatric and Elderly Health Care**
  - A dedicated framework for elderly health care will be developed, integrating all age-related disease control programs with **quality geriatric services**, accessible across both urban and rural Odisha. Special emphasis will be placed on **chronic disease management, functional independence**, and **psychosocial support**.
- **Strengthen NCD Management Across the State**
  - Odisha's public health system will be fully equipped to manage priority NCDs including **COPD, CKD, liver diseases (alcoholic and non-alcoholic), hypertension, diabetes, dyslipidemia, impaired hearing, cataract, and diabetic retinopathy**, through enhanced screening, diagnosis, treatment, and follow-up mechanisms.
- **Ensure Affordable Access to Essential Surgeries**
  - Advanced surgical interventions-such as **hip and knee replacements, cardiac surgeries,** and **stent implants**-will be made affordable and accessible, especially to the elderly and socio-economically vulnerable populations, through targeted financial protection schemes and expanded public-private partnerships.
- **Reduce Key Risk Factors of NCDs by 50%**
  - Odisha will achieve a **50% reduction** in major modifiable risk factors-**tobacco and alcohol consumption, sedentary behaviour, substance abuse, unhealthy diet, and chronic stress**-through community engagement, school and workplace wellness programs, and behaviour change communication at scale.
- **Decentralise Cancer Care to Every District**
  - Comprehensive **cancer services-including screening, early diagnosis, treatment, and post-treatment follow-up-will be made available in every district**, supported by regional cancer centres, mobile units, and tele-oncology services.
- **Scale Dialysis Infrastructure at CHC Level**
  - Every **Community Health Centre (CHC)** in Odisha will be equipped with **dialysis facilities**, ensuring that no citizen has to travel long distances to access renal care. This will be enabled through strategic investments and capacity building of trained personnel.

- **Expand Cataract and Cardiac Services at Sub-District Hospitals**
  - **Cataract surgeries** and **cardiac care services** will be operationalised at **sub-district hospitals**, with special outreach programs targeting tribal and remote geographies to ensure equitable access.
- **Establish COPD and Allergy Clinics at CHC Level**
  - **Spirometry testing, allergy clinics,** and **respiratory disease management units** will be standardised at CHC level to address the rising prevalence of **asthma, bronchitis, and other respiratory ailments**, especially in industrial and mining belts.
- **Provide Elderly and Palliative Care through Ayushman Arogya Mandirs**
  - Under the **Comprehensive Primary Health Care** framework, Odisha will deliver **elderly care and palliative support** through the **Ayushman Arogya Mandirs**, serving as the first point of compassionate care for chronic and end-of-life conditions across all districts.

3.4 World-class elder care system

To support the rising elderly population in the State, a two-dimensional plan to be followed:

3.4.1 Ensure adequate service availability across all levels

- Provide elder care at each Primary Health Centre (PHC), supported by mobile health units
- To serve rural and remote elderly populations
- Establish elder care units in sub-district hospitals and district hospitals with specialised healthcare professionals, such as physiotherapists
- Create a caregiver training curriculum and certification programme and train adequate workers and community members
- Establish a helpline and resource centre for caregiver assistance

3.4.2 Empower citizens to live with dignity and contribute meaningfully to society

- Ensure availability of assistive equipment for senior citizens, such as footwear and braces, through financial assistance or subsidies
- Provide age-friendly infrastructure for the elderly population including features such as railings and ramps
- Establish and promote senior citizen clubs and activity centres to encourage social engagement and physical activity in co-ordination with relevant departments
- Recognise model senior citizens in each village for healthy lifestyles, food habits, yoga, and exercise through awards and incentives
- Develop a network of meal delivery services tailored to senior dietary needs through Self Help Groups (SHG)

3.5 Climate-resilient health system

The State will make it a priority to protect vulnerable populations from climate-related health risks, ensuring healthcare services remain accessible during extreme events and mitigating the spread of diseases worsened by changing environmental conditions. This will be achieved through three sets of initiatives:

3.5.1 Building resilient health systems and monitoring for uninterrupted service delivery

- **System and infrastructure preparedness for extreme events**
  - Conduct regular hazard and risk assessment of existing infrastructure and prioritise upgrades of vulnerable infrastructure
  - Develop local climate-controlled storages and logistics coordination centres to ensure essential supply availability
  - Build and maintain road connectivity to high-risk areas and facilities with mapping of emergency routes
- **Conduct post disaster surveys** to assess and estimate impact on health determinants
- **Consistently monitor the impact of extreme climatic event** to measure intervention efficiency
- **Service delivery planning during disaster risk**
  - Develop a 'Search and rescue plan' (SAR) with technology integration – drones for surveillance and supply delivery, geolocation tools
  - Plan and deploy mobile health units to provide essential services
  - Provide comprehensive disaster response training (e.g. trauma care, psychology first aid) and simulations for SAR teams, healthcare and frontline community health workers
  - Establish emergency helplines for public support and conduct regular emergency response drills in at-risk areas

3.5.2 Strengthening public health emergency operations network for management of pandemics and infectious diseases

- **Pre-emergency**
  - Set up a 'Health Emergency Operation Centre' (HEOC), project management unit (State One Health Cell) at State-level and its branches at district level to monitor outbreak of prone diseases, disaster management, lab surveillance and zoonotic diseases
  - Establish surveillance systems for communicable and new infectious diseases to forecast and prevent outbreaks through understanding of environmental factors
  - Ensure state-of-the-art technology for early and effective disease detection (pandemic management, AI-based infectious disease and epidemic surveillance)

- **During emergency**
  - Develop comprehensive public health emergency plans for pandemics
  - Form specialised, multi-disciplinary rapid response medical teams and command centres
  - Develop community engagement standard operating procedures (SOP) and guidelines for fund allocation, isolation facilities, and vaccination campaigns
  - Set up specialised risk communication unit for dissemination of information
- **Post emergency**
  - Conduct comprehensive review of response strategy
  - Synthesise and document health system learnings for next response
  - Implement continuous training and simulation programme informed by best practices and learnings

3.6 Ease of accessing emergency services

The State will actively address rising injuries, injuries related death and other emergency needs, to ensure ease of accessibility for all its citizens

3.6.1 Scale up the number of ambulances (with trained technicians for pre-hospital trauma care) available for dispatch, through Government-owned, PPP and corporate empanelment routes

3.6.2 Ensure adequate regional distribution and positioning of ambulances in black spots and accident-prone areas through integrated command centre

3.6.3 Expand trauma care centres across State in a phased approach, based on gap analysis, especially along State and district highways (saturated currently along national highways)

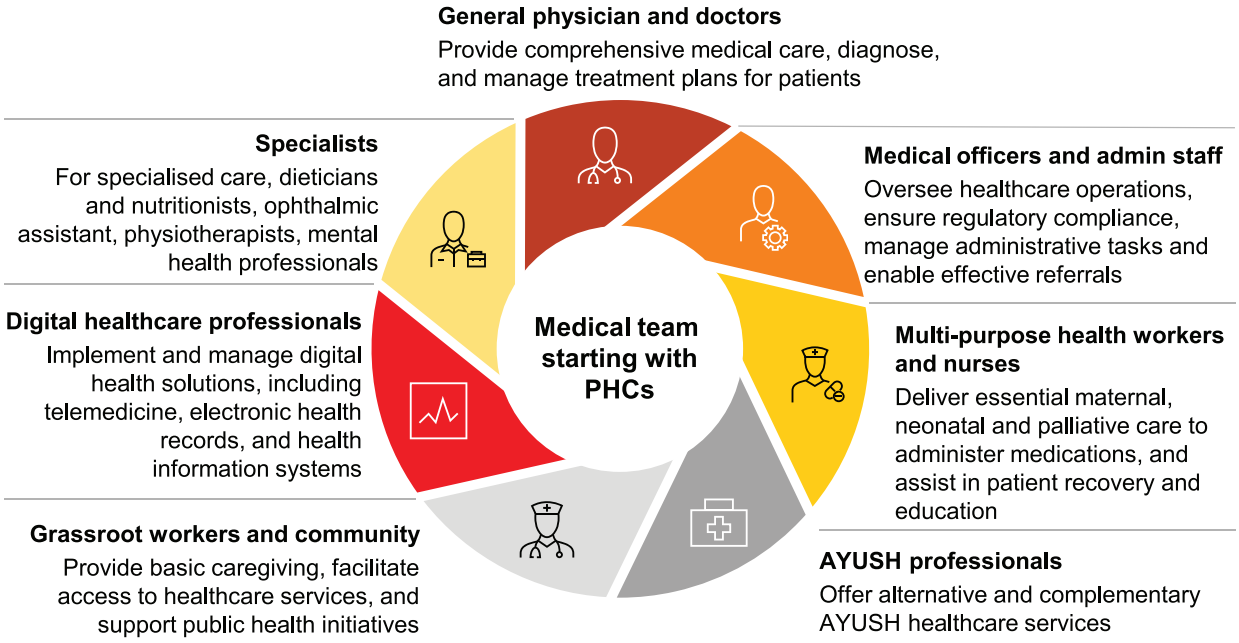
3.6.4 Train and create adequate human resources for new ambulance and trauma care capacities, including paramedics and support technicians

3.6.5 Generate awareness and implement behavioral nudges to **increase full body organ donations**

3.7 Doctor-centric to team-centric human resources mode

The State envisions transitioning from a doctor-centric to a team-centric model to enhance patient outcomes, improve resource efficiency, and meet rising healthcare demands. Such a model relies on the expertise of diverse healthcare professionals—such as nurses, therapists, and community health workers— allowing for **more comprehensive, coordinated, and accessible care while relieving burden on doctors**, as shown below:

EXHIBIT 11.12



Each cadre of medical professionals will need to be supported through skilling pathways. Transform health workforce through high quality, on-the-job training linked to comprehensive performance management.

3.7.1 **Ensure continuous learning for all doctors and allied health professionals through world-class training courses** in partnership with national/international eminent institutions

- Mandatory periodic trainings on emerging priorities (e.g. specific care – geriatric, palliative, pain management) with custom trainings on lagging areas in performance (e.g. soft skills, management skills)
- Decentralise pre-service education by utilising State and district institutions such as hospitals and community health centres
- Create comprehensive performance and learning management system by quality standards and SOP monitoring, and regular competency assessment

- Develop lateral pathways to move to administrative, teaching and research roles

3.7.2 Expand doctor cadre through upgradation of existing medical colleges to ensure robust healthcare delivery and specialised support in areas of future demand

3.7.3 Expand general duty medical officer cadre to manage and provide primary health care services

- Strengthen clinical specialist cadre to provide specialist secondary and tertiary care such as ophthalmologists, and physiotherapists
- Consolidate the public health cadre to plan, manage, monitor, and evaluate all preventive, promotive, and curative services, combining public health and management expertise

3.7.4 Expand training institutes and diversify nurse cadre to play a key role in healthcare delivery

- Strengthen general duty nursing officers providing primary healthcare services
- Develop clinical specialist nursing officers through training for assisting on secondary and tertiary care
- Introduce training for public health nursing officers to assist specialist doctors in planning and managing population-level health services
- Scale up and accelerate training of multipurpose health worker to implement midwifery services within the health system

3.7.5 Develop a skilling programme for adolescent girls and community to cater to CARE economy; detailed in the chapter 'Skilled in Odisha, Skilling for the world'

3.8 Technology-enabled patient journey

Creating a hybrid (physical and digital) patient care journey would bridge accessibility gaps in Odisha's healthcare services, ensuring lower costs, better health outcomes, improved patient experience, and data-driven care:

EXHIBIT 11.13

Referral programme	Appointment scheduling, pre-consultation preparation	Health and disease management	Preventive screening and diagnosis	Continuous monitoring and follow-ups
Develop a proactive, rationalised and digitally enabled referral and counter referral system for secondary, tertiary and critical care **Ensure health ID linkage** with feedback loops, real-time information updation	**ABHA ID** linked portable health records for **seamless digital governance and access** e.g., diagnosis e-reports, e-prescriptions, e-claims **Online appointment** scheduling through apps, portals for **near zero waiting time** **Digital patient registration** and pre-visit formalities e.g., automated health record, personal information and insurance details access	**AI-based health records** analysis for advanced medical decision-making and automated **enrolment into screenings** **E-prescription generation** and linkage with pharmacy Gen-AI assist to doctors for generating **automated visit summary** **Digital hospital management systems** e.g., staff registry, drug registry, digital twins **Advanced point-of-care devices** to allow rapid minimally invasive tracking	**Text-based reminders** for preventive screenings, annual medical checkups and vaccinations **Teleconsultations** for screening using AI and call centres before appointments to secondary and tertiary centres	Regular **telehealth-based follow-ups** and automated digital reminders **Personalised nudges** for fitness tracking, diet management and medicine in-take **Automated refill** and home delivery of drugs Digital **grievance redressal systems**

Low out-of-pocket costs

Better health outcomes

Better patient experience, care and satisfaction

Insights to improve future member experience

While the State will seek to implement this end-to-end hybrid model across all levels of care, priority will be to develop 'Digital dispensaries' at primary healthcare level

CHAPTER 12

STRENGTHENING NUTRITIONAL WELL-BEING FOR ALL

Summary

Nutrition is the foundation of human development, economic progress, and social equity. A well-nourished population underpins a healthy, productive, and inclusive society. **Odisha has made remarkable progress in improving nutrition outcomes through flagship initiatives such as Saksham Anganwadi & Poshan 2.0, Mid-Day Meal (MDM) schemes, Mukhyamantri Sampoorna Pushti Yojana (MSPY), and Poshan Abhiyaan**. These programmes have enabled the State to outperform the national average across critical nutrition indicators, including wasting, stunting, and underweight.

However, challenges persist in ensuring equitable access to nutritional services, particularly for marginalised and vulnerable communities. The Government of Odisha remains steadfast in its **commitment to addressing these gaps by adopting a holistic approach to ensure nutritional security for all and making sustainable and inclusive progress a reality for every citizen**.

With this, Odisha aspires to gain global recognition for its sustainable and inclusive strategies to achieve nutritional security.

By 2047, the State envisions the following outcomes

- Be among the top three States in India in terms of maternal and child nutrition
- Ensure 100% access to high-quality nutrition interventions for marginalised and vulnerable populations, including those in remote and hard-to-reach areas
- Achieve the near elimination of severe acute malnutrition (SAM) in children through comprehensive monitoring and targeted interventions
- Ensure 95% of children are classified as normal across all the three key nutrition parameters of wasting, stunting, and underweight
- Reduce the prevalence of anaemia by 90% among women, adolescents, and children

Key initiatives to achieve the outcomes

Comprehensive nutrition programmes

- Implement targeted nutritional services for mothers, young children, and adolescents, addressing their specific nutritional requirements
- Enhance maternal and adolescent health to break inter-generational cycles of malnutrition

Sustainable food systems for nutrition

- Diversify agricultural production to include nutrient-rich crops such as millets, legumes, and leafy vegetables
- Promote food fortification and strengthen traditional food systems to rediscover and mainstream Odisha's traditional nutritious diets
- Collaborate with local farmers producer groups to ensure the availability of diverse and affordable nutritious foods

Robust community engagement and capacity building

- Implement Social Behaviour and Change Communication (SBCC) strategies to promote positive nutrition practices at the household and community levels
- Empower field-level functionaries, women self-help groups (SHGs), and other community leaders to act as agents of change
- Provide extensive capacity building programmes to ensure optimal utilisation of available resources

Institutional reforms and policy development

- Strengthen governance mechanisms to coordinate multi-sectoral nutrition initiatives across departments and stakeholders
- Develop and implement policies to ensure equitable access to nutrition services for all citizens, with a focus on the most marginalised communities

Technology integration for enhanced delivery

- Leverage technology to introduce innovative monitoring tools and ensure real-time tracking of nutrition outcomes
- Implement data-driven decision-making systems to improve programme efficiency and ensure timely interventions

Over the next 24 months, the State will

- **Establish 'Odisha Pushti Mission'** to strengthen nutritional governance and reduce malnutrition through coordinated efforts at the State, district, and block levels
- **Monitor and report vulnerabilities** to improve the nutritional status of children, adolescent girls, and pregnant women, enabling targeted and evidence-based interventions
- **Revamp the Take Home Ration (THR) Programme** to enhance its quality, efficacy, and transparency, ensuring better delivery of services to beneficiaries

The State is committed to building a healthier and more equitable society by prioritising nutrition as a key pillar of development. By leveraging community participation, institutional reforms, and innovative technologies, the State aims to set benchmarks in achieving nutritional security for all.

Through its sustained focus on maternal and child health, equitable access to quality nutrition, and the empowerment of marginalised groups, Odisha is paving the way for a brighter and more inclusive future. The Government's steadfast efforts will ensure that every citizen, regardless of geography or socio-economic background, can thrive in a healthy and productive environment, contributing to Odisha's growth and prosperity.

1. Context

Nutrition is fundamental to human development, economic growth, and social equity, serving as the foundation for a healthy and productive society. In Odisha, a State rich in cultural heritage and natural resources, addressing nutritional challenges is pivotal to realising the Vision of a progressive, equitable, and sustainable future. The State's journey towards nutrition security involves tackling persistent malnutrition, ensuring access to safe and nutritious food, and empowering communities with knowledge and resources to make informed dietary choices.

Despite significant progress in addressing stunting, undernutrition, and micronutrient deficiencies through targeted government initiatives such as the Mid-Day Meal (MDM) Scheme, Mukhyamantri Sampoorna Pushti Yojana (MSPY), Saksham Anganwadi, and POSHAN 2.0, notable gaps persist. Rural-urban disparities, gender-based inequalities, and the heightened vulnerability of tribal communities continue to deepen the nutritional divide. Addressing these challenges requires inclusive, community-driven approaches that prioritize equity and reach the most underserved populations.

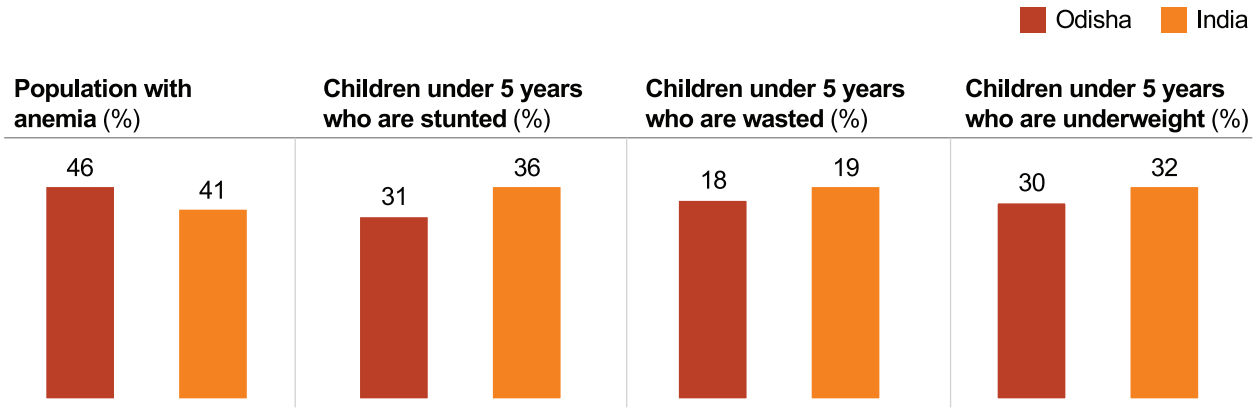
The recently launched SUBHADRA is an ambitious step forward, aiming to provide financial support and promote digital literacy and transactions among women to enhance their financial inclusion. This financial assistance is aimed at improving the overall health, education, and nutrition of the beneficiaries and their family members by enabling them to meet essential needs and invest in productive activities. It would also provide them with a financial safety net to meet their nutritional and other needs (Detailed in chapter 'Women-led development').

1.1 Nutritional scenario in Odisha

Odisha has made notable progress in combating malnutrition and improving the nutritional status of its population over the past decades (Exhibit 12.1). However, the State continues to face significant challenges, particularly among vulnerable groups such as children, women, and tribal communities. The nutrition scenario in Odisha is marked by a combination of achievements, persistent gaps, and emerging issues, which form the foundation for the Vision 2047 roadmap.

EXHIBIT 12.1

State is performing better than the national average on the three nutritional parameters for children with a scope of improvement in indicator(s) for women



Some of the notable achievements include:

- **Reduction in stunting and wasting**: According to NFHS-5 (2019-21), the prevalence of stunting among children under five has reduced to 31%, compared to 34% in NFHS-4 (2015-16). Similarly, wasting has decreased from 20.4% to 18.1%, reflecting the impact of multiple interventions like Saksham Anganwadi & Poshan 2.0, and MSPY[1], etc. Implementation of Purna Aahara for children with SAM has significantly improved cure rates and has resulted in better nutrition outcomes for children under 5 years
- **Improved maternal nutrition**: There has been an increase in institutional deliveries (92%) and antenatal care coverage (92.8%), contributing to better maternal nutrition outcomes. Initiatives such as the Janani Suraksha Yojana and MAMATA scheme have played a critical role
- **Improved dietary diversity**: There has been an improvement in dietary diversity with the setting up of Mo Upakari Bagichas or Kitchen gardens at the Anganwadi Centres and at the households of pregnant women and children with Severe Acute Malnutrition (SAM). Saplings have been distributed to the Anganwadi Centres and other beneficiaries by the Department of Horticulture
- Department of Fisheries and Animal Resources Development has **distributed poultry birds (chicks) to the households of pregnant women for rearing and consumption of eggs**

[1] Mukhyamantri Sampoorna Pushti Yojana

Source: Odisha Economic Survey 2024-25, NFHS-5, Odisha SDG report 2023-24, Statistical Report 2020; PHFI, IHME, ICMR, MOHFW

These interventions have resulted in significant improvement in the nutritional status of the vulnerable population.

1.2 Current efforts

Odisha has undertaken a wide array of impactful initiatives to improve nutritional outcomes across the State. These programmes aim to address malnutrition, promote health and well-being, and ensure access to quality nutritional interventions for all, particularly for marginalised and vulnerable populations. Below is an overview of key interventions and initiatives:

Key nutrition interventions

- **Supplementary Nutrition Programme**: A core component of the POSHAN 2.0 scheme, this programme provides nutritional support to children under six years, pregnant women, and lactating mothers. Beneficiaries receive take-home rations, morning snacks, and hot-cooked meals enriched with essential nutrients to meet dietary requirements, reducing malnutrition and improving overall health outcomes
- **Mukhyamantri Sampoorna Pushti Yojana (MSPY)**: Complementing the Supplementary Nutrition Programme, MSPY benefits over 18.5 lakh individuals, particularly in remote and hard-to-reach areas. Adopting a lifecycle approach, MSPY focuses on reducing malnutrition among adolescent girls (15–19 years), pregnant and lactating women, and children under six years, especially those facing severe or moderate malnutrition
- **Focus on the critical 1,000-day window**: Recognising the importance of the first 1,000 days of life, starting from pregnancy to a child's second birthday, Odisha has achieved marked improvements in early initiation of breastfeeding, exclusive breastfeeding, complementary feeding, and continued breastfeeding
- **Complementary feeding through Annaprashan Divas**: Complementary feeding is celebrated through Annaprashan Divas, observed on the second Thursday of each month at Anganwadi Centres. Mothers and caregivers bring six-month-old infants for a ceremony marking their first solid food intake, accompanied by education on feeding practices, recipe demonstrations using local foods, hygiene awareness, and distribution of Take Home Rations
- **Spot feeding**: Nursing mothers and children (six months to three years) are served boiled eggs three times a week at Anganwadi Centres to ensure targeted nutritional coverage
- **Pada Pushti Karyakram**: This initiative ensures hot-cooked meals for pre-school children aged 3–6 years in remote and inaccessible areas, served directly in hamlets or tagged villages
- **Purna Aahara**: Focusing on community-based management of Severe Acute Malnutrition (SAM), this initiative provides augmented take-home ration and eggs for 112 days. Nutritional support is complemented by awareness campaigns for caregivers and families

- **Ojan Utsav**: Held at Anganwadi Centres, Ojan Utsav enables periodic growth monitoring of children, ensuring accurate measurements and identifying left-out cases to address nutritional gaps
- **Nutrition budgeting**: Odisha is a pioneer State introducing the nutrition budget to map and align nutrition-specific and nutrition-sensitive interventions across departments, enabling effective resource allocation and programme delivery
- **ADVIKA programme**: ADVIKA adopts a comprehensive approach to adolescent health, providing iron and folic acid, calcium, and deworming tablets, along with Hb testing for girls. It also integrates education on menstrual hygiene, nutrition, and health through a convergence with the Department of Health and Family Welfare
- **Micronutrient supplementation**: Expanded distribution of iron-folic acid (IFA) tablets and Vitamin A supplementation addresses anaemia and vitamin deficiencies, particularly among children and pregnant women
- **Enhanced food security**: A robust Public Distribution System (PDS) ensures food security by providing rice, wheat, and pulses to vulnerable populations, particularly during crises like the COVID-19 pandemic
- **Dietary diversity and traditional foods**: The State promotes dietary diversity through nutri-gardens at Anganwadi Centres, encourages the inclusion of millets in the Supplementary Nutrition Programme, and supports the reintroduction of traditional diets rich in nutrients

Behavioural change and community engagement

These nutrition interventions are reinforced with **Information, Education, and Communication (IEC)** and **Social Behaviour and Change Communication (SBCC)** strategies to drive community awareness and promote sustainable behavioural changes.

- **Jan Andolan Campaigns**
  - **Rashtriya Poshan Maah**: A month-long campaign in September, focusing on good nutrition practices and behaviours
  - **Poshan Pakhwada**: A fortnight-long campaign in March, with impactful community outreach and awareness activities
- **Community-Based Events (CBEs)**: Organised twice a month at Anganwadi Centres, CBEs leverage traditional milestones to promote maternal and child health. Key events include:
  - **Godbharai/ Sadakhia**: Baby shower ceremonies to encourage antenatal care
  - **Anna Prashan Diwas**: Initiation of complementary feeding of children

Pathway to enhanced impact

The above initiatives have made significant contributions for improving nutrition outcomes and delivering high-quality services to citizens across Odisha. However, there remains scope for further enhancement by:

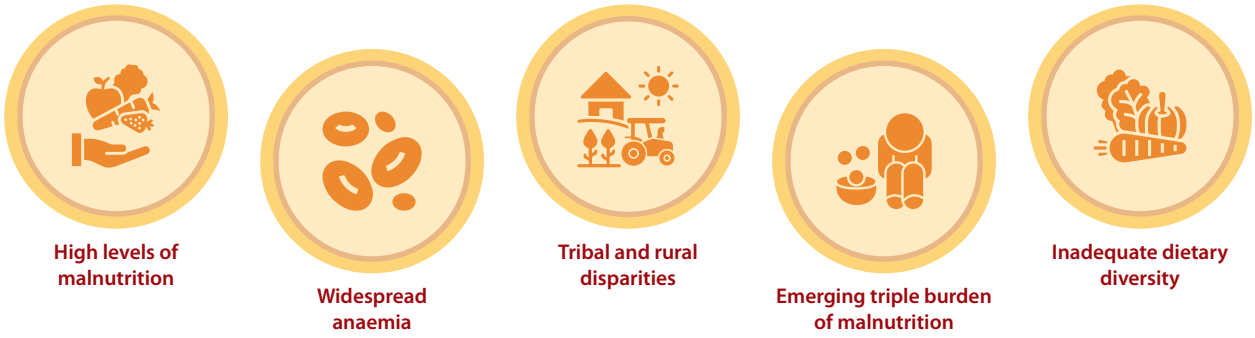
- Strengthening monitoring and evaluation mechanisms to measure programme impact more effectively and introduce subtle changes for improved outcomes
- Scaling innovative practices and expanding coverage to include the most vulnerable communities
- Enhancing inter-departmental collaboration to ensure holistic and inclusive delivery of nutritional interventions

Through these sustained efforts, the Government of Odisha reaffirms its commitment to achieving comprehensive nutritional security, building a healthier and more prosperous future for all citizens.

1.3 Key challenges

Odisha confronts substantial challenges in maternal and child nutrition, characterised by high rates of stunting, undernutrition, low birth weight, and anaemia. These challenges are compounded by inter- and intra-district variations, hard-to-reach areas, low female literacy, and service delivery gaps. Tackling these problems requires a comprehensive approach that addresses the immediate, underlying, and basic causes of malnutrition.

EXHIBIT 12.2



- **High levels of malnutrition**: Despite progress and performing better than the national average, 31.0% of children under five remain stunted, 18.1% are wasted, and 29.7% are underweight
- **Widespread anaemia**: Anaemia continues to be a significant public health challenge in Odisha, affecting individuals across all age groups. According to NFHS-5 (2019-21), anaemia prevalence among women (64.2%), adolescent girls aged 15-19 years (65.2%) and children (64.2%) remains alarmingly high, indicating persistent micronutrient deficiencies that require urgent attention
- **Tribal and rural disparities**: Malnutrition rates are disproportionately high in tribal and rural areas due to factors like poverty, low dietary diversity, and limited access to health services
- **Emerging triple burden of malnutrition**: Odisha is witnessing a triple challenge of malnutrition, rising cases of under-nutrition and over-nutrition and micronutrient deficiencies particularly in urban areas, due to changing lifestyles and dietary patterns
- **Inadequate dietary diversity**: Diets in many households remain cereal-dominated, with insufficient intake of fruits, vegetables, and protein-rich foods, leading to deficiencies in essential nutrients

1.4 Key trends

Global and national nutrition trends can significantly impact Odisha's landscape by shaping policy directions, funding priorities, and technological advancements. Some of these are captured below:

EXHIBIT 12.3

Focus on sustainable diets: The plant-based food market is projected to grow at an 11% CAGR between 2021-30, driven by increasing consumer demand for environmentally friendly, plant-based alternatives

Urbanisation and changing dietary patterns: India's urban population is expected to reach 60 crore by 2031, which will increase the demand for packaged, processed, and convenience foods, contributing to the rise of non-communicable diseases (NCDs). In fact, in 2019, 28% of Indian adults were overweight or obese

Technology in nutrition delivery: Digital platforms like NIN's[1] NutriApp and artificial intelligence-based services are providing nutrition guidance and tracking tools. Additionally, the introduction of blockchain for food traceability is enhancing transparency in food supply chains, helping consumers make informed decisions about food sourcing and safety

Millets - from local grains to global superfoods: Millets, or 'Shree Anna', are gaining global recognition as nutritious, sustainable, and climate-resilient crops. Promoted under India's International Year of Millets 2023, these traditional grains are driving 'eat local' movements and increasingly finding a place in urban diets

Expansion of fortification programmes: PM POSHAN[2] scheme has already begun distributing fortified rice in several States, including Odisha, to combat anemia and other deficiencies. Additionally, biofortification efforts, such as the promotion of iron-rich rice varieties, are being scaled up to improve nutritional outcomes

[1] National Institute of Nutrition
[2] The Pradhan Mantri Poshan Shakti Nirman
Source: Allied Market Research; Grand View Research, 2021; Census of India; World Health Organisation; Odisha Economic Survey

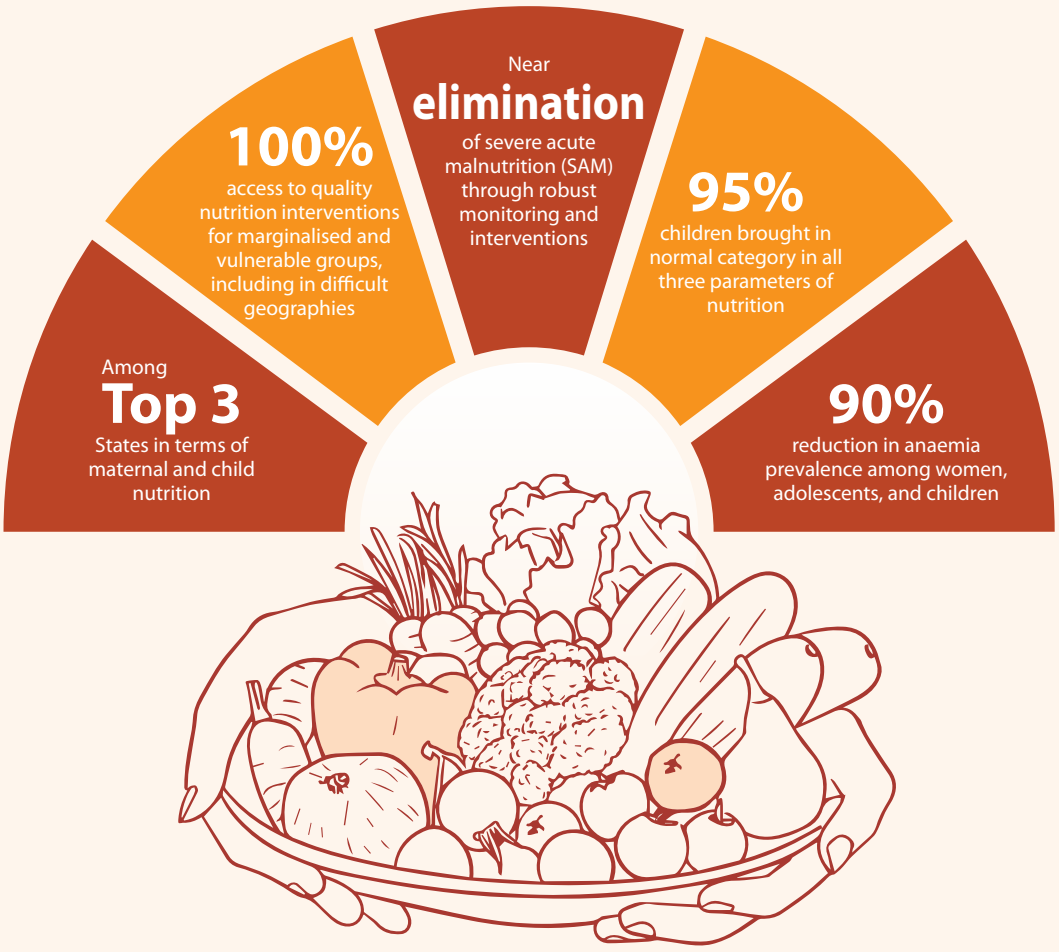
2. Vision and outcomes

By investing in nutrition-sensitive agriculture, promoting traditional diets, and addressing lifestyle-related health issues, Odisha aspires to become a model for nutrition resilience in India. The Vision for 2047 recognises that nutrition extends beyond food availability. It encompasses food diversity, cultural relevance, and sustainability, aligning with global commitments such as the Sustainable Development Goals (SDGs). With a focus on innovation, community engagement, increased women economic participation, and evidence-based policymaking, the nutrition agenda for Odisha in Vision 2047 is not just about tackling current challenges but building a future where nutrition drives human potential and accelerates inclusive growth.

EXHIBIT 12.4

VISION 2047

Attain global recognition for sustainable and inclusive approach to achieving nutrition security



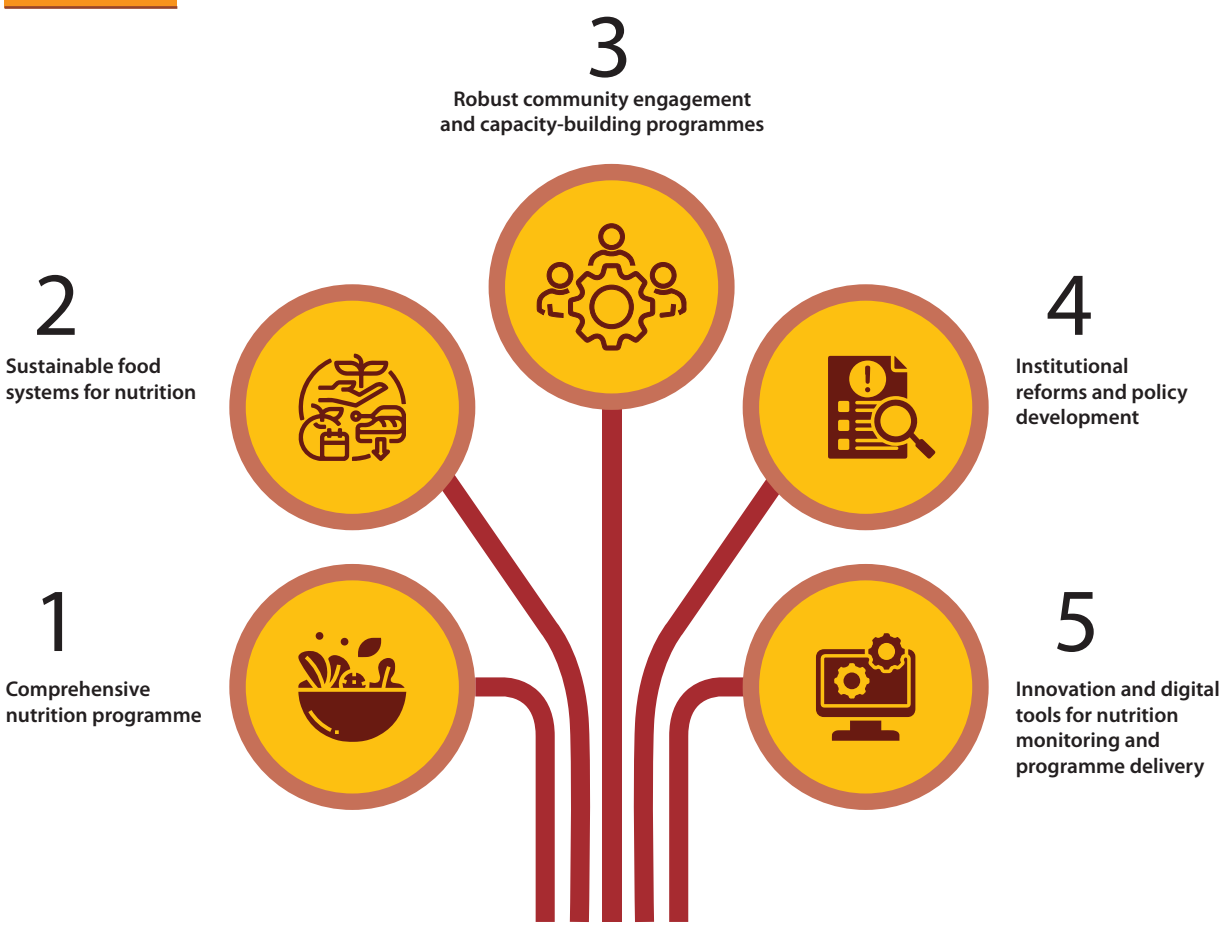
The State envisions achieving the following outcomes:

EXHIBIT 12.5

Key outcomes	Unit	Current	2029	2036	2047
Children under five who are stunted	%	31	25	15	<2.5
Children under five who are wasted	%	18	15	12	<1.5
Children under five who are underweight	%	30	25	15	<2
All women (15-49 years) who are anaemic	%	64	<50	<25	<5

3. Key initiatives

EXHIBIT 12.6



3.1 Comprehensive nutrition programme

3.1.1 Integrated maternal and early childhood nutrition services

- Expand and strengthen the Saksham Anganwadi & Poshan 2.0 scheme to ensure access to supplementary nutrition, immunisation, and growth monitoring for children under three years
- Enhance early childhood care through the establishment of vibrant, disaster-resilient Anganwadi Centres in all areas, especially disaster-prone areas; promote dietary diversity and healthy feeding practices through these centres
- Provide comprehensive antenatal and postnatal care with a focus on balanced diets and breastfeeding promotion

3.1.2 Adolescent nutrition support

- Establish adolescent-friendly health clinics providing iron-folic acid supplementation, de-worming, and menstrual hygiene education
- Track and map vulnerabilities to improve the nutritional status of adolescent girls and boys, enhancing the efficacy of ongoing schemes

3.2 Sustainable food systems for nutrition

3.2.1. Promoting nutrition-sensitive agriculture

- Encourage the cultivation and consumption of traditional and indigenous crops like millets (covered in detail in the chapter 'Revitalising agriculture'); promote local procurement of nutrient-rich, traditional crops and incorporate them in the diet of the target group
- Promote kitchen gardens in rural households, Anganwadi centres and schools to ensure dietary diversity; leverage these initiatives and link these with women's livelihood

3.2.2 Fortification and food security

- Scale up the fortification of staple foods (rice, salt etc.) with essential vitamins and minerals
- Strengthen the Public Distribution System (PDS) to ensure timely delivery and food security

3.2.3 Leveraging traditional food systems

- Strengthen local food systems by promoting the production, marketing, and consumption of traditional diets and nutrient-rich local foods; documentation of traditional recipes based on locally available food items
- Foster partnerships with Farmer Producer Organisations (FPOs) to enhance the production and market reach of nutrient-dense crops

Source: NITI Aayog, National Health Profile 2023, Our World in Data, OECD Health Statistics 2023, National Family Healthy Survey – 5 (2019-21), Swachh Survekshan Grameen 2022

3.3 Robust community engagement and capacity-building programmes

3.3.1 Skill development for nutrition service providers

- Train Anganwadi workers, ASHAs, and community leaders on nutrition assessment and counselling
- Build the capacity of mothers' committees, women's collectives and self-help groups (SHGs) to lead community nutrition initiatives

3.3.2 Community nutrition entrepreneurship

- Foster public-private partnerships (PPPs) and grassroots entrepreneurship through nutrition innovation funds and corporate social responsibility (CSR) initiatives
- Support the production and marketing of local nutrient-rich foods by women's groups
- Empower communities with knowledge of nutrition, hygiene practices, and traditional diets using 360-degree culturally contextualised social and behaviour change communication (SBCC)

3.3.3 Knowledge sharing and education

- Establish Centres of Excellence (CoE) in nutritional education and research in Odisha's universities
- Expand the network of Anganwadi Gyan Kendras across the State
- Conduct periodic workshops and training programmes for stakeholders to implement evidence-based nutrition interventions
- Integrate nutrition education into school curricula to inculcate healthy habits early

3.3.4. Link 'Swachh Bharat Mission' with nutrition programmes to improve sanitation and hygiene

3.4 Institutional reforms and policy development

3.4.1 Odisha Pushti Mission

- Set up a dedicated Mission to enhance governance and coordination of multi-sectoral nutrition initiatives:
  - Bring in skilled human resources for formulating evidence-based strategies, supporting implementation and ensuring concurrent monitoring and impact evaluation
  - Create a specialised group of lady supervisors who would be trained intensively in nutrition
- Draft and implement evidence-based policies linking agriculture, water, sanitation, education, and social protection with nutrition outcomes
- Set-up a 'Nutrition Cell' at the State Institute for Women and Children (SIWC) to spearhead nutrition-related research, surveys, studies, policy research and design; additionally, these officers will monitor and ensure the effective implementation of Government of India (GoI) and Government of Odisha (GoO) guidelines on Supplementary Nutrition Program (SNP) and Mukhyamantri Sampoorna Pushti Yojana

3.4.2 Expanding existing programmes

- Strengthen the Saksham Anganwadi & Poshan 2.0, MSPY and Mid-Day Meal Scheme
- Strengthen the implementation of Ojan Utsav, Purna Aahara and Infant and Young Child Feeding (IYCF) practices
- Scale up iron and folic acid (IFA) supplementation, calcium tablets, and Vitamin A distribution
- Enhance the 'Pada Pushti Karyakram' to deliver nutrition services in remote hamlets
- Revamp 'Take-home ration' (THR) to bring efficacy and transparency in systems and improve quality
- Strengthen 'Nutrition rehabilitation centres' for severe acute malnutrition (SAM) cases, establishing linkages for identifying and referring SAM children

3.4.3 Strengthening governance frameworks

- Formulate a data-driven policy to address the unique nutritional challenges of communities that are vulnerable and/ or in remote areas
- Place trained and qualified Anganwadi Workers (AWWs) in Anganwadi Centres (AWCs), with a focus on Early Childhood Care and Education (ECCE) and community outreach especially in model centres known as Anganwadi Gyan Kendras.

3.4.4 Monitoring and evaluation

- Undertake regular nutrition audits and impact evaluations of ongoing schemes
- Utilise community scorecards and feedback mechanisms to ensure accountability
- Establish State-level 'Concurrent assessment team' to validate the data from 'Poshan Tracker', ensuring accuracy and credibility by:
  - Generating prevalence estimates for specific projects, enabling data-driven policy interventions

- Creating and maintaining a centralised dashboard integrating data from existing software systems, including Poshan Tracker 2.0, AWC Infra, e-MAMATA 2.0, SUBHADRA, Tathya, etc to facilitate real-time monitoring and evidence-based decision-making

- Ensure third-party evaluation through SUBHADRA Scholars, a unique volunteer student internship programme

3.5 Innovation and digital tools for nutrition monitoring and programme delivery

3.5.1 Harness artificial intelligence (AI) and predictive analytics to proactively identify at-risk populations and enable timely interventions

3.5.2 Develop and implement mobile applications to empower frontline workers in delivering nutrition services effectively

3.5.3 Utilise advanced digital platforms for real-time monitoring of nutrition indicators and seamless programme implementation

3.5.4 Leverage big data analytics to enhance decision-making and optimise resource allocation for maximum impact

3.5.5 Integrate geographic tracking technologies to ensure precise and targeted delivery of nutrition services

CHAPTER

13

YOUTHFUL ODISHA: PIONEERING ODISHA'S SPORTS AND WELLNESS REVOLUTION

Summary

Odisha has emerged as a sports hub, with world-class infrastructure such as the Kalinga Stadium, Birsa Munda Hockey Stadium, and over 80 multi-purpose indoor facilities. The State has produced athletes who have brought immense pride to the nation.

Odisha's Vision is to make fitness a way of life, promoting sports as a culture, and position Odisha as a leading destination for sports and wellness in India.

By 2047, the State envisions the following outcomes

- **Foster a culture of fitness and wellness** among all citizens, making physical activity a daily habit and enhancing community well-being
- **80% of school children will meet age appropriate physical fitness parameters**, provide acess to basic sports infrastructure in every school
- By **2036**, the state will be placed among the **top three** medal-winning states in national events
- **Develop integrated sports facility at Gram Panchyat level**, blending sports training with community fitness programmes
- **Embed fitness and wellness into urban and rural planning**, ensuring parks, open spaces, and fitness centres are accessible to all

This approach reflects the broader Vision for Odisha to become a prosperous and inclusive State where physical well-being drives economic growth, social harmony, and individual potential.

Key initiatives to achieve the outcomes

Launch the multi-faceted 'Fit Odisha Mission' to inspire fitness across all age groups through activities such as walking, yoga, cycling, and recreational sports

Develop sports infrastructure such as fitness parks, jogging track, stadium and playground in both urban and rural areas

Leverage technology to monitor fitness levels, offer personalised plans, and create a fit and advanced sporting communities across the State

Attain global excellence in sports through a targeted programme for athletes

Position Odisha as a leading 'Sports economy hub'

Over the next 24 months, the State will

- Embed sports, fitness, yoga, and wellness into **school curriculums** from early stages
- **Establish rural fitness centres** alongside sports infrastructure development
- Launch State-wide fitness campaigns and tournaments to **engage citizens across all age groups**
- Build **state-of-the-art stadium** in all the blocks of the State
- **Introduce digital tools** to monitor fitness and wellness, enabling data-driven interventions

1. Context

Odisha is rapidly establishing itself as a sports-hub, offering superior infrastructure, hosting international events, and nurturing talented sportspersons:

- Made notable strides in developing sports infrastructure at the State, regional, block, and district levels
- Fast emerging as a preferred destination for marquee events, having hosted prestigious tournaments like the FIFA World Cup 2026 Qualifiers, Odisha Open, FIFA U-17 Women's World Cup, and National Weightlifting Championships, among others
- Establishing partnerships with leading organisations to set up high-performance centres across key sports

These initiatives are summarised below:

EXHIBIT 13.1

Kalinga stadium

State-of-the-art indoor aquatic complex, swimming high performance centre – with temperature-controlled 50m Olympic size pool

India's first and South Asia's largest indoor athletics centre

Birsa Munda Hockey stadium

Largest hockey stadium in India with a seating capacity of more than 20,000 people

Hosted the FIH Odisha Hockey Men's World Cup 2023 and FIH Pro League 2023/ 24

AIFF-FIFA academy

World-class academy built under FIFA talent-development scheme

>400%

increase in medals won in national and international events between FY22 and FY24

81

multi-purpose indoor stadiums operational

Producing champion sports-persons

Birsa Munda Hockey Stadium holds to Guinness world record for being the largest fully-seated hockey stadium

Fitness is not just for athletes—it is a way of life that empowers everyone to contribute to Odisha's progress. The National Family Health Survey (NFHS-5) 2020-21 highlights significant shifts in the State's nutritional landscape:

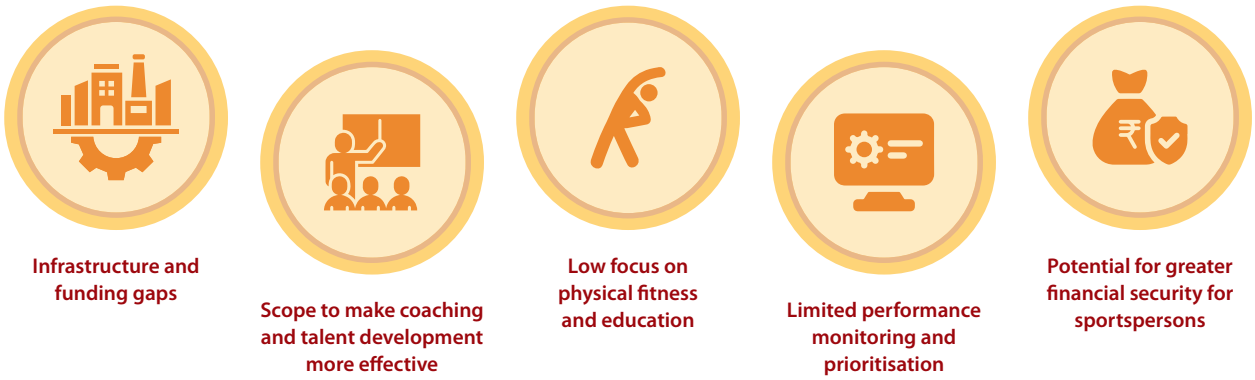
- **Undernutrition has declined**, with women having a body mass index (BMI) below normal reducing from 26.5% to 20.8% and men from 19.5% to 15.3%
- **However, obesity has risen sharply**, with overweight or obese women increasing from 16.5% to 23.0% and men from 17.2% to 22.2%
- Additionally, **high-risk waist-to-hip ratios are prevalent**, affecting 63.0% of women and 55.6% of men

These trends reveal the dual challenges of undernutrition and obesity, demanding a balanced and comprehensive fitness strategy.

1.1 Key challenges

Certain structural challenges remain that the State aims to address to firmly establish itself as a **'Global fitness and sports-hub'**:

EXHIBIT 13.2



- **Infrastructure and funding gaps**:
  - Infrastructure gaps, particularly in rural areas, could benefit from targeted development
  - Opportunities to increase funding for sports infrastructure and programmes
  - Untapped potential for corporate sector involvement across sports
- **Scope to make coaching and talent development more effective**:
  - Scope to upskill coaching staff and talent scouts with the latest techniques and technologies
  - Need to expand availability of skilled support staff, including nutritionists, sports psychologists and analysts
- **Low focus on physical fitness and education**:
  - Opportunity to foster a stronger culture of physical fitness, focusing on stamina, strength and nutrition
  - Potential to incorporate fitness-related subjects (like nutrition and mindfulness) into education curriculum
- **Limited performance monitoring and prioritisation**:
  - Scope to enhance monitoring systems for medal-focused outcomes
  - Opportunity to develop a sports prioritisation approach, taking inspiration from initiatives like China's 'Project 119'
- **Potential for greater financial security for sportspersons**, including options for scholarships and performance-based support

1.2 Key learnings

Odisha is taking a leaf from the books of peer countries and States to build its strategy for the sports and fitness sector. Some key learnings include:

- **Integrate fitness into education to build lifelong habits of physical activity**
  Countries like Finland have successfully incorporated daily physical activity into school curriculums, ensuring children engage in at least an hour of physical activity every day. Similarly, Japan emphasises 'Taiiku' (physical education) as a critical component of school life, promoting teamwork, discipline, and fitness from a young age

- **Leverage technology and data analytics to monitor and enhance fitness outcomes**
  Advanced systems like Denmark's SportTrack use data analytics to monitor athlete progress, optimise training regimens, and prevent injuries. Additionally, apps like Singapore's Healthy365 incentivise citizens to maintain fitness through rewards for achieving daily step and activity goals

- **Target efforts on prioritising few sports to improve medal tally in elite events**
  For example, China's 'Project 119' targeted athletics, swimming, rowing, canoeing, kayaking and sailing to increase its medal tally by 30 in the 2008 Beijing Olympics. Similarly, Australia expanded its talent pool from the grassroots level for target sports such as swimming, canoeing, rowing and sailing. This helped it reach the sixth position in medal tally among all countries in 2020 from tenth in 2016

- **Focus on early talent spotting with structured scouting programmes and provide support**
  For example, United Kingdom launched the 'Discover your gold' campaign targeting 6 to 15-year-old sportspersons, identifying over 100 sportspersons who have since won 21 Olympic medals and more than 250 international medals

- **Launch programmes for the development of coaches with lifelong learning approach**
  For example, New Zealand, through its high-performance sport initiative, adopts a holistic approach for coach development. This includes scholarships for talented candidates to undergo formal training, periodic workshops for existing coaches, and one-on-one coach mentoring support from experienced national and international coaches. It also runs a three-year accelerator programme focused on fast-tracking the development of high-performing grassroot coaches

- **Invest in a comprehensive post-career transition programme, beyond public sector jobs, as an incentive**
  For example, Singapore has two post-athletics career tracks:
  - SpexEducation is designed to help student-athletes perform at the highest-possible level without compromising their academic aspirations via alternate scheduling, learning modes and assessments
  - SpexBusiness for a successful transition into life after sports via courses, internship or apprenticeship and placements

2. Vision and outcomes

By 2047, Odisha aims to create a culture of fitness amongst all citizens and become a leading sports hub of India:

EXHIBIT 13.3

VISION 2047

Championing a way of life that blends sports, fitness (including yoga), and active living - empowering individuals of all ages to excel and reach their potential

The State has set several outcomes for itself to track success:

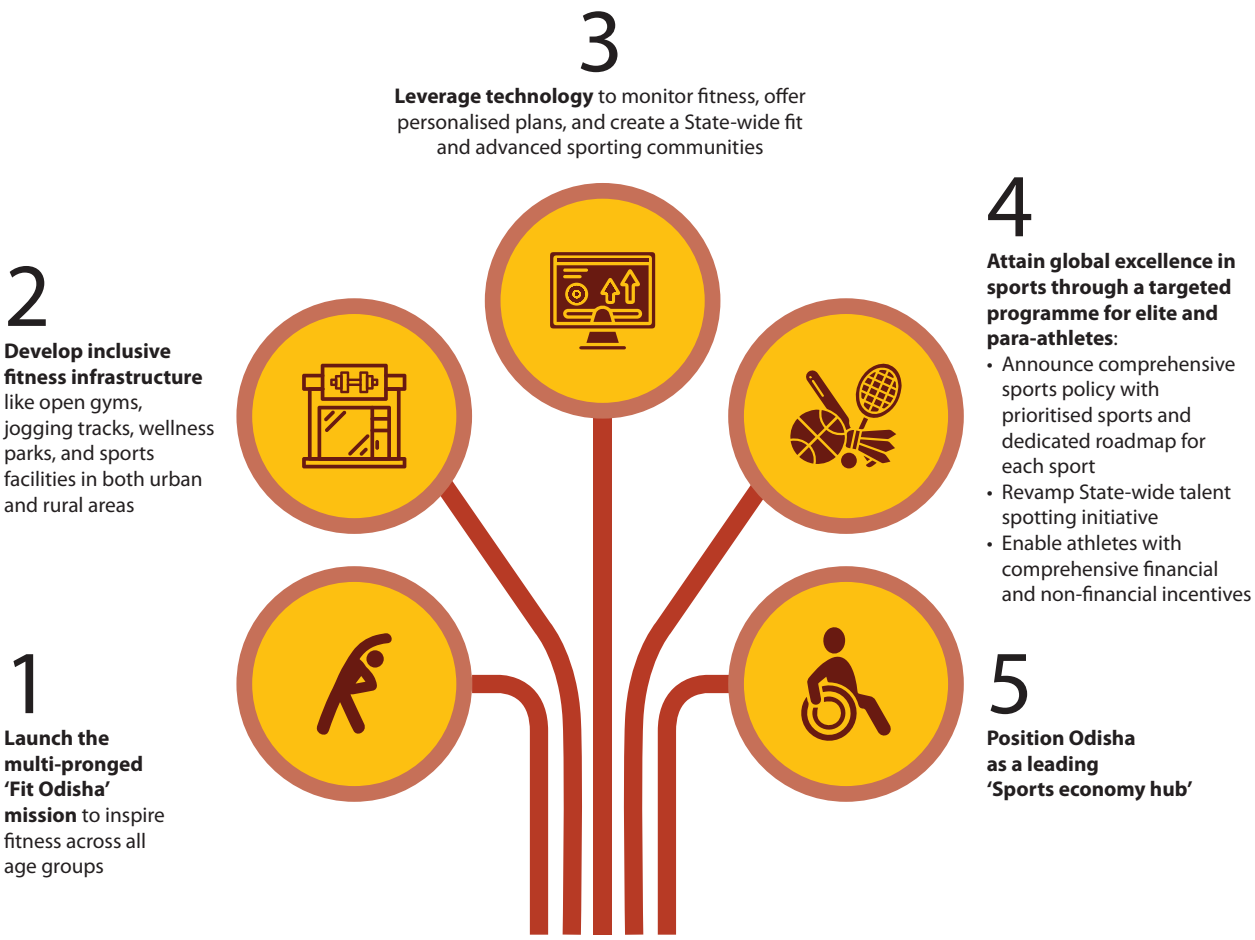
EXHIBIT 13.4

Key outcomes	Unit	2029	2036	2047
Participation in yoga and other fitness activities	% people	20	40	75
School children actively engaged in at least one sport	% school children	20	50	80
Coverage of sports facilities	% districts	25	50	100

3. Key initiatives

Odisha plans to launch five marquee initiatives to achieve its ambitions:

EXHIBIT 13.5



3.1 Launch the multi-pronged 'Fit Odisha' mission to inspire fitness across all age groups

This multi-dimensional initiative would target key citizen groups, with the aim of enhancing health and well-being across the State.

3.1.1 For students

- **Integrate physical activities, sports, and wellness programmes into school curriculums at all levels**, including activities such as athletics, gymnastics, team sports, yoga, and traditional sports to teach values such as teamwork and leadership
- **Provide early exposure to play-and-activity at Anganwadi or pre-school levels**, nurturing lifelong fitness habits from early childhood
- **Develop comprehensive assessment systems**: Implement fitness and health assessments in all schools and colleges, with dashboards to track year-on-year progress and provide personalised goals

3.1.2 For adults

- **Awareness building**: Launch an awareness campaign featuring prominent members of Odia society as role models, and encourage active participation in sports, fitness and wellness through activities such as meditation, yoga and sleep
- **Workplace fitness**: Introduce policy to incentivise employers to provide a 30-minute fitness and yoga break at workplaces
- **Community fitness**: Set up fitness cells across the State with trainers to organise regular community initiatives, such as fitness and yoga classes, walking groups, and community sports events
- **AI-enabled mobile app**: Technology support to promote at-home fitness and yoga, personalised coaching plans, behavioural nudges, and nutrition plans based on local diets and supplies

3.2 Develop inclusive fitness infrastructure like open gyms, jogging tracks, wellness parks, and fitness centres in both urban and rural areas

The State will upgrade its facilities and enhance its existing infrastructure at the block, district, regional, and State levels, with a special emphasis on promoting indigenous sports:

EXHIBIT 13.6

State-level

- Stadiums at multiple locations and high performance centres for all prioritised sports
- Fitness zones, including large green parks, eco-trails, and adventure sports hubs

District-level

- Multi-sports centres, sports schools and academies
- Special sports academies for different sports

Regional cluster-level

- Training academies and 'Khelo India' centres in at least 11 regional hubs[1]
- Sports complexes and recreational fitness hubs with wellness zones, and community activity areas

Block, Gram Panchayat, and city-level

- Playgrounds in every school with multi-sport facilities
- Block-level stadiums and sports nurseries
- Localised fitness infrastructure, such as outdoor gyms, jogging tracks, and small wellness parks

For this, Odisha will create an inter-departmental taskforce with all responsible departments to action the following:

- Develop a roadmap with clear timelines for creation of high-quality sports infrastructure across the State
- Hold periodic reviews to de-bottleneck issues on a quarterly basis

1. Bargarh, Bhawanipatna, Puri, Berhampur, Jeypore, Jajpur, Keonjhar, Sundergarh, Jharsuguda, Rourkela, and Sambalpur

3.3 Leverage technology to monitor fitness levels, offer personalised plans, and create a State-wide fit and advanced sporting communities

3.3.1. Enable fitness monitoring and data analytics

- Develop a centralised digital platform to monitor individual and community fitness metrics using wearable devices, mobile apps, and IoT-based fitness trackers
- Integrate artificial intelligence (AI) and data analytics to generate insights on population health trends, enabling targeted interventions for specific demographics or regions
- Use the centralised digital platform to integrate health and fitness data with public healthcare systems, enabling early detection of health risks and preventive care

3.3.2. Provide personalised fitness plans

- Develop partnerships with nutritionists and dietitians to design and publish customised dietary recommendations, ensuring alignment with the dietary preferences (e.g., millet recipes) and nutritional needs of local communities
- Establish a network of certified fitness advisors in urban and rural areas to conduct fitness assessments and create personalised plans for individuals based on age, health status, and lifestyle
- Leverage existing platforms, such as community health centres, schools, and corporate wellness programmes, to distribute fitness guides and provide ongoing mentorship
- Promote community engagement through personalised group fitness sessions, such as yoga, aerobics, or strength training, tailored to community-specific demographics like youth, senior citizens, or women

3.3.3. Public-private partnerships for technology deployment

- Partner with and incubate tech companies, startups, and sports-tech innovators to develop and deploy cutting-edge fitness monitoring tools and infrastructure
- Incentivise coporate sector involvement through grants, tax benefits, or shared revenue models to promote scalability and innovation

3.3.4. Strengthen sporting capabilities through a holistic approach

Capability building is essential for providing top quality coaching and support, giving coaches and staff the skills they need to maximise the performance of sportspersons. Building on this, the State will adopt a holistic approach that six key elements:

EXHIBIT 13.7

Officials, administrators and sports professionals

Ensure universal access to:

- High quality officials and referees
- End-to-end administration of ecosystem including, marketing and management of athletes, etc.

Physical education (PE) teachers, coaches and scouts

Ensure universal access to:

- PE teachers with basic functional training across all sports
- Elite coaches trained in latest techniques and management
- Professional scouts trained in latest data-backed methods

Analytics and technology experts

Video and data analytics to support scouting, growth plans and game strategies

Nutritionists

Ensure athlete- and sport-specific nutrition and diet to improve performance

Physiotherapists, sports medicine and biomechanics

Ensure universal access to:

- Physiotherapists to ensure physical readiness and injury treatments with strong referral systems to experts
- Scientific teams to support enhanced prevention, recovery and rehab of injuries

Psychologists

Ensure mental well-being and competition readiness for peak performance

To provide this support, the State will undertake the following actions:

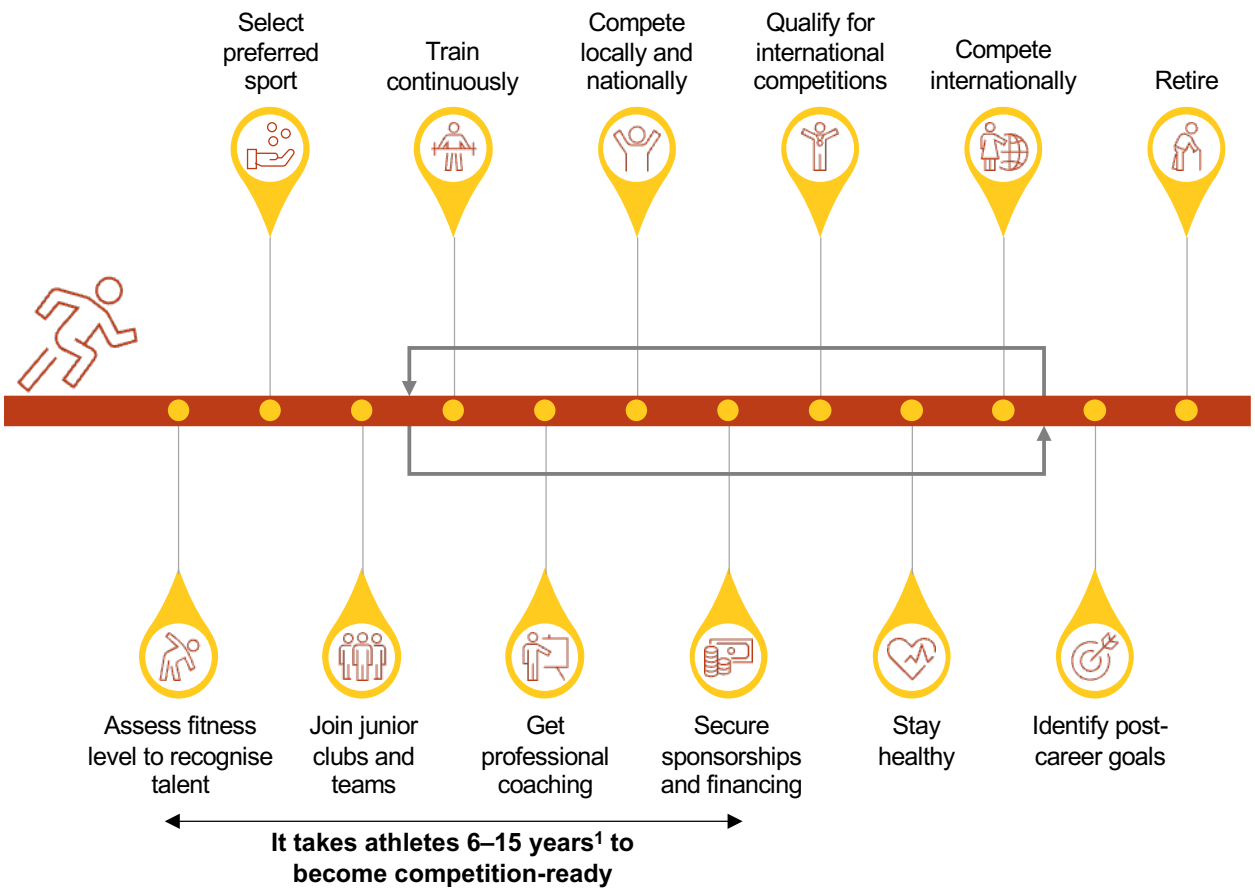
- **Revamp the coaching and support ecosystem**
  - Induct international expert coaches for short-term engagements as part of 'Train the trainer' programmes
  - Continue to support sportspersons at all levels with holistic support teams, ensuring regular staffing and filling of vacancies
  - Focus on the lifelong capability building of existing coaches, support staff, data scientists, officials, and physical education teachers transitioning into these pathways
  - Establish partnerships with prominent national and international institutions
    - Facilitate exposure visits and exchange programmes
    - Digitise all key sporting activities in the State to support data-driven decision-making
- **Advance research and capacity building**
  - Launch targeted programmes in existing State institutions, in partnership with eminent national and international institutions to create a pool of high-quality coaches, analysts and other support staff
  - Launch a world-class research centre to:
    - Enhance training and help prevent injuries by analysing large volumes of data from wearables, sensors, and videos, providing coaches and staff with targeted insights
    - Use AI-based models to predict the risk of future injuries by analysing data on sportspersons' movements, training intensity and past injuries, allowing for proactive modifications to training regimens
    - Identify patterns in strategies, tactics, and areas for improvement to assist in tactical decision-making during games

3.4 Attain global excellence in sports through a targeted programme for elite and para-athletes

Under the programme, Odisha plans to improve the athlete performance by supporting sportsperson throughout their lifecycle (Exhibit 13.7). Additionally, it will set up several sports facilities of world-class standard by 2036.

EXHIBIT 13.8

To improve elite and para-athlete performance on the international stage, all stages of the athletic life will be taken into account



1. Assumptions: Average athlete starts training at 7–9 years age and retires at is 33 years age

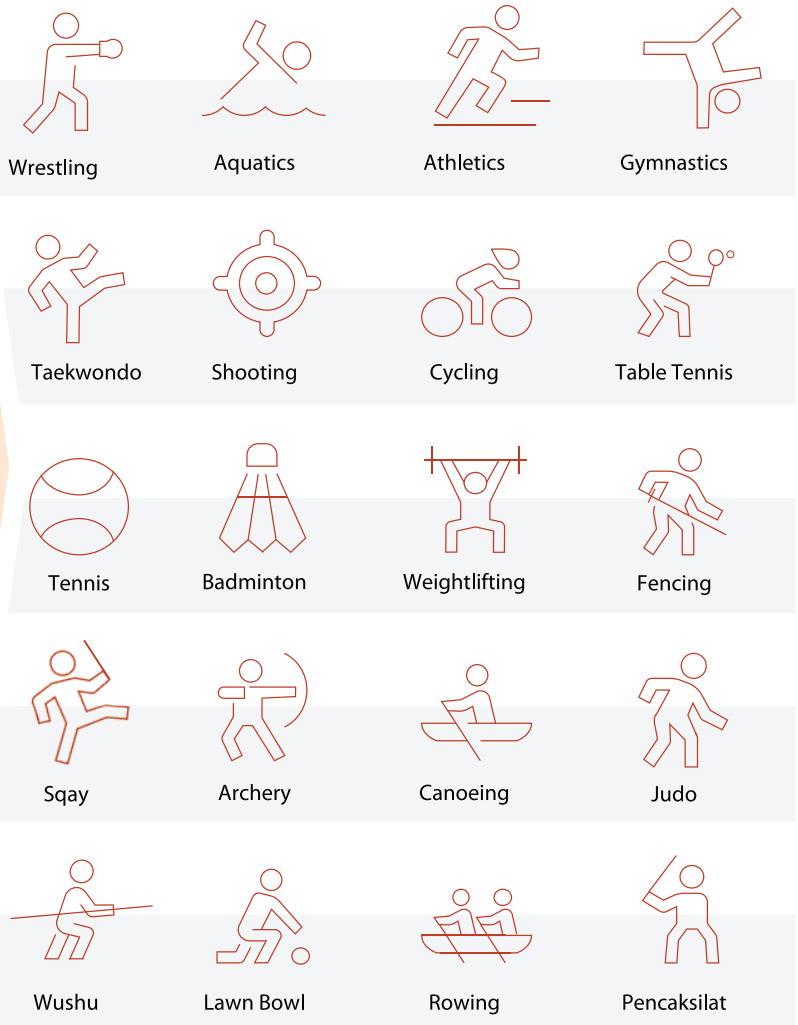
3.4.1 To kickstart the programme, the State will announce a comprehensive sports policy, prioritising key sports and providing an action plan for each

EXHIBIT 13.9

Apart from team sports such as football, hockey and kho-kho, Odisha will focus the following top 20 sports for increasing medal tally in national and international events

Metrics for prioritisation

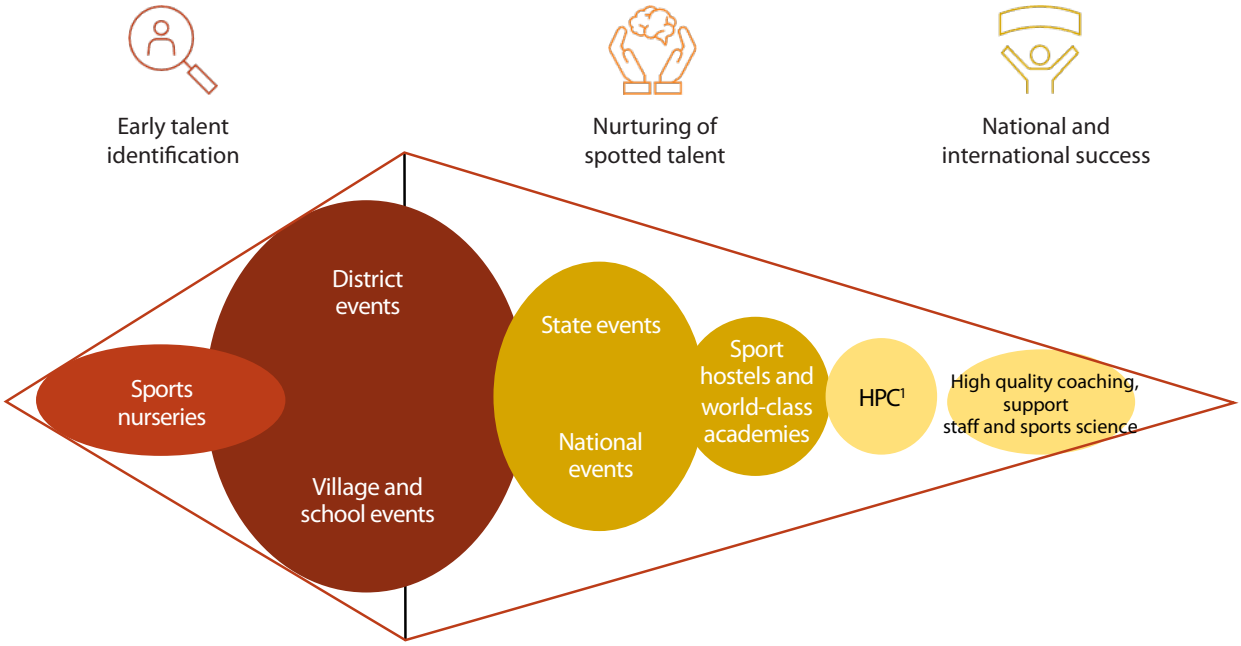
1. **Total number of medals available** in the sport across National, Asian and Olympic Games
2. Whether the **sport is part of the last three National Games**
3. **Existing success**: Medal won to medal availability ratio in last two National Games and KIYG 2024
4. **Participation rates in Odisha**: Athletes active in current Odisha sports initiatives
5. **Popularity of the sport**: Estimated through talent ID and pay-and-play data



3.4.2 The State will revamp talent scouting efforts with a focus on early talent-spotting (Exhibit 13.9). For this, Government of Odisha will form a comprehensive task force with representation from the State officials, ex-athletes and experts for monitoring of talent spotting initiatives and results at various national and international events.

EXHIBIT 13.10

Revamp State-wide talent spotting initiative for international sports events through the Odisha 'Khel Ratna Khoj Abhiyaan'



	Prospecting	Level of support
1	Grassroots-level talent search camps conducted periodically at the village-level Scouting panels at school- and district-level competitions	Spot athletes enrolled into sports nurseries (established in each block) to provide targeted coaching
2	Continued assessments by district- and State-level multi-functional scouting teams	Admit the shortlisted candidates to State sports hostels and world-class academies at regional-level for continued growth and training
3	Identification of athletes who perform consistently well at State-level competitions	Select athletes to enter monitoring cohort and enrol into high-performance centres with professional coaching and support staff

[1] High performance centres

3.4.3 Offer financial and non - financial incentives across the lifecycle of sportspersons and para - sportspersons

Amateur stage

- Launch a scheme to provide compensation through insurance and comprehensive medical care for early career injuries
- Revamp stipend system for student sportspersons to support activities such as nutrition and travel
- Reform and launch a student sportsperson education programme for those outside sports hostels, including alternative academic scheduling, alternative learning models, exam days and assessment modes

Professional stage

- Continue financial assistance through a fixed income (graded contracts) programme
- Scale up event performance-based financial awards
- Ensure comprehensive insurance coverage for common ongoing injuries, and risk from disability, etc.
- Launch a post-retirement career exploration programme offering:
  - Access to career counsellors to explore interest and options
  - Internship and apprenticeship opportunities during off-season

3.5 Position Odisha as a leading 'Sports economy hub'

3.5.1 Provide fiscal and non-fiscal incentives to attract investments in sporting goods and apparel for domestic and international markets

3.5.2 Build a 'Sports innovation hub' in Odisha to pioneer research and innovation in sports and fitness equipment, analytics, digital applications and support an allied start-up ecosystem

3.5.3 Position Odisha as a leading 'Sports-hub':

- Bid for global and national championships and develop own signature events like marathons, adventure and indigenous sports festivals
- Collaborate with the Government of India for any future bids to host Olympic events
- Bundle event tickets with tourism packages while promoting local crafts and food during events
- Establish temporary fan villages during international events to generate additional revenue

CHAPTER 14

QUALITY EDUCATION: BUILDING FOUNDATION FROM EARLY CHILDHOOD

Summary

Odisha's comprehensive approach to education spans from early childhood development (0-3 years) to K-12, ensuring a seamless educational continuum. In K-12 education, Odisha boasts a pupil-teacher ratio of 23:1, a 95% retention rate at the primary level, and impressive gross enrolment ratios: 98% for primary, 91% for upper primary, 80% for secondary, and 43% for higher secondary. Despite a 77% overall literacy rate, challenges persist with dropout rates of 7% at the upper primary level and 27% at the secondary level.

The State will invest in a model early child education and school system that empowers all children with holistic, outcome-focused, multi-dimensional learning towards building essential 21st century skills for the State that can drive the impact for Viksit Bharat.

By 2047, the State envisions the following outcomes

- Achieve 100% Gross Enrolment Ratio (GER) across all levels (primary, upper primary, secondary and upper secondary)
- Ensure basic foundational literacy and numeracy for all children
- Reduce dropout rates to 0% at upper primary level and below 4% at secondary level
- Ensure 100% students are digitally literate and socially aware
- Achieve 100% literacy rate

Key initiatives to achieve the outcomes

To achieve this, the State will undertake seven strategic initiatives aligned with recommendations of the National Education Policy (NEP):

Prioritise early childhood education with activity-based, multi-lingual curriculum and trained educators

Ensure universal access to secondary schooling with technology-enabled infrastructure

Develop holistic, outcome-focused, gender-sensitive and progressive curricula with multi-modal pedagogy and assessments

Increase focus on vocational training, career-readiness and entrepreneurial drive

Develop a multi-tiered and holistic support system for students through increased engagement of parents and community

Ensure exemplary teachers and school leaders via continuous training, fair transfer policy and performance-linked incentives for schools

Ensure gold-standard governance, systems and resource optimisation

In the next 24 months, the State will

- **Operationalise 'Nipun Odisha programme'** to ensure 120 mins of literacy, 90 mins of numeracy learnings and student performance tracking
- **Transform schools through 'PM Schools for Rising India (PM SHRI)'** into Centres of Excellence (CoE) with gold-standard ICT[1] integration via smart classrooms, and digital libraries while ensuring introduction of industry-linked vocational interventions
- **Expand 'Panchasakha Sikhya Setu'** to revamp schools by increasing stakeholder involvement; make school education a shared responsibility by strengthening alumni-community engagement; implement capacity building initiatives via modern learning methods
- **Strengthen schools at the Panchayat level** into holistic learning centres with multi-disciplinary education including Odia literature and culture under the 'Godavarisha Mishra Adarsha Prathamik Vidyalaya'
- **Revamp curriculum for early child education** with a focus on physical activities and local language adoption
- **Connect with 'Automated Permanent Academic Account Registry (APAAR) ID'** to track learning outcomes from early childhood to tertiary education, integrated with the State's academic tracking portal and related channels, ensuring seamless monitoring and targeted interventions

[1] Information and Communication Technology

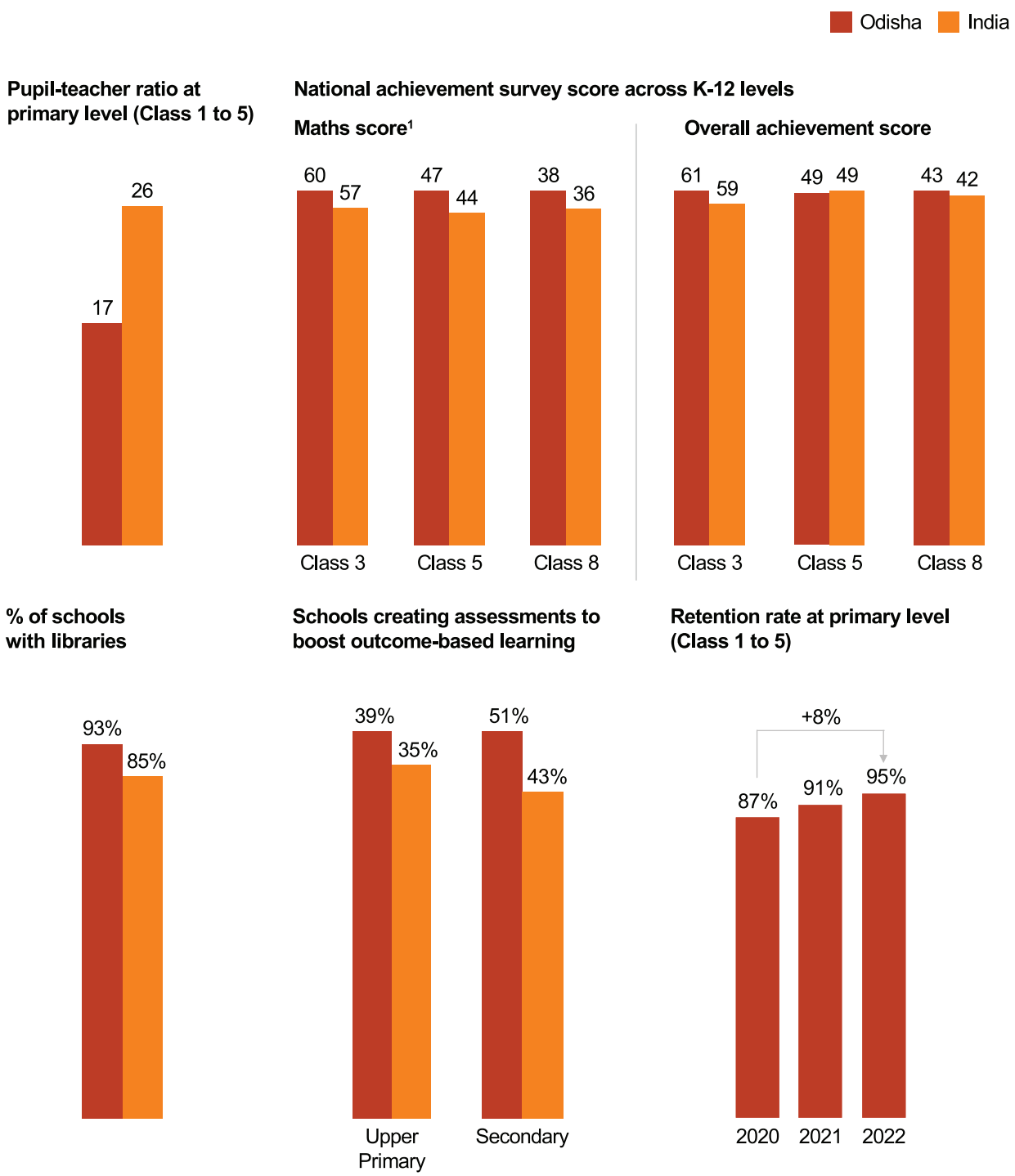
1. Context

Odisha's comprehensive approach to early childhood development and school education aims to create a **seamless educational continuum**, supporting children's growth from **infancy through secondary education**. The State places strong emphasis on the **0-3 years age group**, recognizing the critical role of **Early Childhood Care and Education (ECCE)** in laying the foundation for lifelong learning and development.

Odisha has also made notable progress in K–12 education (Exhibit 14.1), with a pupil-teacher ratio of 23:1 and a primary-level retention rate of 95%. The Gross Enrolment Ratio (GER) stands at 98% for primary, 91% for upper primary, 80% for secondary, and 43% for higher secondary education.

Despite these achievements, challenges remain-particularly in addressing dropout rates, which are 7% at the upper primary and a concerning 27% at the secondary level. The State's overall literacy rate is 77%, highlighting the need for continued efforts to improve educational access, retention, and quality across all levels.

EXHIBIT 14.1



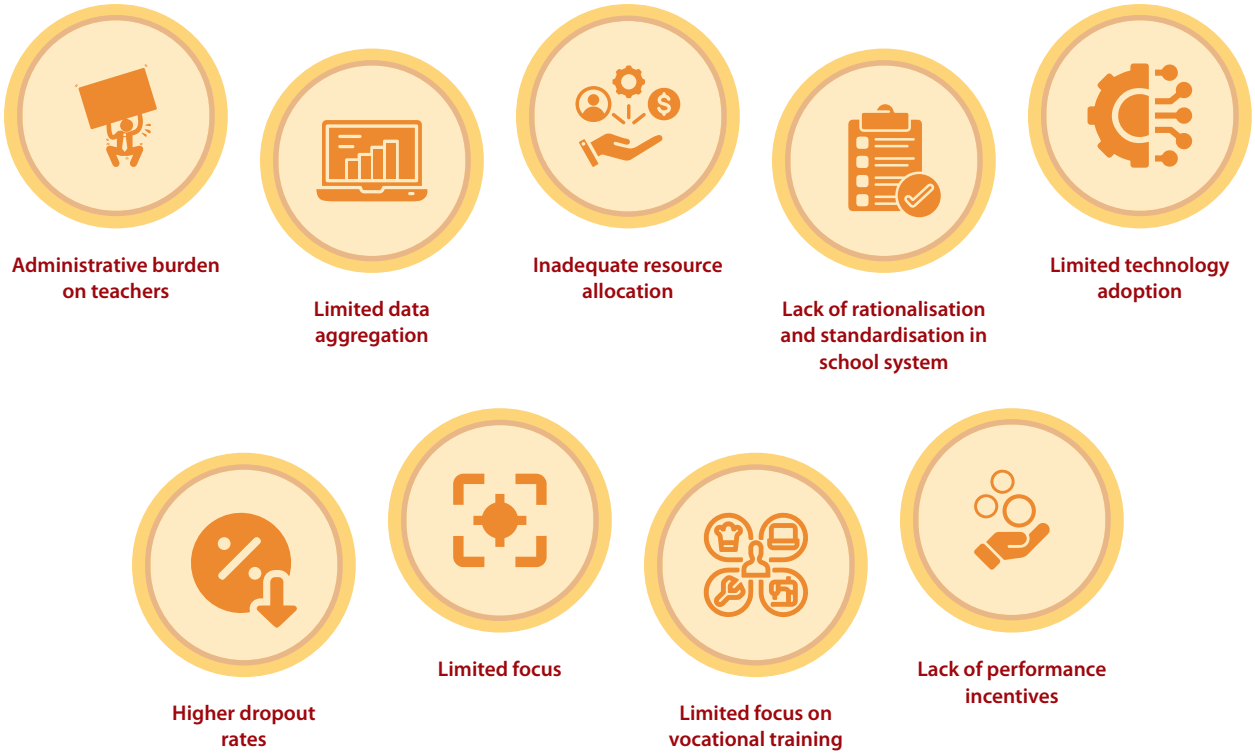
[1] 2021

Source: Unified District Information System for Education (UDISE), National Achievement Survey (NAS), Annual Status of Education Report (ASER), Department annual activity report

1.1 Key challenges

However, the State's education landscape still faces significant challenges, including limited access to quality Early Childhood Care and Education (ECCE), high dropout rates at the secondary level, and limited vocational education pathways. The challenges are outlined below:

EXHIBIT 14.2



- **Administrative burden on teachers**: Teachers spend significant time on non-core activities such as record keeping, administration, and mid-day meal facilitation
- **Limited data aggregation through VSKs and VSK programme**[1]: Mis-alignment between national and State data monitoring systems
- **Inadequate allocation:** Lack of subject resource matter experts and staffing across all sub-departments
- **Lack of rationalisation and standardisation in school system:** Multiple categories of schools leading to drop-outs at transition; multiple cadres of teachers
- **Limited technology adoption:** Ranks 32nd among schools with functional computer facilities at 26.4% while Delhi, Punjab are at about 100%. Ranks 34th in terms of internet availability (14.9%)
- **Higher dropout rates** across both upper primary (6-8th standard) and Secondary (9-10th standard); **poor Foundational Literacy and Numeracy (FLN) outcomes**
- **Limited focus on early child education:** Lack of activity-based curriculum for holistic development of children and dedicated cadre of educators
- **Limited focus on vocational training:** Lack of clear programme for vocational training with up-to-date curriculum and industry participation; lack of career guidance and counselling
- **Lack of performance incentives** and quality training for teachers and school leaders

[1] Vidya Samiksha Kendra
Source: NAS, UDISE

1.2 Key trends[2]

Globally, education systems are prioritising technology integration, personalised and multi-modal learning, and a strong child support ecosystem. Odisha aims to leverage these global trends to shape its Vision for the future of early and school education.

These trends are explained below:

EXHIBIT 14.3

Focus on holistic student learning: Develop curriculum and systems around student well-being and socio-emotional learning; e.g., Finnish model of education focuses on physical, mental and emotional aspects of students

Adoption of personalised, multi-modal learning models to cater to diverse learning styles and needs of students, e.g., personalised maths and language tutoring pathways, smart boards, and innovative assessments

Technology integration into school management systems to improve data collection and monitoring, student learning, student assessment and performance management, e.g., VSKs[1], and PM e-Vidya

Focus on vocational learning to ensure future workforce preparation, e.g. Switzerland's federal vocational education diploma and Korea's 'Free semester programme'

Increased importance of teacher and school leader training: Dedicated upskilling programmes and performance management for teachers; e.g., Singapore has training plan for top 30% teachers, centralised training at the National Institute of Education, and an ongoing 'Teacher Growth Model'

Increased focus on early childhood care and education with growing evidence of impact on lifelong education and health outcomes e.g. Finland's 'EduCare' policy for ECCE

Development of child support ecosystem across parental support, access to mental health services, and child nutrition programmes to achieve better learning outcomes

[1] Vidya Samiksha Kendras for State-level school data monitoring

[2] Source: Industry experts, World Economic Forum, Organisation for Economic Cooperation and Development.(OECD), United Nations Educational, Scientific and Cultural Organisation (UNESCO), and ASER report

2. Vision and outcomes

EXHIBIT 14.4

VISION 2047

Become a 'Model school system' which empowers all the students with holistic, outcome-focused learning and 21st century skills

Develop diverse competencies across stages of the schooling system focused on inner growth and creative self-expression, and gainful or self-employment

Model student

	Foundational Pre-school (3 years)	Preparatory Class 3-5	Middle Class 6-8	Secondary Class 9-12
Knowledge and skills	Foundational Literacy and Numeracy (FLN)	Basic knowledge about the world	Conceptual subject knowledge	Specialisation in select subjects
	Environmental studies	Social and global issues	Tech literacy and coding, vocational, entrepreneurship	
	Observational ability	Logical thinking, creativity, innovation	Scientific approach, research	Critical thinking, reasoning, problem solving
	Social and inter-personal skills		Collaboration, communication, teamwork skills	Leadership, planning skills
Mindsets and attitude	Positive attitude, curiosity	Citizenship, culture, desire to learn	Morality, ethics, empathy, respect for diversity	Self-awareness, growth mindset, direction in life, adaptability

Well-being for all students	Physical fitness	Psychological well-being	Social networks	Cognitive development

The State envisions the following outcomes, in-line with the Viksit Odisha Vision:

EXHIBIT 14.5

Key outcomes	Unit	Current	2029	2036	2047
Primary Gross Enrolment ratio (GER)	%	97.9	100	100	100
Upper primary GER	%	91.3	95	100	100
Secondary GER	%	80.3	85	90	100
Higher secondary GER	%	43.6	60	80	100
Upper-primary dropout rate	%	7.3	5	2	0
Secondary dropout rate	%	27.3	20	14	4
Pupil teacher ratio (for all levels)	-	23	18	14	10
Schools having computer facility (for all levels)	%	26.4	45	75	100
Schools having CwSN[1]-friendly infrastructure	%	54	70	85	100
Literacy rate	%	77.3	80	90	100

[1]CwSN: Children with Special Needs

Source: UDISE, OECD, World Bank, UNESCO, Department of School Education and Literacy, Ministry of Education, Government of India

3. Key initiatives

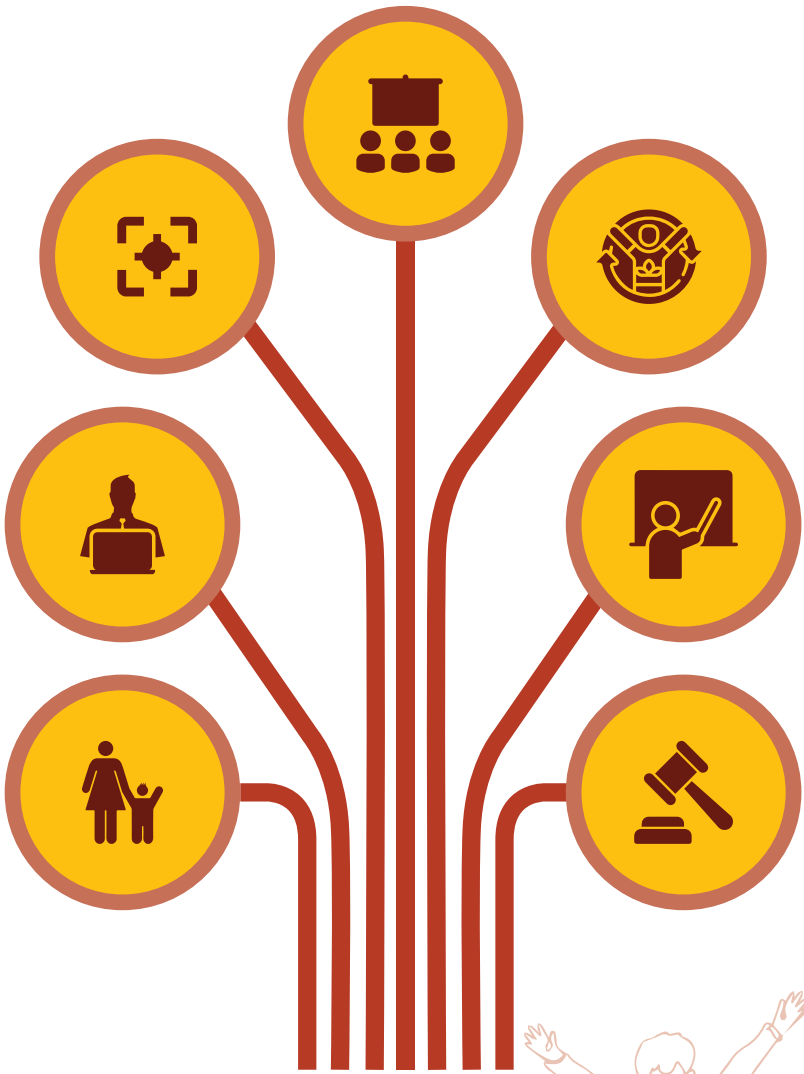
The State plans to embed seven key initiatives to fulfil its Vision in this area:

EXHIBIT 14.6

4
Increase focus on vocational training, career-readiness and entrepreneurial drive

3
Develop holistic, outcome-focused, gender-sensitive and progressive curricula with multi-modal pedagogy and assessments

5
Develop a multi-tiered and holistic support system for students through increased engagement of parents and community



2
Ensure universal access to secondary schooling with technology-enabled infrastructure

6
Ensure exemplary teachers and school leaders via continuous training, fair transfer policy and performance-linked incentives for schools

1
Prioritise early childhood education with activity-based curriculum in local language and trained educators

7
Ensure gold-standard governance, systems and resource optimisation

3.1 Prioritise early childhood education

3.1.1 Strengthen foundational learning competencies by developing an innovative curriculum and instructional materials for 'Early Childhood Care and Education (ECCE)'

- Develop a curriculum that is activity-based, prioritising the use of regional languages or mother tongues to enhance relatability and comprehension among young learners
- Foster cognitive development by incorporating workbook strategies designed to engage children and utilising creative, non-traditional assessment techniques to evaluate learning progress effectively
- Develop educational videos and resources in local languages featuring simple, home-based activities (e.g. Kuni Calendar, Sukhada Lalana Palana, and flipbooks for Anganwadi Workers) to empower parents to actively engage in their children's early learning journey.

3.1.2 Establish robust infrastructure for quality education delivery

- Align and integrate every Anganwadi centre and creche into a school cluster or network to ensure smooth progression to primary schooling
- Upgrade all Anganwadi centres and creches with infrastructure enhancements, educational and recreational materials
- Explore establishing pre-primary classes in all Government schools in line with the NEP strategic framework over the medium to long term

3.1.3 Enhance capabilities and talent for implementing the new curriculum

- Strengthen capacity among current staff through specialised trainers and a dedicated technical support unit
- Provide ECCE educators with targeted training and skill development tailored for the 0-6 age group over the medium-to-long term

To drive the above initiatives, Odisha will form a committee chaired by the Development Commissioner, Government of Odisha. This will include representatives from various departments including School & Mass Education, Women and Child Development and ST & SC Development, Minorities & Backward Classes Welfare for inter-departmental coordination and outcomes monitoring.

3.2 Ensure universal access to secondary schooling

3.2.1 Attain full enrolment across all levels and communities

- Prevent dropouts through targeted on-ground campaigns that actively involve parents and students alike
- Provide stipends for transportation and ancillary expenses to remove barriers to education

3.2.2 Ensure educational continuity through consolidation of schools; for example, establishing integrated K-12 schools in every Gram Panchayat will help limit frequent migration and decrease dropout rates

3.2.3 Equip all schools with advanced digital infrastructure by ensuring internet connectivity and technology-enabled classrooms, and integrating digital tools, VR/AR, and AI technologies to elevate learning

3.2.4 Equip all schools with infrastructure to support holistic learning, such as playgrounds, activity rooms, and tinkering labs

3.2.5 Construct an integrated school complex with high-quality hostel facilities in each block, focusing on tribal areas for enhanced education access

3.3 Develop holistic, outcome-focused, gender-sensitive and progressive curricula with multi-modal pedagogy and assessments

3.3.1 Adopt experiential, activity-based teaching in all schools. Foster creativity and critical thinking beyond textbooks by integrating activities, workbooks, real-life scenarios, and promoting debate

3.3.2 Implement digital assessments with emphasis on testing higher order thinking skills and competencies

3.3.3 Conduct periodic and meaningful evaluations of students' well-being, and awareness of social issues and rights

3.3.4 Strengthen existing institutions with training and capability for implementing proposed new-age assessments

3.3.5 Provide credits for human engagement activities such as volunteering with National Cadet Corps (NCC), and National Service Scheme (NSS)

3.3.6 Develop socio-emotional curriculum and teaching methods incorporating, but not limited to:

- Sports for resilience and teamwork
- Yoga, martial arts, and meditation for overall health
- Daily debates for critical thinking
- Performing arts for creativity
- Engagement with nature and other species through farming and veterinary sciences
- Social issues for awareness

3.4 Increase focus on vocational training, career-readiness and entrepreneurial drive

3.4.1 Build an aspirational vocational pathway, including:

- Focused campaign to remove stigma and create awareness
- Specialised pathway with 50% curricular time on chosen vocations
- Industry-linked curricula with new age vocations, apprenticeships and best-in-class infrastructure
- Linkage of vocational education schools to Industrial Training Institutes (ITI) and District Investment Promotion Agencies (DIPA) for curriculum upgradation and placement support

3.4.2 Launch a programme to cultivate 21st century skills, including soft skills

3.4.3 Inculcate entrepreneurial spirit through focused curriculum, STEM[1] labs and incubators

3.4.4 Ensure career-readiness by providing guidance counsellors, tech-enabled systems, exposure visits, exchange and mentorship programmes in every school

3.4.5 Evolve current digital education programme to include awareness of future-oriented skills such as artificial intelligence, machine learning, data analytics, and blockchain technology

3.5 Develop a multi-tiered and holistic support system for students

3.5.1 Provide feedback and remediation through a personalised digital student dashboard to record performance and address learning needs, recommending specific interventions based on individual student performance

3.5.2 Engage parents as partners in child and school development by hosting monthly community parent-teacher meetings, organising parent awareness and skill-building workshops, and facilitating school walkthroughs and observation sessions

3.5.3 Implement a Multi-Tiered Support System (MTSS) to deliver a comprehensive, need-based response mechanism that integrates diverse stakeholders, including students, schools, parents, community members, and NGOs

3.5.4 Create a mental health ecosystem to support student well-being

3.5.5 Generate awareness among parents and adolescents on social issues such as child marriage, gender-based violence, and relevant acts such as Protection of Children from Sexual Offences (POCSO) Act 2012, and the Prevention of Sexual Harassment (POSH) Act 2013

[1] Science, Technology, Engineering, Mathematics

3.6 Ensure exemplary teachers and school leaders

3.6.1 Create a comprehensive performance-linked, team incentive system for schools, linked to student outcomes and incentives

3.6.2 Ensure on-time recruitment of teachers and school leaders to maintain standard student-teacher ratio

3.6.3 Transform District Institutes of Educational Training (DIET) to light houses for teacher training and expand to block level ensuring continuous learning across career phases with subject matter training, live classroom-based training component, assessments and certifications

3.6.4 Build training programme for school leaders along with exposure visits to well-performing schools

3.7 Ensure gold-standard governance, systems and resource optimisation

3.7.1 Develop a comprehensive school grading index to categorise schools based on a set of parameters and provide actionable recommendations; create school-wise annual plans based on performance and best practices

3.7.2 Allocate funding for school education in line with the national and global best practices

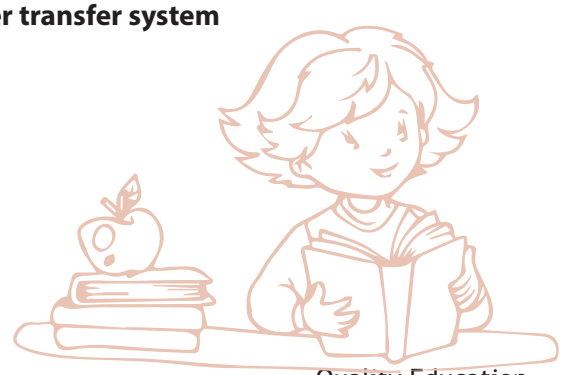
3.7.3 Enable the devolution of administrative and financial powers to school leaders and school management committees (SMC), with adequate checks and balances

3.7.4 Reduce the administrative burden on teachers so they can dedicate 80% of their time to teaching by increasing administrative support in schools for tasks, such as clerical work and mid-day meal facilitation

3.7.5 Expand Vidya Samiksha Kendras (VSK) by establishing them in every block, to facilitate data collection and integration

3.7.6 Leverage SAMS[1] portal to track student learning and outcomes from Anganwadi centres and creches, across all levels of school, higher or vocational education

3.7.7 Establish a fair, on-time and transparent teacher transfer system



[1] Student Academic Management System

4. Priority programmes for immediate implementation

Apart from progress in implementation of key recommendations of NEP, the State will focus on four key priority programmes over the next 24 months:

EXHIBIT 14.7

Programme	Goal	Key activities
Nipun Odisha programme	Empower all students in Government and Government-aided schools with essential reading, writing, and numeracy skills by the end of Grade 3	• Ensure 120 minutes of literacy and 90 minutes of numeracy in all school timetables and pedagogy • Ensure grade-appropriate teaching and learning materials in every classroom, with functional literacy and numeracy corners • Track and map student-wise competencies monthly using the 'Assessment register' • Facilitate regular visits by the Cluster Resource Centre Coordinators (CRCC) to FLN[1] schools using the 'Classroom observation tool'
PM Schools for Rising India (SHRI)	Transform 450 schools (elementary and high or higher secondary schools at the block level) into 'Centres of Excellence' with modern learning environment, serving as role models and providing leadership in their respective regions	• Develop curriculum and pedagogy focused not only on cognitive development but also on creating well-rounded individuals equipped with key 21st-century skills • Integrate gold-standard Information and Communication Technology (ICT) through smart classrooms and digital libraries • Ensure industry-linked vocational interventions • Implement personalised child tracking and growth plans
Panchasakha Sikhya Setu	Transform pedagogy and teaching methods, while enhancing support ecosystem	• Strengthen alumni and community engagement, making school education a shared responsibility • Increase the involvement of stakeholders, such as civil society and industry (through CSR[2]), to revamp schools • Create engaging, locally tailored teaching methods to improve student engagement and comprehension • Develop and disseminate modern learning resources, including digital content, in local languages to enhance accessibility and relevance • Implement capacity building initiatives for educators, equipping them with advanced pedagogical skills for more effective classroom instruction
Godavarisha Mishra Adarsha Prathamik Vidyalaya	Build over 7,000 Panchayat-level schools as learning centres offering multi-disciplinary education by enhancing infrastructure, fostering socio-emotional learning, delivering life skills education, and ensuring equitable learning environments	• Provide well-equipped, safe, and vibrant school campuses with modern classrooms, digital tools, and sports facilities to foster a conducive learning environment • Implement multi-disciplinary educational approaches, including STEM[3], vocational skills, and experiential learning, to prepare students for future challenges and promote 21st century skills • Promote Odia literature and culture through libraries and reading spaces, fostering an appreciation for local heritage and creative writing

[1] Foundational Literacy and Numeracy
[2] Corporate social responsibility
[3] Science, Technology, Engineering, Mathematics

CHAPTER 15

WORLD-CLASS HIGHER EDUCATION: LEARNING FOR FUTURE SUCCESS

Summary

For Odisha to achieve its goal of becoming a 'Developed economy' with USD 1.5 trillion GSDP by 2047, investing in high-quality higher education institutions is paramount. Such investment will unleash its human development potential, driving economic growth through a skilled and adaptable workforce. **Over the next two decades, the State aims to become a home to 100 vibrant educational institutions benchmarked to global standards, empowering Odisha's economic transformation with high quality talent.**

By 2047, the State envisions the following outcomes

- Achieve 50% tertiary Gross Enrolment Ratio (GER) by 2036 and 60% by 2047 with a special emphasis on gender parity and marginalised sector
- Enable jobs, self-employment or advanced study opportunities for more than 60% of graduates by 2047
- Empower two institutions in Odisha to be among global top 500 rankings by 2036
- Establish at least two Higher Education Institutions (HEIs) in each block and at least one Multi-disciplinary Education and Research University (MERU) in each district

Key initiatives to achieve the outcomes

To achieve this, the State is committed to undertaking seven key initiatives in line with recommendations of the National Education Policy (NEP):

Expand coverage of institutions across the State to increase enrolment from 10 lakh to 40 lakhs by 2047

Enable jobs or self-employment for at least 75% graduates by ensuring future readiness through industry-linked curriculum, dual degrees with skill certifications, and apprenticeship-enabled degree programmes, etc.

Ensure high-quality teaching outcomes through continuous teacher-training, hiring reforms, incentives and specialised tracks, etc.

Improve outcomes for all Socially and Economically Disadvantaged Groups (SEDG), particularly for women, scheduled castes (SC) and scheduled tribes (ST)

Facilitate internationalisation through increase in international student admissions and opportunities abroad for Odisha domicile students

Attract over 25 institutes of global and national eminence to establish campuses in Odisha facilitated by new edu-cities and investment policy

Reform governance in line with NEP including granting autonomy to well-performing institutions and gradual phasing out of aided colleges

In the next 24 months, the State will

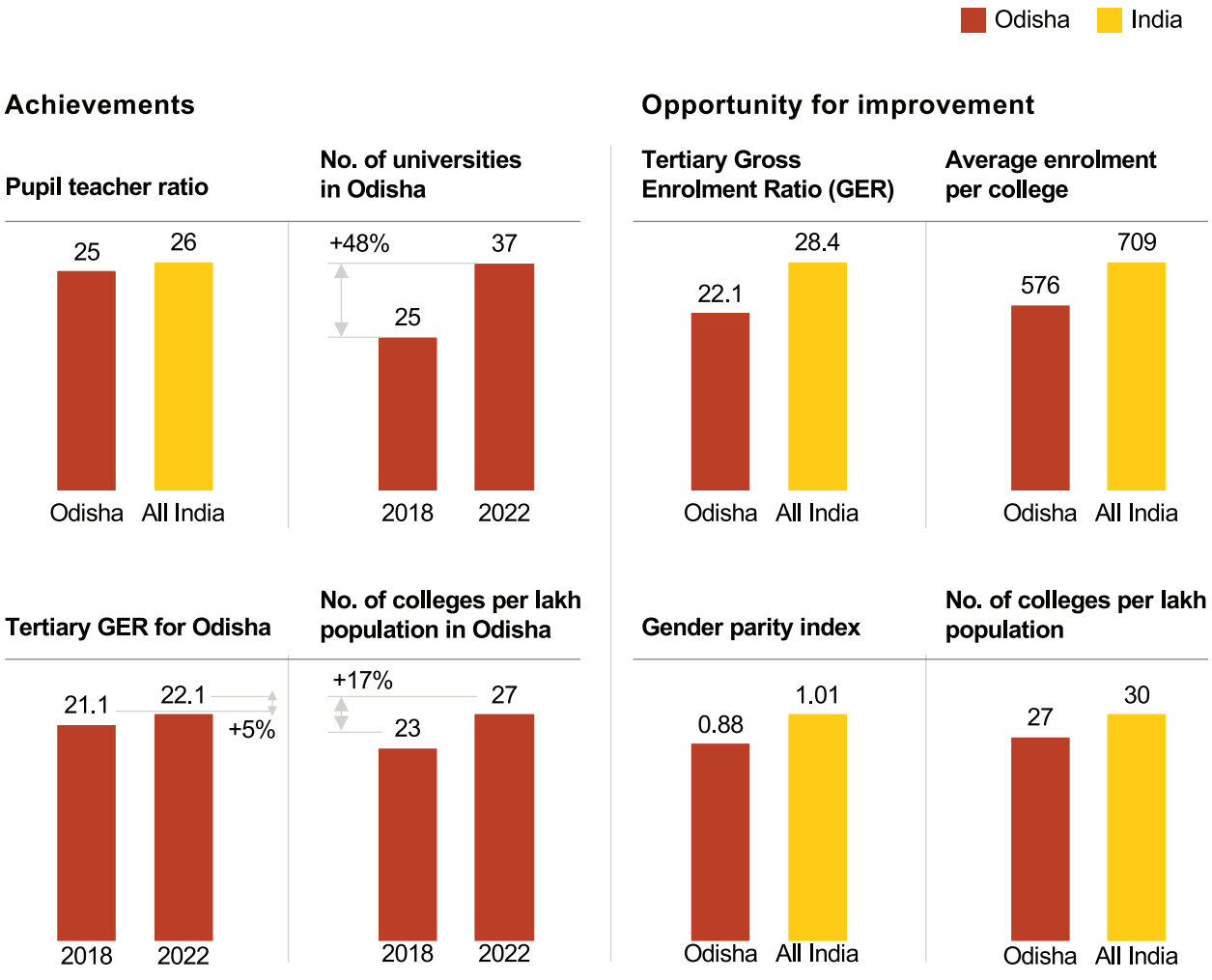
- **Select three State universities** to be developed as model Multi-disciplinary Education and Research Universities (MERU)
- **Launch an internship programme** for all students with Government, PSUs, industry, and research institutions, etc.
- **Introduce a dual-degree programme** for general education combined with parallel skills certification and apprenticeship-enabled degree programmes
- **Revamp Odisha State Open University (OSOU)** as a premier online and distance learning institution and **Ravenshaw University** as a digital university
- **Formulate an 'Odisha education investment policy'** for leading international and national institutions to establish their campuses in Odisha
- **Develop the masterplan for an edu-city** in the proposed Bhubaneswar-Cuttack-Puri-Paradip quad-city region
- Develop a roadmap for **one medical and one engineering college in every district**, and 10 new multi-disciplinary universities

Note: Promotion of entrepreneurship and innovation ecosystem in HEIs is covered under the chapters 'Startup Odisha' and 'Research and knowledge-based economy'

1. Context

Odisha has demonstrated significant progress in metrics related to higher education over the past five years, with progress in pupil teacher ratio, number of universities, tertiary GER growth, and colleges per lakh population. However, there is a room for improvement in certain areas (Exhibit 15.1). For example, the average enrolment per college and college per lakh population for the State are 18% and 10% lower compared to national levels.

EXHIBIT 15.1



Source: All India survey on Higher Education 2021–22

The State has launched several critical initiatives to enhance its higher education system. Some of these are described below:

- **Mukhyamantri Medhabi Chhatra Protsahan Yojana** to provide financial support for undergraduate and postgraduate students in Government, aided, and unaided educational institutions
- **Assistance to universities and colleges for infrastructure development** such as buildings, academic facilities, libraries, hostels, staff quarters, sports complexes, stadiums, and digital libraries
- **Chief Minister's Research, Innovation, and Fellowship Programme (CMRIFP)** which offers research fellowships, seed funding, and extramural research grants for college and university teachers, as well as support for publications and patents
- **100% interest subvention on education loans (KSSY[1])** to support poor but meritorious students in pursuing higher education in India and abroad
- **KALIA (Krushak Assistance for Livelihood and Income Augmentation) scholarship** to provide financial assistance for higher education to the children of farmers
- **Gopabandhu Sikhya Sahayata Yojana** offers financial assistance to students from marginalised, vulnerable and disadvantaged groups to make higher education inclusive and to increase the gross enrolment ratio
- **Odisha post-matric scholarship** from ST & SC Development, Minorities & Backward Classes Welfare for improving enrolment amongst students from ST, SC, OBC, SEBC, and EBC[2] communities

[1] Kalinga Sikhya Sathi Yojana

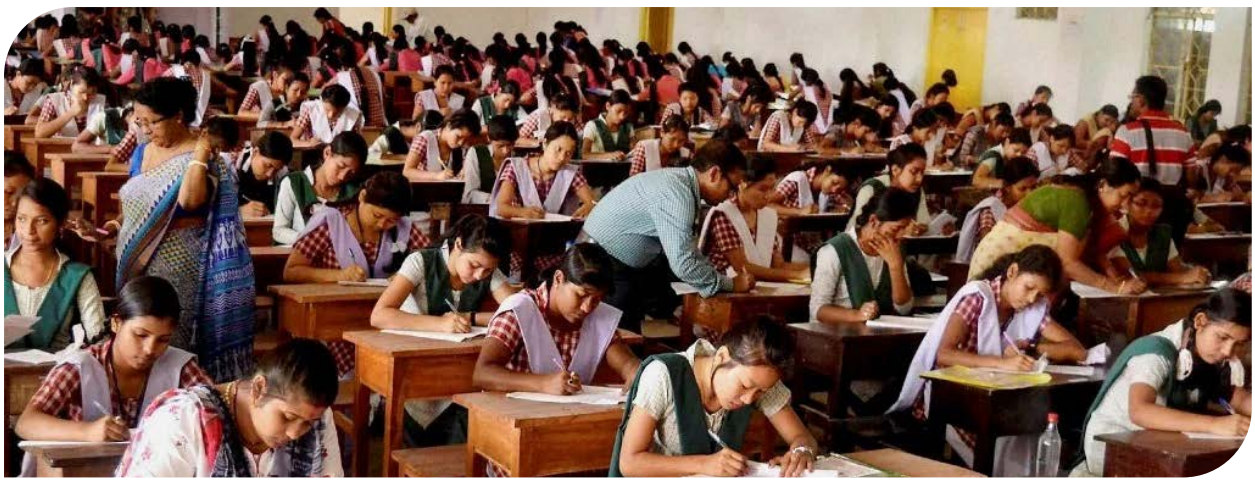
[2] ST - Scheduled Tribes | SC - Scheduled Casts | OBC - Other Backward Classes | SEBC - Socially and Economically Backward Classes | EBC - Economically Backward Class

1.1 Key challenges

Challenges in elevating higher education stem from a variety of reasons, often tied to systemic issues, financial constraints, and socio-economic disparities. In Odisha, these challenges are compounded by several unique factors (Exhibit 15.2).

EXHIBIT 15.2

- **Limited funding for general education**, not at par with vocational and professional education
- **Disparities in access to higher education** for rural, tribal and marginalised communities
- Many colleges and universities **lack modern and inclusive infrastructure** like labs, digitally accessible libraries, smart classrooms, and disabled-friendly facilities, etc.
- **High dependecy on private colleges** with mixed educational outcomes
- **High student-to-faculty ratios**, insufficient qualified teachers and difficulty in retention of high-performing faculty
- **Non-satisfactory employment outcomes** for non-STEM[3] courses due to significant gap between industry demand and skills gained



[3] Science, technology, engineering, and mathematics

1.2 Key trends

Global and national trends play a significant role in shaping the higher education sector, influencing everything from curriculum design and research priorities to technology adoption and funding models. Trends impacting Odisha's higher education system include:

EXHIBIT 15.3

Focus on employment-ready skills: Enhanced university-industry collaboration to align curricula with job market needs, and launch dual certification in job-related or entrepreneurial skills with traditional degrees

Emergence of digital, blockchain and AI-driven systems: Increased use of technology in education - like teaching, assessment, management - to enhance the efficiency of processes and impact of learning. E.g., in India APAAR ID aims to set up holistic credit system across learning stages

Internationalisation of education: Increasing collaboration with top global universities for joint and dual degree programmes, student exchange, research initiatives and satellite campus setup e.g., Deakin university campus in GIFT[4] city

Specialised degrees gaining popularity: Shift from demand in traditional degrees like medical, law and engineering to specialised degrees like digital analytics, finance, robotics, finance and investments, and entrepreneurship, etc.

Autonomy and accreditations: Increased autonomy for colleges and universities to design curricula and governance, supplemented by quality assurance through accreditation

Source: Industry experts, World Economic Forum, OECD, UNESCO, ASER report

[4] Gujarat International Finance Tec-City

2. Vision and outcomes

By 2047, the State envisions to establish Odisha as a leader in higher education, with 100 institutions benchmarked to global standards, consistently ranked among the best. Through these institutions, in line with recommendations of National Education Policy, the State will aim to equip students not only with academic knowledge but with the practical skills needed to thrive in a rapidly evolving job market.

EXHIBIT 15.4

VISION 2047

Home to 100 vibrant institutions benchmarked to global standards, creating employable and entrepreneurial talent

Note: Promotion of entrepreneurship and innovation ecosystem in HEIs is covered under the chapters 'Startup Odisha' and 'Research and knowledge-based economy

[1] National Institutional Ranking Framework (NIRF)

1.3 Key outcomes

To realise these aspirations, the State has established clear, ambitious targets for 2029, 2036, and 2047, which act as measurable outcomes and benchmarks to track progress.

EXHIBIT 15.5

Key outcomes	Unit	Current status	2029	2036	2047
Tertiary Gross Enrolment Ratio (GER)[1]	%	22	35	50	60
Jobs, entrepreneurship or advanced education for all graduates	%	-	25	50	75
Number of universities in global top ranking (QS Rankings)[3]	#	0	1 in top 500	3 in top 500	5 in top 500
Number of universities in India top 200 ranking[4]	#	4	5 in top 200	10 in top 200	15 in top 200
Number of International students in Odisha[1]	#	2.3k	10k	25k	50k
Share of accredited institutions (NBA, NAAC, and NIRF) [4]	%	<5%	50%	100%	100%
Inclusive infrastructure [5]	%	-	75	100	100
SC/ST students currently sponsored for post-graduation or research abroad	#	-	250	500	2000
Student-to-faculty ratio	Ratio		20:1	18:1	15:1

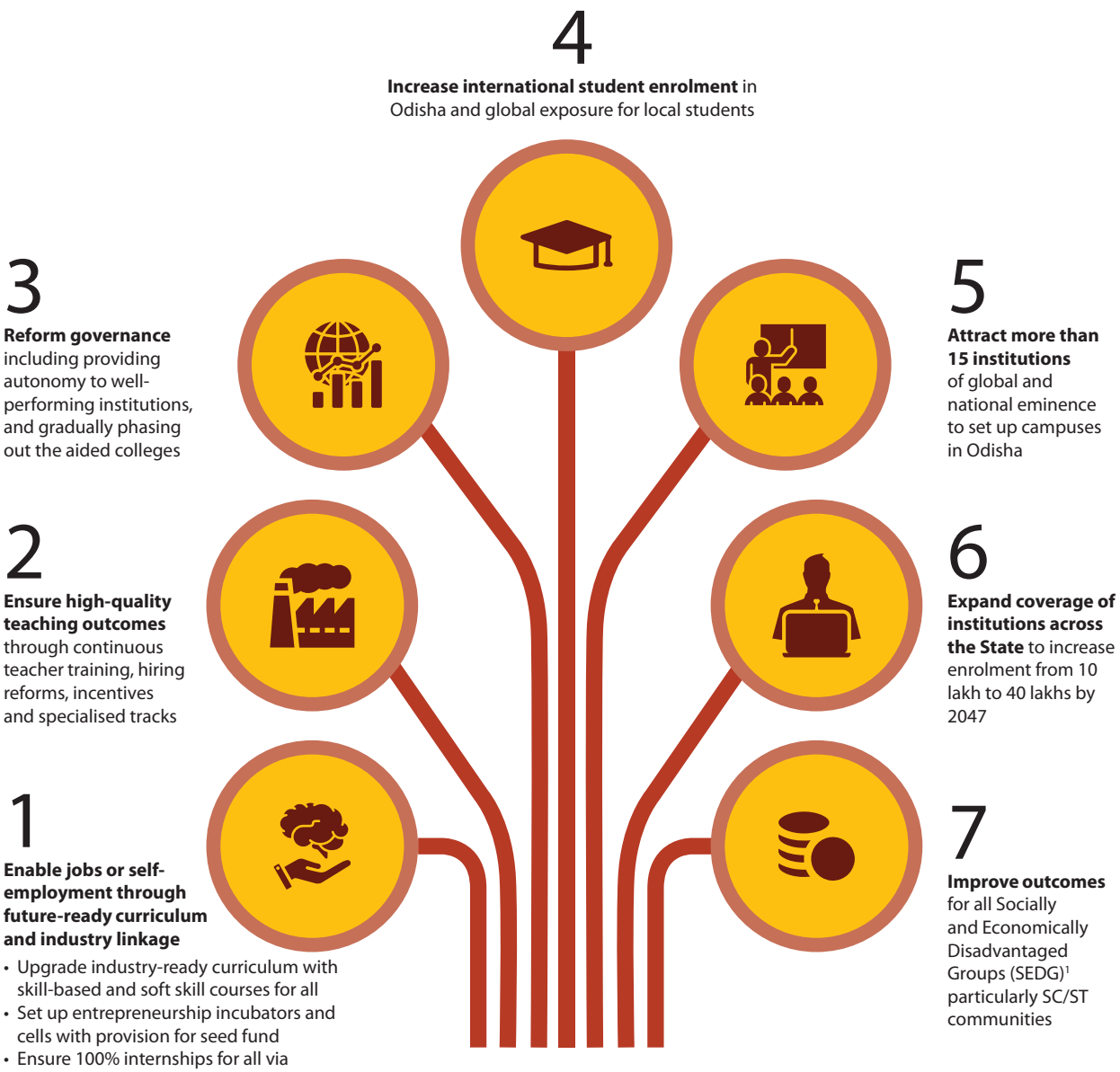
[1]AISHE
[2]World Bank
[3]Quacquarelli Symonds World University Rankings
[4]NIRF ranking 2022
[5]NAAC
[6]Women hostels, all gender toilets, accessibility for physically challenged

3. Key initiatives

To achieve this Vision and its targeted outcomes, seven strategic initiatives will be launched, focusing on key areas such as enhancing institutions, enabling job readiness, teacher training, promoting Socially and Economically Disadvantaged Groups (SEDG), the internationalisation of education, collaboration with foreign universities, and strengthening governance.

EXHIBIT 15.6

All initiatives are aligned with recommendations of National Education Policy 2020



[1]Socio-Economically Disadvantaged Groups (SEDGs) as defined in NEP covers SC, ST, OBC, EWS, Women, Physically Challenged, transgender, first-generation learners among others

3.1 Enable jobs or self-employment for graduates

The State will take targeted actions for workforce readiness and employer satisfaction, ensuring that graduates are well-prepared for the job market.

EXHIBIT 15.7

Projects	Policies and institutions
Launch an internship programme for all students with Government, PSU, local industry, businesses, and NGOs, etc., as well as research institutions to improve their employability. Aim to reach 30% student participation by 2029 and 50% by 2036	**Set up industry** councils for each programme to provide inputs on curriculum and internship development
Review and update the curriculum for all programmes for future and industry readiness, conducting continuous reviews every three to five years	**Establish e-cells** in all colleges and incubators in a hub-and-spoke model to support budding entrepreneurs (incubators to have provisions for a seed fund)
Launch dual degrees options for all general education programmes with skills certificate programmes to make graduates more employable	**Set up industry outreach and placement cells** in each institution to foster apprenticeships, and full-time employment
Ensure holistic counselling support for all students, including mental health services, coaching, and resume preparation, etc.	**Create a State-level body** in public-private partnership mode to serve as an anchor for HEI-level industry outreach and placement cells
Launch new specialised and market-linked programmes, e.g., digital analytics, AI/ML, robotics, aerospace and spacetech	**Establish finishing schools** in universities with industry partners to offer hands-on **training, bridge** skills gaps and provide soft skills
Design and introduce **apprenticeship-enabled degree programmes**	**Build industry partnerships** for overall improvement in education and skill outcomes
Allow flexibility through multiple entry and exit options, in line with NEP	

3.2 Ensure adequate, high-quality teaching

By investing in skilled educators and innovative teaching methods, Odisha can significantly enhance student outcomes and engagement, preparing its youth for future challenges and opportunities.

EXHIBIT 15.8

Projects	Policies and institutions
Launch a new track for 'Professors of Practice': Induct industry professionals to teach on a part-time format, based on their areas of expertise	**Develop custom programmes for faculty recruitment** (including prominent non-resident Odias) without restrictions on salary and incentives
Launch a leadership programme in higher education: Identify well-performing faculty and groom them for future leadership through targeted training	For the academic track, mandate that all faculty members across all universities in the State **hold a PhD** or encourage them to do so
Launch a comprehensive performance-linked incentive and promotion system (similar to a tenure track) with multiple parameters such as peer and student reviews, innovations in teaching and pedagogy, quality and impact of research, and community contributions	Increase recruitment and institute mechanisms to ensure **NEP-recommended** ratio is maintained - that is, hire additional 16,000 faculty members by 2036
Set up a 'Virtual training programme' in PPP mode for personalised training in content and pedagogy	Establish the **'Odisha Higher Education Teachers Training Institute (OHTTI)'** by 2029 to provide state-of-the-art, train-the-trainer programmes taught by leading national and international faculty
	Aim to make all HEIs multi-disciplinary and fully implement NEP 2020

3.3 Reform governance in line with National Education Policy

EXHIBIT 15.9

Projects	Policies and institutions
Launch a challenge programme for colleges to become eligible for autonomy: Provide support and mentorship to help institutions achieve minimum benchmarks in academic and curricular matters, teaching and assessment, governance, financial robustness, and administrative efficiency	**Release transparent guidelines for institutions** to be designated as eminent to grant autonomy, including accreditation and other metrics that need to be achieved
Build a unified online database starting with Anganwadi enrolment with a single student ID where all progress metrics are recorded year-on-year	**Outline institutional measures to be put in place by institutions once granted autonomy** (i.e. Board of Governors with qualified, competent individuals to govern and make appointments, etc.)
Integrate UDISE[5] data with Odisha's Student Academic Management System	**Strengthen State institutions** such as 'Odisha State Higher Education Council'
Leverage Academic Bank of Credits (ABC), Automated Permanent Academic Account Registry (APAAR) ID and blockchain technology for **transparent and secure digital storage and transfer of student certificates**	**Develop a policy to phase-out Government-aided educational institutions** and enable integration; potentially link future grants to student performance in colleges
Launch a comprehensive ranking system for State higher education institutions leveraging existing national rankings; create **institution-wise annual growth plans** linked to performance with incentives for improvement	

[5] Unified District Information System for Education

3.4 Increase international student enrolment in Odisha and global exposure for local students

The State will welcome international students to not only enrich educational environment but also foster cultural exchange and spur global competitiveness. Additionally, the State will also create exposure for local students internationally, to set them up for success as global leaders.

EXHIBIT 15.10

Projects	Policies and institutions
Launch a promotional programme and scholarships to position Odisha as a hub for foreign students from Africa, Southeast Asia, etc.	Set up a global office to generate awareness and provide support to international students; build dedicated hostels to ensure student safety
Establish a fund to provide financial support for research and teaching collaborations and faculty or student exchanges with leading institutions	**Allow credits acquired in foreign universities**, where appropriate, as per the requirements of each HEI
Create dual or special programmes at select State universities through partnerships with eminent national and international institutions (e.g., semester abroad programme)	

3.5 Attract over 25 institutions of global and national eminence to set up campuses in Odisha

Attracting top universities will help the State improve education quality, enhance research capabilities and create more job opportunities. It will also help position Odisha as a key educational hub.

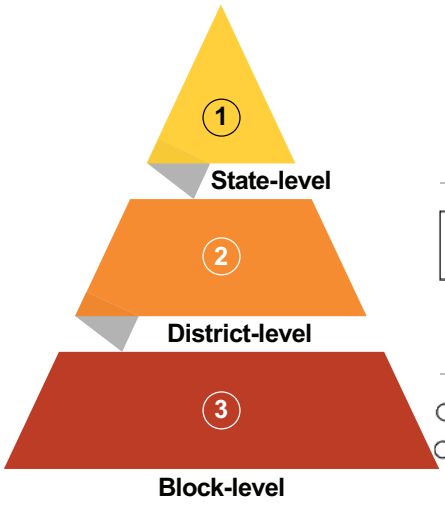
EXHIBIT 15.11

Projects	Policies and institutions
Establish three education cities by 2036. Provide fast-track single-window approvals, and other support for leading institutions to set up campus	**Formulate 'Education Investment Policy'** to attract leading international and national institutions, as well as Government institutions, to set up campuses in Odisha. Will include fiscal and non-fiscal incentives along with a legislative framework with appropriate special dispensation regarding regulatory, governance, and content norms
Commission masterplans and Vision for edu-cities, along with phase-wise milestones	Set up a PMU to **conduct roadshows, attract investments, and provide support to interested institutions**
Develop six education investment zones by 2036	Establish an **inter-departmental task force** with relevant representation to fast-track approvals and monitor progress

3.6 Increase enorlment in higher education institutions from 10 lakh to 40 lakh by 2047 through establishing new and expanding current institutions

To achieve target GER and expand access, it is critical to establish new institutions and expanding existing ones to accommodate a larger number of students. Hence, the State will adopt the following multi-tiered framework:

EXHIBIT 15.12



- Directorate or mission to focus on quality control of HEI
- Revamp Odisha State Open University (OSOU) as eminent distance institution with quality online courses in local language, digital library and virtual labs for all students
- Develop Ravenshaw University as Odisha's first 'Digital university' by 2029. By 2036, upgrade OSOU to digital university

- Multi-disciplinary Education and Research Universities (MERUs) as defined per NEP with around 1,000 enrolment for optimal use of infrastructure and resources, and for the creation of vibrant communities
- One medical college and one model engineering college per district

- Two HEI in each block in a hub-and-spoke model with all the three streams of general educations, integrated with smart classrooms, virtual labs, inclusive and women-friendly infrastructure

3.7 Improve outcomes for all Socially and Economically Disadvantaged Groups (SEDG) particularly SC/ST communities

The State will aim to achieve at least 50% Gross Enrolment Ratio (GER) for all SEDGs, particularly SC/ST students

EXHIBIT 15.13

Projects	Policies and institutions
Set up a scholarship portal to provide financial assistance to all SEDG, especially tribal students, for education in leading Indian and global institutions; Funds to be provided by Government, CSR foundations, impfact funds, and individual philanthropists	**Set clear targets for higher GER for SEDG**; release comprehensive phase-wise targets for all disadvantaged and vulnerable groups
Launch scheme for foreign student for SC/ST students in higher education	**Build high-quality HEI** in all aspirational districts and areas containing larger numbers of SEDG
Expand high quality Odia and bilingual programmes in focus colleges and via distance education targeted at SEDG	**Establish a tribal university by 2036** to preserve and promote indigenous languages and knowledge systems
	Launch programme to build inclusive infrastructure for physically challenged and dedicated hostels for women in all HEI

CHAPTER 16

SKILLED IN ODISHA, SKILLING FOR THE WORLD

Summary

To achieve the goal of a USD 1.5 trillion economy by 2047, **Odisha is committed to harness the potential of its young demographic dividend** through comprehensive skill development efforts - creating 1.2 crore new high productivity jobs by 2047. Under the flagship brand of 'Skilled-In-Odisha', the State has taken several initiatives including the 'World Skill Centre' set up in Bhubaneswar, 'Sudakshya' scheme to empower girls in skill-based effort, NUA Odisha for skilling in aspirational sectors, 'Chief Minister's Skill Development Fellowship Programme' to strengthen decentralised skilling, and introduction of employability skills in Industrial Training Institutes (ITIs) and Polytechnics.

In the long term, Odisha aims to become a global skilling hub with top-tier institutions and programmes, offering industry-aligned, employment-linked, and lifelong vocational education for all.

By 2047, the State envisions the following outcomes

- Establish at least seven campus of World Skill Centre (WSC) by 2047, targeting at least five by 2036
- Saturate access to ITIs / ITCs with industry-driven Centres of Excellence (CoE) in all the 314 blocks
- Increase the annual Government short-term skilling capacity to 2.5 lakh by 2047, reaching 1.5 lakh by 2036
- Facilitate the overseas placements of at least 1 lakh youth by 2047; achieving around 25k per year by 2036

Key initiatives to achieve the outcomes

Enhance the 'Skilled in Odisha' brand through world-class skilling institutions, providing top-tier training, cutting-edge facilities, and industry-relevant curriculum

Leverage industry integration across the skilling spectrum to enhance employability. This includes collaborating with leading companies to design curriculum, provide hands-on training, and offer real-world experience through internships and apprenticeships

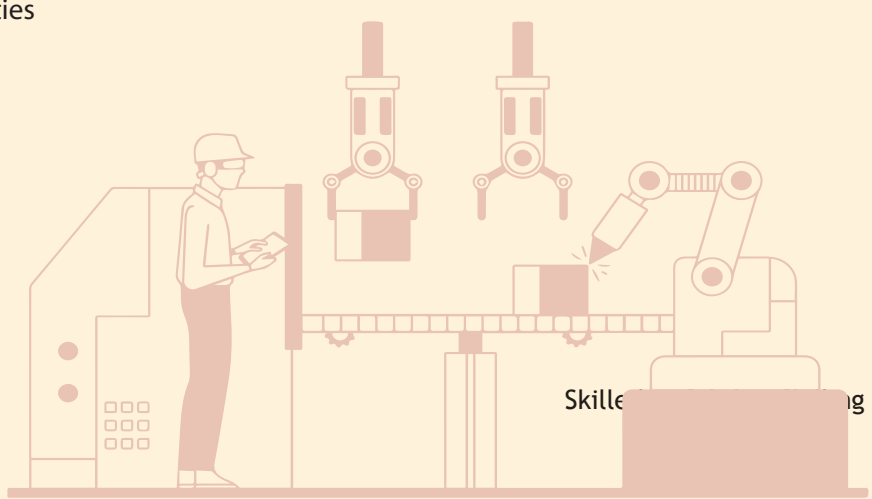
Position Odisha as a hub for skilled talent for local and global markets by promoting its robust skilling programmes, fostering international collaborations, and showcasing the success stories of skilled professionals from the region

Build an aspirational skilling pathway in education institutes that provides students with clear, progressive steps to acquire skills, gain certifications, and pursue careers in various industries, fostering a culture of continuous learning and professional growth

Ensure lifelong learning and skill enhancement for workers by offering accessible upskilling and reskilling programmes. These programmes will be designed to help workers stay current with industry trends, adapt to new technologies, and advance in their careers, ensuring sustained employability and professional development throughout their working lives

Promote inclusive skilling practices to create a fair and diverse workforce

Establish a unified strategy for the gig economy in Odisha to address its unique challenges and opportunities



Over the next 24 months, the State will

- **Expand the World Skill Centre (WSC)** at Bhubaneswar and establish three new campus of WSC in areas like IT/ITeS, Semiconductor, Aerospce, Marine, etc.
- **Establish 10 zonal ITIs** across the State
- **Set up industry-driven Centres of Excellence (CoE)** in at least 50 ITIs
- **Introduce skilling programmes** in higher education institutions
- Launch **Skilled-in-Odisha Digital Hub** as a unified portal for skilling

1. Context

Odisha boasts a young demographic dividend, with approximately 70% of its population in the employable age group (15-59 years), a trend likely to continue for the next 20-30 years. However, the State faces socio-economic challenges, including low urbanisation rates, high dependency on agriculture, large workforce (around 90%) in the unorganised sector, and high dropout rates in schools and colleges. Tackling these issues and fostering economic growth requires strong skill development initiatives.

Recognising this, Odisha established the Odisha Skill Development Authority (OSDA) to lead skill development programmes - empowering the workforce, nurturing entrepreneurship, and driving socio-economic growth. Key schemes and initiatives undertaken by the State include:

- **'Skilled in Odisha'**: An aspirational skilling brand aimed at enhancing employability and entrepreneurship through comprehensive vocational training, industry partnerships, and state-of-the-art infrastructure
- **Sudakshya scheme**: Designed to boost female enrolment in Government ITIs and Polytechnics by offering free admission, covering basic expenses, and providing post-training placement and apprenticeship support
- **Nua Odisha scheme**: A programme for continuous skilling, reskilling, and upskilling of youth
- **Nano-unicorn scheme**: Aimed at promoting micro-entrepreneurship among 'Skilled in Odisha' youth

Through these efforts, the State has made significant progress in creating a robust skilling ecosystem:

EXHIBIT 16.1

World Skill Centre in Bhubaneswar built in partnership with ITEES[1] Singapore, offering advanced skilling in emerging sectors

72 Government ITIs and 35 Government polytechnics established for hands-on vocational training

18+ CoEs[2] operationalised or commissioned to create technology hubs, provide solutions, and offer industry exposure

82 'Skill Development Centres' or 'Skill Development Extension Centres' set up or planned for district-specific skilling programmes

'Model Career Centres' set up for counselling and placement related services

Kaushal Bhawan launched for skilling in hospitality sector

Improved enrolment in ITIs, while reducing the vacancy in Government ITIs by 36% between FY2017-23

Introduced 'Sudakshya' to increase the female enrolment by 16.5 p.p.[3] in Government ITIs (FY2017-23) and 17 p.p. in Government polytechnics (2022-24)

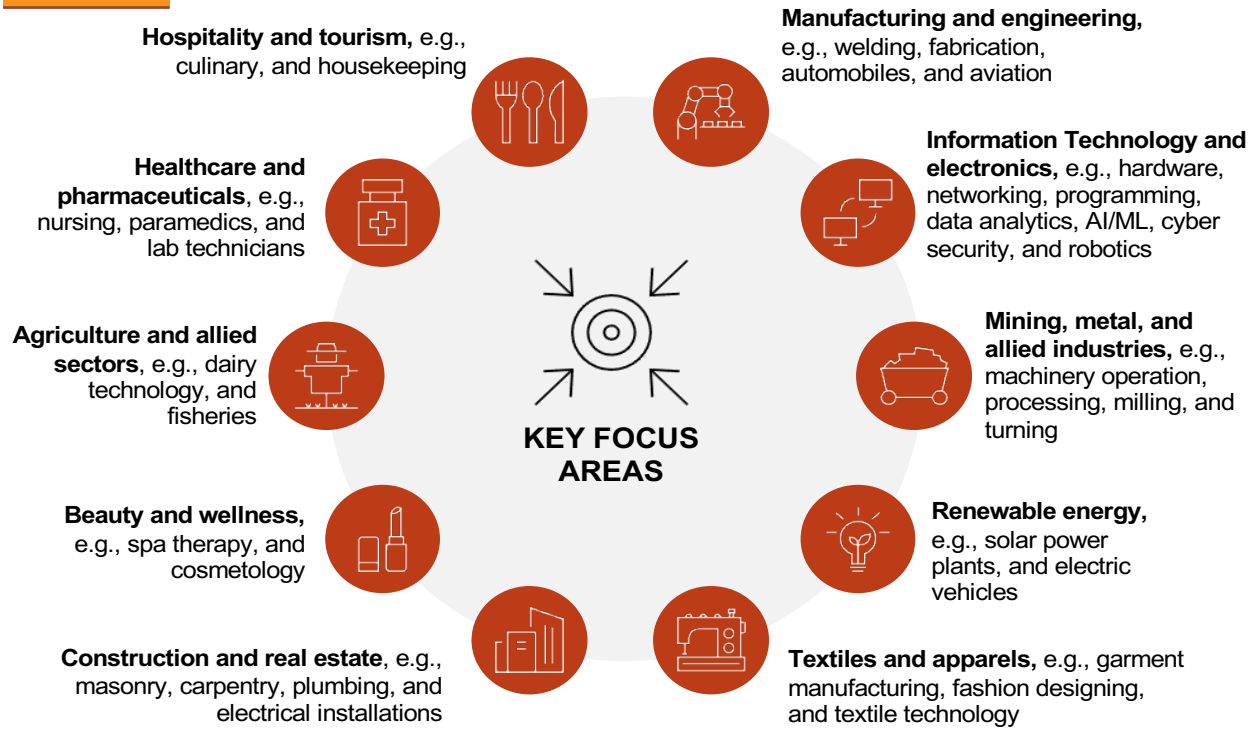
[1] ITE Education Services

[2] Centres of Excellence

[3] percentage points

Additionally, Odisha has designed and launched targeted programmes for job-ready workforce across several sectors:

EXHIBIT 16.2



Partnerships with leading organisations

Microsoft · Larsen & Toubro · IBM · Siemens · Dassault Systèmes · Johnson Lifts & Escalators · Autodesk · OMC · Tech Mahindra · Schneider Electric · coursera · SAP · Fronius · Mahindra Electric · Cisco

1.1 Key challenges

The State has taken multiple initiatives to build a thriving skilling ecosystem. However, it needs to overcome certain roadblocks and adapt to latest industry trends to further scale up the skilling programmes:

EXHIBIT 16.3

- **Limited industry participation** in developing vocational training programmes aligned with industry trends and ensuring employment linkage
- **High focus on blue-collar jobs**, with limited industry-linked vocational training options for high-tech skills
- **Societal stigma and low awareness** about the economic benefits of vocational education
- **Uneven distribution of training infrastructure**, with a concentration in traditional industrial areas or urban centres
- **Fragmented skilling ecosystem** with a focus on short-term (3-6 month) courses. ITIs and Polytechnics currently lack direct integration with school and higher education systems

1.2 Key trends

As global job skills evolve rapidly due to technological advancements, companies and Governments worldwide have launched various initiatives to upskill their working populations in line with the emerging trends:

EXHIBIT 16.4

Growing edtech sector: Short-term certification courses especially on software and tech tools and communication, etc. are being offered online, leading to increased accessibility for all

Innovative pedagogical approach: Trainer ecosystem focusing on practical and experiential learning

National focus on skilling to increase employability: The Central Government has launched multiple schemes to focus on skilling and on-the-job training, e.g., Skill India, Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and PM Internship Scheme

Industry 4.0 skills: Focus on upskilling workforce in tech-enabled manufacturing e.g., use of connectivity, IoT and AI etc.

Sustainability and energy transition: Growth in demand of specific skills such solar panel installation, electronics and electrical skills, etc.; upskilling of fossil-based industry workers to adapt to the industry changes

Service-led gig economy: Increase in e-commerce, ride-hailing and home services etc. have seen growth of gig-economy and related skills

2. Vision and outcomes

Odisha aims to foster a world-class skilling ecosystem that equips the workforce with cutting-edge competencies and aligns with international industry standards. By leveraging advanced training programmes and strategic industry partnerships, Odisha aims to position itself as a leader in producing highly skilled professionals ready to meet local, national and global market demands.

EXHIBIT 16.5

VISION 2047

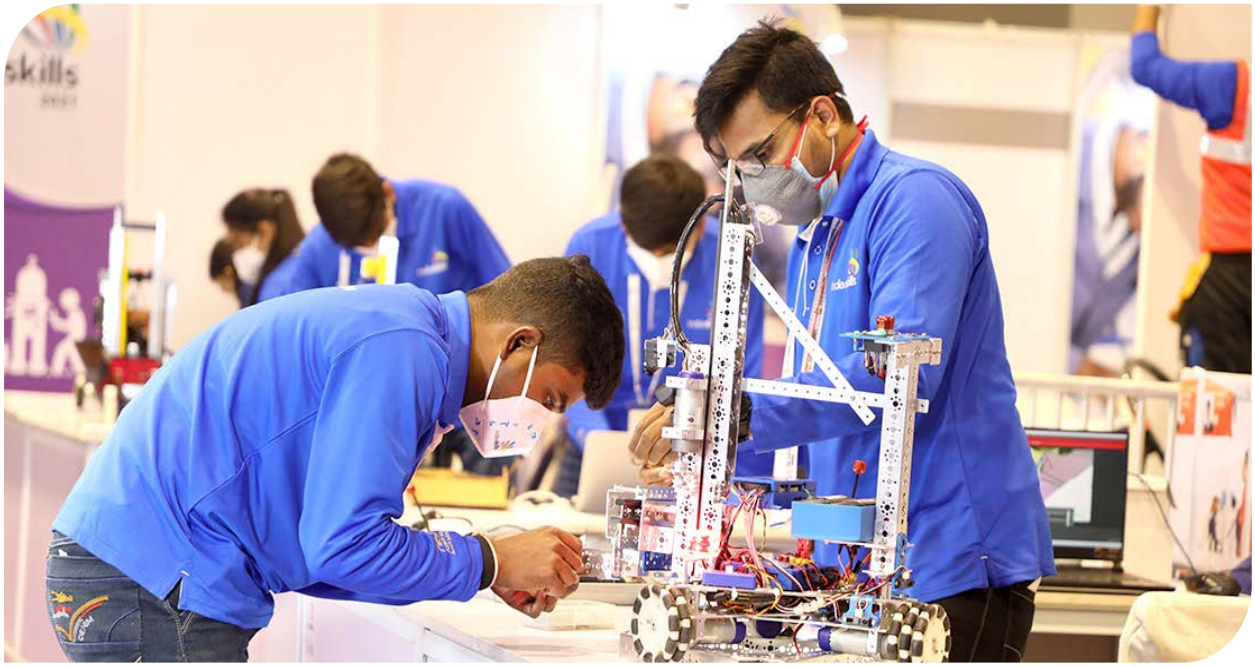
Become a global skilling hub with top-tier institutions and programmes, offering industry-aligned, employment-linked, and life-long vocational education for all

2.1 Key outcomes

To achieve this goal, the State will track its progress across the following key parameters:

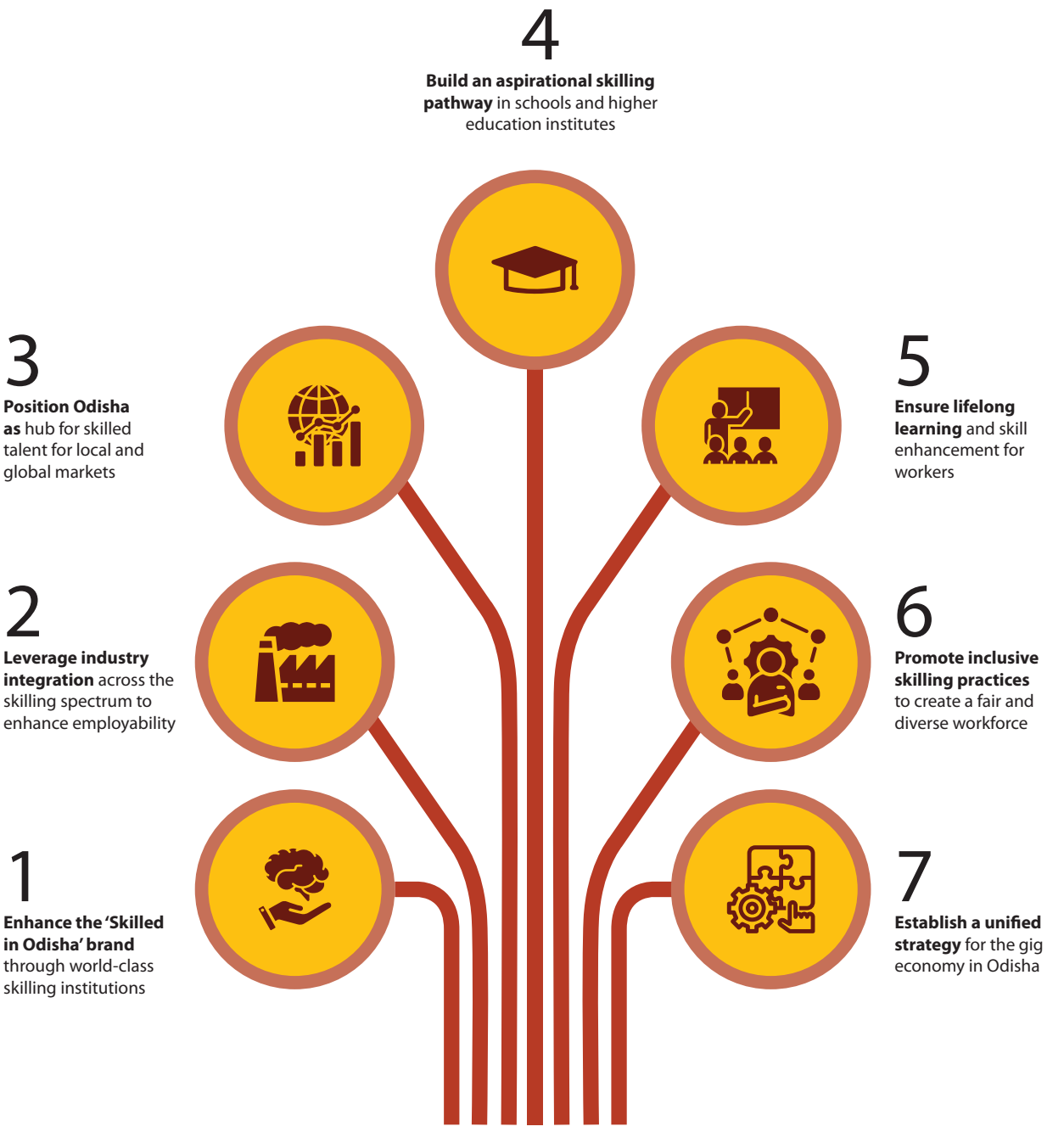
EXHIBIT 16.6

Key outcomes	Unit	Current	2029	2036	2047
Campus of World Skill Centre	Nos.	1	3	5	7
Annual intake capacity of World Skill Centres	'000 nos.	2	16	30	50
Number of ITIs/ITCs	Per block	0.23	0.25	0.45	1.00
Zonal ITIs	Nos.	0	10	15	30
Industry-partnered CoEs in ITIs	Nos.	18	79	141	314
Annual Government capacity for short-term skilling	'000 nos.	35	70	150	250
Annual nano-unicorn programme beneficiaries	'000 nos.	0.4	3	5	20
Youth placed overseas annually	'000 nos.	0.1	7.5	25	100



3. Key initiatives

The State will build its skilling ecosystem through seven key initiatives:



3.1 Enhance the 'Skilled in Odisha' brand through world-class skilling institutions

3.1.1. Expand World Skill Centre as a hub for 'Skilling for the world' and establish specialised hubs to drive innovation-led skilling across key emerging sectors

- **Enhance the intake capacity** by introducing courses in high-demand fields, such as marine engineering, digital animation, aerospace technology, avionics, semiconductors, logistics, and supply chain management
- **Establish new campus of WSC focussing on Agritech** for skilling in agriculture and agritech, fostering innovation and sustainability. Its key focus areas will include:
  - Smart farming, precision agriculture, and climate-smart practices
  - Agri-fintech solutions, post-harvest management, and agro-processing
  - Agri-automation, vertical farming, hydroponics, cold chain operations, and arboriculture
- **Build new campus of WSC focusing on IT/ITeS** focused on upskilling and reskilling the workforce in future technologies, such as:
  - Artificial intelligence, machine learning, and data analytics
  - Industry 4.0 technologies: Internet of Things (IoT), robotics, automation, and smart systems
  - Blockchain, cybersecurity, cloud computing, and software development

3.1.2. Establish the 'Odisha Skilling and Entrepreneurship University (OSEU)'

- **Ensure progressive skilling pathway** by offering a range of skilling options from certification courses to graduate programmes, with a strong focus on placement outcomes. This enables both horizontal and vertical mobility through multiple entry and exit points
- **Collaborate with leading industry players** and national and international universities to develop a cutting-edge curriculum for all affiliated institutions
- **Strengthen the skills and knowledge of faculty** in vocational institutions across the State through partnerships with industry and academic institutions
- **Establish an 'Industry-outreach and placement cell'** operating in a hub-and-spoke model to facilitate industry connections and job placements
- **Enhance the delivery of vocational education** across the State by utilising phygital systems, such as AR/VR labs for simulation-based learning and digital dashboards for tracking learning outcomes
- **Acknowledge credits for skills** acquired through self-learning, informal engagement with the corporate sector, apprenticeships, and other non-traditional learning methods

3.1.3. Provide ecosystem support to enhance the 'Skilled in Odisha' brand

- **Launch the 'Skilled-In-Odisha digital hub'** as a unified portal serving as a single gateway for all skilling initiatives in the State
- **Build brand recognition among industry players** through existing and new conclaves, and targeted roadshows aimed at large employers
- **Run youth awareness campaigns** to position vocational education as 'Aspirational' and reduce any associated stigma
- **Enhance ground-level visibility** by bringing all the skilling programmes under the 'Skilled in Odisha' brand through common branding of training centres
- **Implement counselling programmes**, set up counselling camps and 'Kaushal Rath', and strengthen 'Model career centres' to provide guidance and support to students and job seekers

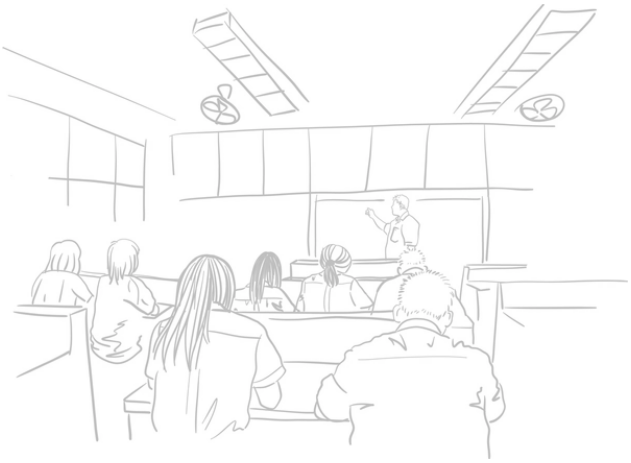
3.2 Leverage industry integration across the skilling spectrum to enhance employability

3.2.1. Scale up zonal Industry Training Institutes (ITIs)

- **Establish zonal ITIs in (one per district)** with enhanced capacity and robust industry engagement. These will be strategically located around key industrial and educational hubs of the State with a focus on new-age trades, industry-ready infrastructure, industry-led CoEs, entrepreneurship and placement cells
- **Allow autonomy for these ITIs** including flexibility in curriculum, multiple shift operations and varied course durations, etc.

3.2.2. Expand and strengthen ITIs and Polytechnics in partnership with industries

- **Set up ITIs / ITCs in all uncovered blocks** across the State
- **Offer incentives to industry players**, including infrastructure (land and building), procurement and installation of equipment, machinery, and toolkits, and trainers to train the existing faculty
- **Scale up the programme for industry players** to set up or adopt existing ITI and Polytechnics in a public-private partnership mode



3.2.3. Upgrade curriculum to be industry and future demand-relevant

- **Set up a 'Skill Assessment Unit'** to study the recent trends, upcoming investments and suggest relevant trades for both short-term and long-term skilling
- **Enhance industry-ready training** by digitising delivery through technologies such as augmented reality, virtual reality, mixed reality, and simulator
- **Mandate foundational courses** on digital competencies, professional and social skills for all vocational graduates, as illustrated in Exhibit 16.7

[1] Amount of time spent in the classroom to the amount of time spent on the shopfloor

EXHIBIT 16.7

Focus on priority skills for increased employability

Industries Services

Thrust sectors for the State based on endowments, trends and employment intensity

Metal downstream products and metal-intensive industries such as ship-building, aerospace and defence manufacturing

Food processing including cold-chain operations and agro-processing

Maritime services such repair and maintenance of vessels, navigation, etc.

Chemicals and petro-chemicals

Automotive

R&D in emerging technology e.g., biotech, aerospace, and defense

Services incidental to transport like cab drivers or chauffeurs, and metro operators

Textile and apparel

Electrical equipment

Retail, trade and e-commerce

Repair and maintenance services

Air transport-related services

Electronics

Tourism and hospitality, including restaurants

Advanced financial services and technology

IT/ ITes

Software and cybersecurity services

Real-estate management and construction services

Arts, entertainment and recreation

Education and vocational training

Others like home services, professional grooming, and drone operators, etc.

3.2.4. Provide apprenticeship and full-time employment opportunities through industry partnerships

- **Apprenticeship programme for local industries**: Introduce a comprehensive apprenticeship programme to align local youth with the State's core industries, including IT-enabled logistics, digital platforms, and emerging technologies
- **Industry and alumni engagement**: Regular sessions with industry leaders and alumni to be organised to bridge the gap between training programmes and industry requirements
- **Placement support across ITIs and Polytechnics**: Placement cells to be established under a hub-and-spoke model, connecting students with opportunities for apprenticeships, internships, and employment in priority sectors
- **State skill development calendar** to align recruitment drives and workforce planning with the production schedules of key industries, driving efficiency and growth in Odisha's logistics, IT, and cultural tourism sectors

3.3 Position Odisha as a hub for local and skilled talent for global markets

The State will seek to become a hub to meet global skilled human resource shortages in areas such as hospitality, healthcare, transportation and construction, with a focus on creating high wage jobs. Towards achieving this goal, the State will prioritise the following sectors and target markets in short-term:

EXHIBIT 16.8

	Rationale	Target country	No. of jobs[1] (lakh)	Average pay (INR lakh)	Time to upskill (in months)
Tech Talent	• Premium job profile with significant demand due to growing focus on digital transformation • Precedence of talent migration abroad	Singapore, UAE and other GCC countries[3], Australia, UK, USA, Hong Kong, Germany, Netherlands	35	15-80	0 6
Elder caregiver	Significant demand due to ageing population	Japan, Germany, UK, Singapore	33	20-40	0 6
Nurse	• Premium job profile with established agencies and strong demand • Precedence of other Indian States sending talent abroad	Japan, UK, Australia, Singapore, UAE, Saudi Arabia, USA	8	20-70	0 6
Drivers	Existing supply base for drivers in Odisha	Japan, Qatar, Maldives	6	10-25	0 6
Hospitality staff	Significant demand from growth in tourism	UAE, Saudia Arabia, Japan	1	18-20	0 6
Aviation ground staff	Significant demand from leading airlines	Japan	0.1	20-24	0 6

1. Projected up to 2030
2. Pay range might vary by country of recruitment
3. Gulf Cooperation Council

To deliver on this aspiration, the State will:

3.3.1. Build vibrant 'International Career Centre' for facilitating overseas mobility of 'Skilled in Odisha' youth

- **'International Career Centre'** to engage with Indian embassies in destination countries and forge partnerships with foreign Governments, placement agencies and corporations for placements
- **Facilitate international twinning programmes** in ITIs and Polytechnics for creating a pool of global-ready skilled youths
- **Offer language skilling programmes** aligned with the global requirement of skilled human resources
- **Set up an outreach cell** to engage with industries in destination countries to ascertain local demand and customise skilling programmes
- **Continue to update target markets and job roles** for Odia youth through labour market demand and supply analysis
- **Develop guidelines** and ensure course delivery standards, testing, and certification align with target job profiles and end market requirements
- **Provide targeted fiscal- and non-fiscal incentives** to training providers

3.3.2. Mobilise target audience for overseas mobility

- **Upskill youth** in the State through targeted awareness campaigns about high paying global jobs
- **Offer overseas fellowship programme** to eligible youth passing out from skilling institutions including ITIs, Polytechnics, engineering and professional colleges and technical universities, to pursue higher education from foreign institutions of repute
- **Provide one-stop access** to interested candidates with details of certified training programmes, job listings, interview preparation resources, agency reviews and help desks
- **Create a single window for partner recruitment agencies** for skill profiling of candidates, certifications of required courses for geographies

3.4 Build an aspirational skilling pathway in schools and higher education institutes

3.4.1. Making skilling aspirational for school students

- **Provide early exposure to various sectors** through introductory courses, industry visits in primary and secondary schools, etc.
- **Counsel and guide the students** on various career pathways and Government programmes available
- **Engage school students in ITIs and Polytechnics** through summer camps, exposure visits and internships

3.4.2. Skilling pathway for higher education institutions

- **Offer skill-based certificate courses** with credits for 21st century skills and technical skills
- Ensure delivery of digital, professional and soft skill courses to **develop industry-ready workforce**

3.5 Ensure life-long learning and skill enhancement for workers

With rapid advances to technology adoption across sectors, Odisha will seek to ensure citizens currently in the workforce have an opportunity to reskill and upskill themselves. For this, the State will launch a **comprehensive learning programme in offline and online mode to**:

- **Provide targeted incentives to employers** for undertaking upskilling programmes of current employees
- **Expand 'Digital skilling' initiatives** in partnership with eminent national and international universities, and edtech companies with subsidised access to courses focused on digital skills (AI/ML, analytics), emerging topics (electric vehicles, sustainable textiles), as well as professional and social skills
- **Launch new programmes** in select ITIs, Polytechnics in evenings and weekends for upskilling of working professionals
- **Expand the 'Nano-unicorn programme'** to encourage entrepreneurship

3.6 Promote inclusive skilling practices to create a fair and diverse workforce

3.6.1. Create **adequate residential facilities for students** in ITIs and Polytechnics with an emphasis on improving the female enrolment and retention ratios

3.6.2. Undertake **special projects for disadvantaged groups** like Persons with Disabilities (PwD), Particularly Vulnerable Tribal Groups (PVTG), students in childcare institutions, jail inmates, and Swadhar Gruha, etc.

3.6.3. **Expand access to skilling programmes** in predominantly tribal blocks and districts in a mission-mode, through public-private partnership mode and corporate social responsibility (CSR) funding support

3.6.4. **Implement gender-sensitive and PwD-sensitive curricula**, pedagogy, and teacher training in all ITI and Polytechnic institutions; introduce courses in Odia for better inclusiveness

3.7 Establish a unified strategy for the gig economy in Odisha

3.7.1. **Partner with fintech companies** to develop tailored financial products and services that address the specific needs of gig workers, with a special focus on enhancing access to formal credit for women and Persons with Disabilities (PwD)

3.7.2. **Launch a 'Platform Odisha' initiative** to accelerate platform-based economic growth, focusing on simplification, handholding, funding, skill development, and social financial inclusion, building on the success of initiatives like Start-up India

3.7.3. **Collaborate with global gig platforms** to create remote and digital job opportunities for skilled workers in areas such as IT support, customer service, and emerging technologies

3.7.4. **Launch flexible, short-term skill development programmes**, tailored to the needs of gig workers, such as professional training, business skills, collective entrepreneurship, and personality development

3.7.5. **Actively encourage and enable women to participate in diverse gig work opportunities**, including roles in driving and delivery services, breaking traditional barriers and expanding their presence beyond the beauty and wellness sector

CHAPTER 17

LOGISTICS, INFRASTRUCTURE AND CONNECTIVITY: ENABLING SEAMLESS, REGIONAL INTEGRATION

Summary

Odisha's aspiration to become a USD 1.5 trillion economy is a strategic Vision aimed at transforming the State's socio-economic landscape, enhancing prosperity, and positioning it as a key player in the national and global economic arenas. **The State's robust infrastructure, including the 5th largest road network in India with 130,000 kilometers, a 3,000-kilometer rail network (0.04 km per sq km, in line with the national average), three seaports, five airports, and six national waterways, forms the backbone of its economic growth**.

However, to achieve this ambitious economic target, Odisha must significantly improve its infrastructure and logistical efficiency to ensure the smooth movement of goods and people. This will help to drive scalable infrastructure towards Viksit Odisha. Recognising this, the State plans to invest in modernising road and rail networks, expanding port capacities, and enhancing airport facilities. Additionally, leveraging technology for smarter logistics solutions and fostering public-private partnerships will drive further growth.

Odisha envisions building a multi-modal, citizen-centric, and green transport infrastructure that supports a fast-growing economy and promotes sustainable development.

By 2047, the State envisions the following outcomes

- Handle 33% of India's total port cargo (from 13% currently)
- Increase the share of rail, aviation, ports and waterways in intra- and inter-State freight movement to 55% (from less than 10% currently)
- Achieve near 80% electric vehicle (EV) / Alternate Fuel Vehicles sales penetration in road transport (currently around 7% of new sales)

Key initiatives to achieve the outcomes

Ensure 100% public transport connectivity with high-quality service and safety standards

- Aim to modernise around 75,000 km of road network by 2030 including over 30,000 km of rural roads
- Plan and implement regional metro connectivity in city agglomerations, like developing the Regional Rapid Transit System (RRTS) in the Bhubaneswar-Cuttack-Puri-Paradip quad-city

Develop eight new non-major ports / jetties and related infra to handle 500 MMTPA of cargo.by 2047 to provide superior passenger amenities and promote tourism

- Identify strategic locations for eight new ports for development and optimisation of cargo handling infrastructure
- Invest in state-of-the-art port infrastructure and leverage technology to enable data-driven insights, foster cross-disciplinary collaboration, support seamless data exchange and analysis, and enhance overall operational efficiency.

Develop six National Waterways (NW) to promote inland water transport

- Develop NW-5 and NW-64 by providing fiscal incentives to developers, consignees and end-users
- Launch strategic initiatives to unlock full potential of inland waterways enabled by state-of-the-art technology for safe and efficient transportation

Enable port-led development by way of Maritime Coastal Regional Plans (MCRP) for Coastal Economic Zones (CEZ) – aiming to handle one-third of India's cargo by 2047

Enhance airport capacity and frequency of flights to achieve annual volumes of over 500k passengers per million population

- Develop at least five new airports under the 'Ude Desh ka Aam Naagrik (UDAN)' scheme by 2036, including one international airport, potentially in Puri
- Upgrade existing airports by enhancing terminal facilities, expanding runways, and incorporating advanced technologies to improve passenger experience and operational efficiency

Enhance multi-modal connectivity and establish eight multi-modal logistics parks (MMLP)

Develop allied industries which leverage and enhance the transport infrastructure

- Create an INR 5 lakh crore shipbuilding and repair industry by 2047

- Establish at least one world-class Maintenance, Repair, and Overhaul (MRO) facility for the aviation sector in Odisha by 2036, with potential locations including Puri Aerotropolis, Bhubaneswar, and other key airports across the State.

Promote the development of integrated shipbuilding and ship repair facilities by:

- Identifying and designating strategic coastal and inland locations
- Extending targeted incentives and policy support through the Industrial Policy Resolution (IPR)

Enable the growth of aviation auxiliary projects to strengthen regional air connectivity and innovation by:

- Encouraging the promotion and operationalisation of seaplane services
- Facilitating the development of heliports across strategic urban and remote areas
- Supporting the establishment of aero-sports, along with drone training and testing infrastructure

Facilitate gradual decarbonisation of all transport systems aiming for near 100% clean or low-carbon road transport

- Promote the use of electric and alternate fuel vehicles through incentives and infrastructure development, reaching 80% penetration in registration by 2047
- Implement policies to reduce emissions and encourage sustainable transport practices

Increase private sector share in road, aviation and ports infrastructure financing aiming to achieve 50% share by 2036

Invest in skilling and capability building for growth of the sector

- Establish a dedicated Department of Maritime Studies in one of the State universities and operationalise the Aviation Centre in Dhenkanal by 2030, to strengthen Odisha's capabilities in the maritime and aviation sectors.
- Collaborate with academic institutions to foster research and innovation in transport

Establish an Empowered Group of Secretaries (EGoS) to design and implement the State's multi-modal transport strategy

Over the next 24 months, the State will

- Conduct a detailed Origin-Destination (OD) study to quantify intra - and inter - State movement of goods and people
- Initiate development of Subarnarekha and Astaranga ports
- Complete all roads under Pradhan Mantri Gram Sadak Yojana (PMGSY)-III and modernise at least 15,000 km of road network
- Commence direct flights to 10 new domestic and three new international destinations
- Expedite development of the second international airport in the State
- Launch the Aviation Centre at Dhenkanal
- Facilitate 20% annual electric vehicle (EV) / Alternate Fuel Vehicles registrations across all vehicles

Odisha's transport sector goals align with national objectives by emphasising sustainable development and infrastructure improvements crucial for economic growth and social inclusion. The State aims to ensure access to safe, affordable, and sustainable transport systems, particularly for vulnerable populations, aligning with SDG 11.2 and 11.3. By fostering cross-industry collaboration and leveraging green capital, Odisha seeks commitments towards sustainable development. Key initiatives include expanding and modernising all modes of transportation networks while integrating advanced technologies like artificial intelligence (AI) and geospatial analytics. Promoting public transport, walking, and cycling will reduce commute times by 20-30%, and minimise air pollution and traffic-related accidents. This approach positions Odisha to lead in sustainable transport, fostering economic growth, improving quality of life, and facilitating the achievement of USD 1.5 trillion economy target by 2047.

1. Context

A strong infrastructure in logistics and connectivity is crucial for Odisha's economic growth, particularly in its mining, manufacturing, tourism, services, and urban infrastructure sectors. Efficient logistics and transportation networks facilitate the smooth movement of goods and services, enhance trade integration, and attract business investments. This infrastructure further supports the workforce by providing essential services and amenities such as transportation infrastructure and access to broadband, healthcare, childcare, and arts and culture. Recognising this, Odisha has developed an expansive transport infrastructure, as shown below:

EXHIBIT 17.1

Transport network scale

1.3 lakh km
road length
5th largest in India

3k km
railway route
98.3% electrified

3
ports
One major port at Paradip and two non-major ports

5
airports
One international and four domestic airports

6
National waterways
Currently two under development

Transport network density

6.6 km
road network per thousand population against national average of 4.6

0.04 km
railway density per square km against national average of 0.04

86k
air passengers per million population (FY23) against 240k for India

Achievers
category in LEADS[1] 2024 ranking
Moved up in ranking from Aspirers category in 2023

Investment planned

INR
15,865 Cr.
investment budget for FY25 across roads, bridges, and airports, etc.

Key projects

- All Gram Panchayats connected with integrated public transport by FY26 under the Mukhyamantri Bus Seva (MBS) scheme – ~INR 3k cr. investment approved
- 'Atal Bus Stand' scheme to enhance public transport infrastructure (~INR 6k cr.)
- Aviation centre for skilling pilots to be set up at Dhenkanal district with investment of INR 562 cr.

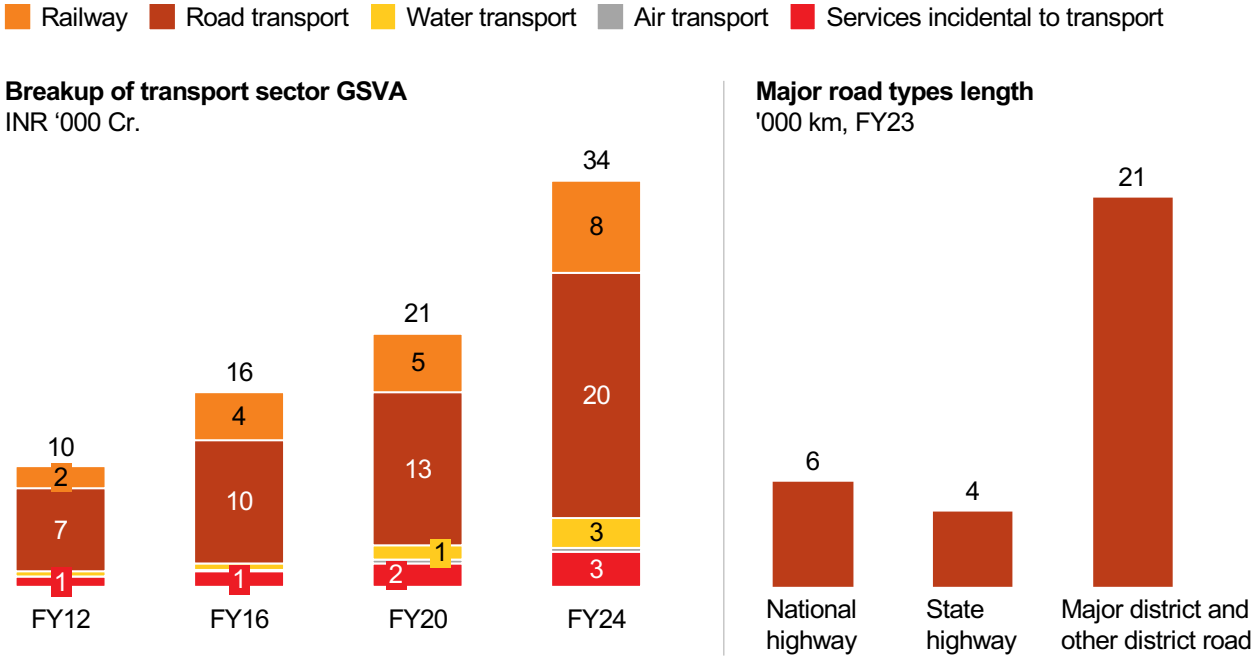
[1] Logistics Ease Across Different States (LEADS) is a score published by Ministry of Commerce and Industries to indicate the infrastructure connectivity strength of the State. The States are ranked in three categories: First – Achiever, Second – Fast mover, and Third - Aspirer

Source: Odisha Economic Survey, Airports Authority of India, Government of India

1.1 Road infrastructure

Road transport is the predominant means of transportation constituting 60% of the transport sector's GSVA, as shown below:

EXHIBIT 17.2



Key features of Odisha's road infrastructure are as follows:

- **Roads play predominant role for people and goods movement** in Odisha due to sub-optimal rail infrastructure, contributing to 60% to total transport GSVA of the State
- **Currently, there are 49 ongoing projects** by the National Highways Authority of India (NHAI), covering 1,204 km, out of which 771 km is completed
- **The State operated public transport system consists of bus service via two agencies**:
  - Odisha State Road Transport Corporation (OSRTC) operates a fleet of over 2,100 buses, including 1422 buses under the PPP model. The corporation serves about 1,592 intra-State routes and 45 inter-state routes
  - Capital Region Urban Transport (CRUT) operates the 'Mo Bus' service covering Bhubaneswar, Cuttack, and Puri, with a fleet of over 300 buses, while also providing last-mile connectivity through Mo E-Ride. The service has been expanded to other cities such as Rourkela, Sambalpur, and beyond
- **Odisha's (EV) / alternate fuel vehicles (EV policy)** aims to achieve 20% (EV) / alternate fuel vehicles registrations across all vehicles by 2025 with incentives such as 100% road tax and registration fee exemption. The State disbursed INR 74 crore EV purchase subsidy in FY24

- **Road accidents remain a key challenge** with over 11,000 accidents in 2023, claiming more than 5,500 lives. This is despite undertaking multiple initiatives to minimise accidents and fatalities, such as the implementation of Automated Driving Testing System (ADTS), Construction of truck terminals, Training at the four Institute of Driving Training and Research (IDTR), Project Rakshak and Junior Rakshak (by inducting NCC cadets), etc.
- **Economic corridors in the State** such as the Western Expressway integrates under-developed parts in Western Odisha. The State is planning to set up the Odisha Economic Corridor, an extension of the Vishakhapatnam – Chennai Industrial Corridor (VKIC), along Eastern Odisha

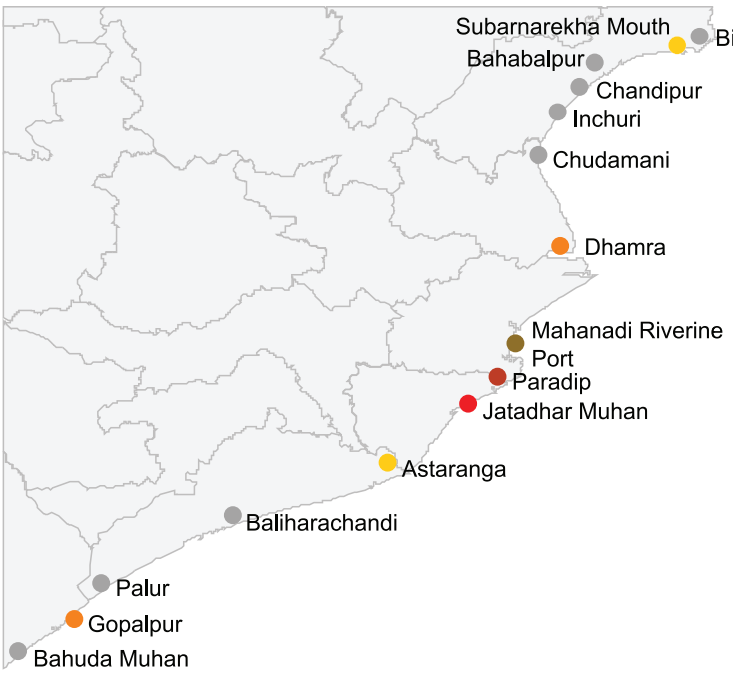
1.2 Port-led development

Odisha is endowed with a massive coastline of 575 km, making it a strategic location for port-led development. It already has three ports with two additional in construction, as shown below:

EXHIBIT 17.3

- Major port (at Paradip)
- Non-major port (operational)
- Non-major port (under development
- Riverine Port (discussion stage)
- Captive jetty (under development)
- Notified port locations

Port locations in Odisha



Key highlights

Name	Type	Capacity, MMTPA
Operational ports		
Dhamra	Non-major	60
Gopalpur	Non-major	20
Paradip	Major	289
Ports under development		
Subarnarekha	Non-major	25 to 55
Astaranga	Non-major	18 to 71

Key features of Odisha's ports infrastructure are as follows:

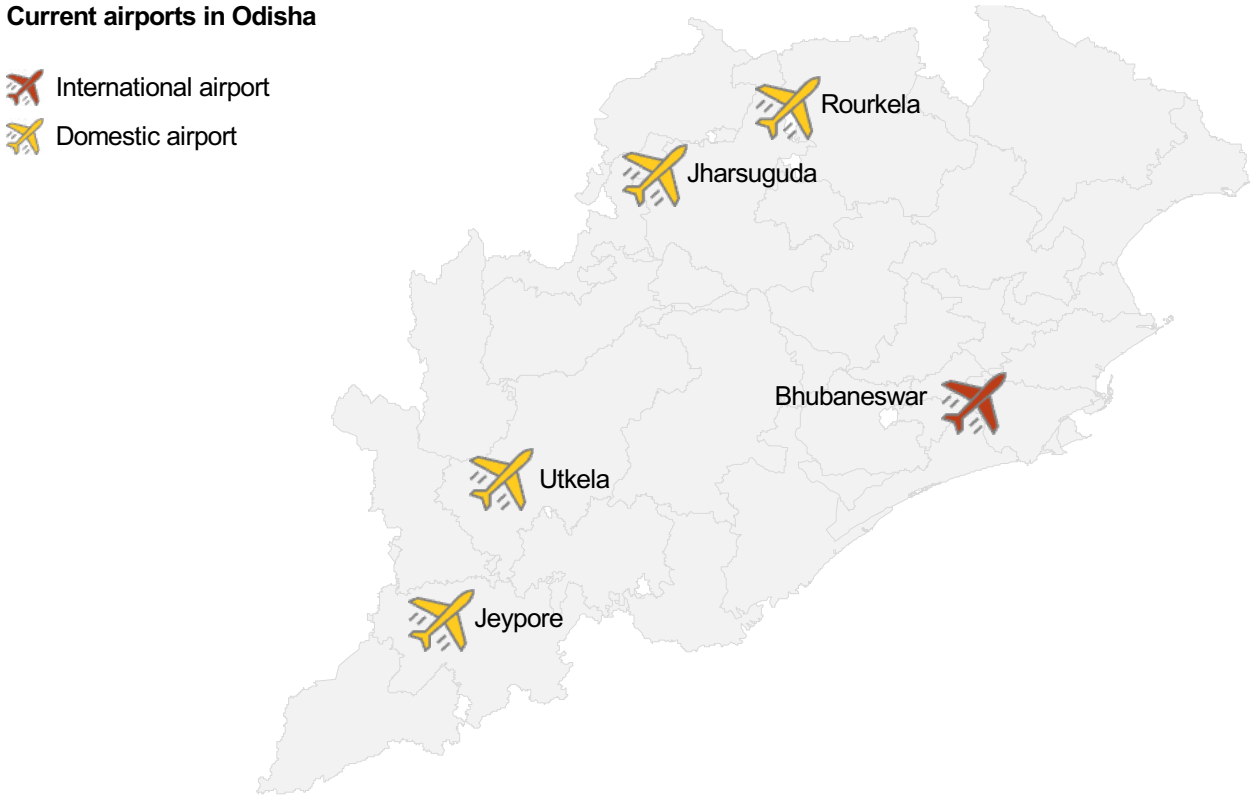
- **Odisha has one major port at Paradip and 14 non-major port sites** of which two (Dhamra and Gopalpur) are operational
- **Port capacity expansion is a key priority** for the State. In the light of this, Odisha Maritime Board (OMB) was established in 2022
- **Paradip is the largest dry bulk handling port in India**. It handled 145 MMTPA of cargo (16% of India's total) in FY24
- **64% of Odisha's waterways are navigable**
  - The State has six out of 111 National Waterways (NWs) in India
  - None of the six NWs is currently operational in the State: Two NWs (5 and 64) are currently under development
- **The Crew Training Institute in Bhadrak**, the first of its kind on India's East coast, provides specialised training in Inland Water Transport, while the **Odisha Maritime Academy in Paradip** offers comprehensive maritime education and training programmes for D.G. shipping approved courses

1.3 Air travel in Odisha

Odisha has five operating civilian airports currently, as shown below:

EXHIBIT 17.4

Current airports in Odisha



The State plans to significantly enhance its international and domestic connectivity. Key features of Odisha's aviation infrastructure are as follows:

- **Odisha has 19 airports or airstrips of which 12 are State-owned**. Currently five civilian airports are operational – Bhubaneswar, Jharsuguda, Jeypore, Utkela and Rourkela
- **Bhubaneswar is currently the only international airport** in the State, providing connectivity to Dubai, Singapore, and Bangkok
- **The 'New Destination Policy 2024'** aims to boost Odisha's domestic and international air connectivity by providing Viability Gap Funding (VGF) for Indian airlines. As the first State in India to offer such support for direct international flights, Odisha has successfully attracted several airlines to launch new domestic and international routes, significantly enhancing its accessibility and connectivity

Source: Commerce & Transport Department, Government of Odisha, Airports Authority of India

- **International cargo operation** from the Bhubaneswar Airport was started in 2024
- **The State plans to build an international airport near Puri** with an aerotropolis and ancillary facilities such as air cargo, Maintenance, Repair and Overhaul (MRO) and private aircraft infrastructure operated by Fixed-Base Operators (FBO) MRO (detailed in the chapter on Urban)
- **An airline pilot training facility** is being established at Dhenkanal with an investment outlay of INR 562 crore
- Develop a **greenfield airport at Paradip** to supplement and strengthen multimodal logistics operations in the region

1.4 Key challenges

Despite significant progress, the State faces the following key challenges in expanding its transport sector:

EXHIBIT 17.5

- **Limited air traffic connectivity**: The region suffers from low intra- and inter-State flight connectivity, with only 86,000 air passengers per million people compared to the national average of 240,000, impacting tourism and mobility
- **Low female labour force participation**: For example, only 21% of bus drivers are female. Increasing the proportion of women across various transport modes could also enhance the safety of female passengers
- **Poor financial conditions for gig workers**: These workers face low job security, inadequate wages, and limited access to life insurance
- **High incidence of road accidents**: In 2023, there were over 11,000 road accidents resulting in more than 5,500 fatalities. Key driving factors leading to this include poor road conditions, lack of discipline, and drunk driving
- **Slow progress in developing integrated multi-modal logistics parks**: The absence of multi-modal logistics facilities negatively affects several industries, such as mining, agriculture, and e-commerce
- **Inadequate port and jetty infrastructure**: Slow development of jetties hampers the growth of port-led commerce
- **Sub-optimal railway network**: While the railway density of 0.04 km per square km is at par with the national average, the limited network affects both passenger and commodity movement, particularly in the mining sector

1.5 Key trends

The following emerging trends in transport and logistics highlight a stronger focus on green transport, logistics parks and airline connectivity as shown below:

EXHIBIT 17.6

Growing penetration of electric vehicles (EV) / alternate fuel vehicles: Over 60% of two-, 85% of three- and 15% of four-wheelers sold in 2030 in India are expected to be electric or alternate fuel vehicles vehicles[3]

Inland waterways are gaining traction, primarily for transporting commodities, providing last-mile connectivity and integrating with tourist activities like river cruises

Expansion of air connectivity: Direct connectivity to international destinations is being facilitated through State VGF[1] support and intra-State connectivity to Tier-II/ III cities through Central and State schemes

Increasing trend of multi-modal logistics park globally, especially with growing trade and e-commerce. Need to align with the National Master Plan for multi-modal connectivity (PM Gati Shakti)

Increasing focus on green fuels to decarbonise aviation and shipping sector: Sustainable Aviation Fuel (SAF) and clean-fuel mandates for airlines, along with low-carbon fuel (LNG[2], e-methanol, green ammonia) targets for shipping industry in several regions

[1] Viability gap funding
[2] Liquified natural gas
[3] Accelerating Transport Electrification in India by 2030, Report by Climate Trends and JMK Research

Some of the interesting case examples that Odisha can learn from are shown below:

EXHIBIT 17.7

Country	Transport segment	Description	Impact
Singapore	Public transport	**Singapore's Intelligent Transport System (ITS)** leverages sensors, digital and analytics to reduce traffic congestion, improve public transport efficiency and enhance overall commuter experience	**15%** reduction in peak hour traffic **20%** rise in public transport ridership **92%** buses and trains arrive within five mins of scheduled times
India	Inter-city railway network	**The Regional Rapid Transit System (RRTS)** in the National Capital Region (NCR) is an SPV[1] between multiple State and Central Governments, enabling seamless inter-city connection through semi high-speed rail network and state-of-the-art infrastructure	**50%** reduction in the travel time between Delhi-Meerut **30%** reduction in the travel time on major routes connecting Delhi **Enhanced daily commute experience** and economic benefits for several residents
UAE	Airports	**Dubai Airport** is an international hub for air transport. Its success highlights the importance of airline partnerships, world-class infrastructure and a strong focus on customer experience	**Number 1 airport globally** in passenger traffic since 2014 **Around 240 destinations** connected **Significant revenue** from duty-free shopping at the airport
UAE	Port-led economy	**Jebel Ali Free Zone (JAFZA)** in Dubai is well connected to the seaport and airport, allowing 100% foreign ownership, zero import or export duties, no restrictions on capital repatriation, and long-term tax exemptions, etc.	**Around 24%** share in Dubai's total foreign direct investment (FDI) **More than 11,000** companies operate from JAFZA **Over 130,000** employment generated
Saudi Arabia	Logistics park	**Maersk's Logistics Park at Jeddah Islamic Port** has set up Saudi Arabia as a pivotal logistics hub in the Middle East region. The 225,000 sq m park is strategically located near red sea with 140,000 indoor pallet capacity	**15%** reduction in logistics cost **25%** reduction in average dwell time **20%** growth in port handling capacity

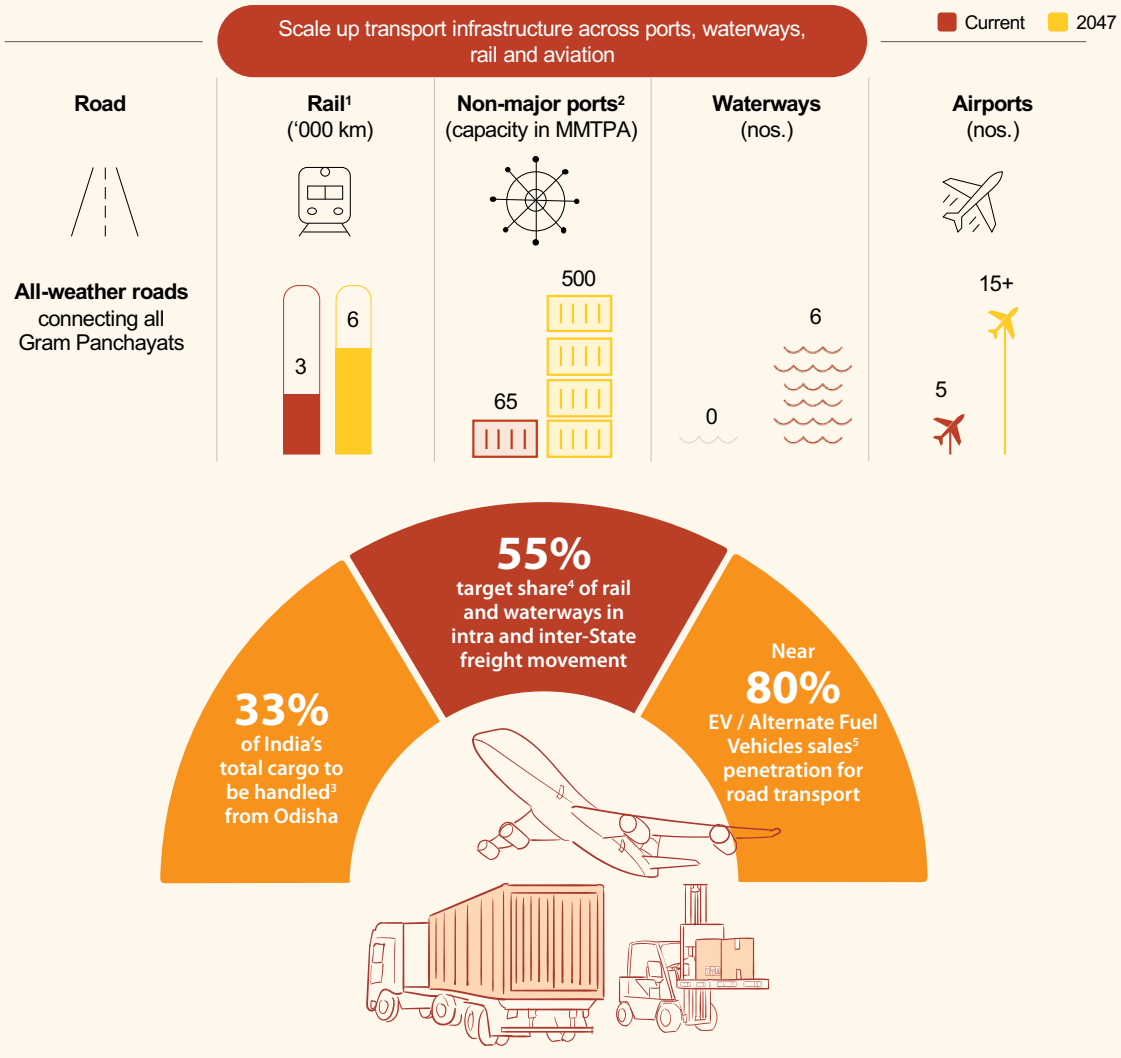
2. Vision and outcomes

Odisha aims to revolutionise its transportation sector by developing a multi-modal, citizen-centric, and environmentally sustainable infrastructure. This Vision supports the State's fast-growing economy while promoting long-term sustainable development and enhancing the quality of life for its residents.

EXHIBIT 17.8

VISION 2047

Odisha envisions building a multi-modal, citizen-centric, and green transport infrastructure that supports a fast-growing economy and promotes sustainable development



[1] Including metro and Regional Rapid Transport System (RRTS)
[2] Handling capacity
[3] Includes cargo handled by both major and non-major ports
[4] Currently less than 10%
[5] For trucks, also includes Hydrogen and LNG trucks

2.1 Key outcomes

To achieve this Vision, the State will track the following key outcomes:

EXHIBIT 17.9

Key outcomes	Unit	Current	2029	2036	2047
Ports, waterways and airports					
Handling capacity of non-major ports	MMTPA	80	100	200	500
Share of India's cargo handled by non-major ports	%	7	15	25	33
Operable National waterways	Number	-	2	4	6
Non-major ports with green hydrogen or ammonia hub	Number	-	1	2	4
River vessels operating on green and low carbon fuels	%	-	40	75	100
Cruise tourism (No. of river cruises)	Number	0	5	10	20
Cruise tourism (No. of cruises terminals)	Number	0	1	2	4
Civilian airports	Number	5	6	9	15+
Logistics					
Total modal freight share for rail and water	%	10	18	30	55
Average freight truck speed	kmph	33	40	60	80
Share of infrastructure funding from corporate sector	%	-	30	50	70
Multi-modal logistics parks	Number	-	2	4	8
Road freight cost (real terms)	INR per tonne-km	4	3	2	1.5
Decarbonisation, women participation and safety					
Electric (EV) and alternate-fuel vehicle registration	%	7	50	70	80
E-buses penetration	%	30	40	50	100
Women labour force in OSRTC[6] buses	%	21	30	36	50
Road accident deaths	% reduction from current levels	-	50%	60%	80%

[6] Odisha State Road Transport Corporation

3. Key initiatives

The State will undertake the following strategic initiatives and enabling actions to achieve its Vision:

EXHIBIT 17.10

Initiatives and enablers to achieve vision and outcomes

Strategic initiatives across the transport modes

1 **Ensure 100% public transport connectivity** with high quality service and safety standards

2 **Develop eight new non-major ports / jetties and related infra** to handle 500 MMTPA of cargo.by 2047 to provide superior passenger amenities and promote tourism

3 **Develop six National Waterways** to promote inland water transport

4 **Facilitate port-led development** through creation of Coastal Economic Zones (CEZ)

5 **Enhance airport capacity and frequency of flights** to achieve annual volumes of 500k+ passengers per million population

6 **Enhance multi-modal connectivity** and establish eight multi-modal logistics parks (MMLP)

7 **Develop allied industries** which leverage and enhance the transport infrastructure

8 **Facilitate gradual decarbonisation** of all transport systems

Enablers

9 **Increase corporate share** in transport infrastructure financing

10 **Invest in skilling and capability building** with focus on women participation up to 30% for growth of the sector

11 **Set up an Empowered Group of Secretaries (EGoS)** to design and implement the State's multi-modal transport and freight strategy

12 Establish **truck terminals** at 20 locations across the length and breadth of the State to enhance logistics efficiency and provide convenience to operator

13 **Enhance women participation** by increasing access to employment, skill-building, entrepreneurship and supportive workplace policies

3.1. Ensure 100% public transport connectivity with high quality service and safety standards

3.1.1. Inter-city connectivity

- **Build future-ready urban mobility systems** that ensure accessible, efficient, and sustainable transportation for expanding city populations
- **Plan and develop a Regional Rapid Transit System (RRTS)** to connect the Bhubaneswar-Cuttack-Puri-Paradip quad-city area by 2030, facilitating faster and more efficient travel between these key cities
- **Plan and implement urban mobility projects to ensure connectivity in city agglomerations** like Bargarh-Jharsuguda-Sambalpur, Berhampur-Chhattrapur-Gopalpur, and Jeypore-Koraput-Sunabeda by 2047, in accordance with the masterplans of these regions

3.1.2. Road transport

- **Increase inter - and intra-city bus connectivity** by doubling the fleet sizes of Odisha State Road Transport Corporation (OSRTC) and Capital Region Urban Transport (CRUT) fleet by 2030
- **Ensure all-weather roads in all Gram Panchayats** for last-mile connectivity by 2036, starting with the completion of all road work under Pradhan Mantri Gram Sadak Yojana (PMGSY)-III by 2026
- **Aim to modernise around 75,000 km of road network** by 2030, including over 30,000 km of roads under the Rural Development Department.
- **Expedite the construction of rural bridges and introduce multipurpose bridge-cum-weir projects** to provide year-round connectivity while supporting water conservation and irrigation needs
- **Conduct periodic road audits** and establish dedicated maintenance funds to address infrastructure degradation and improve longevity
- **Implement intelligent traffic management systems** in major cities to reduce congestion and improve traffic flow

3.1.3. People-centricity

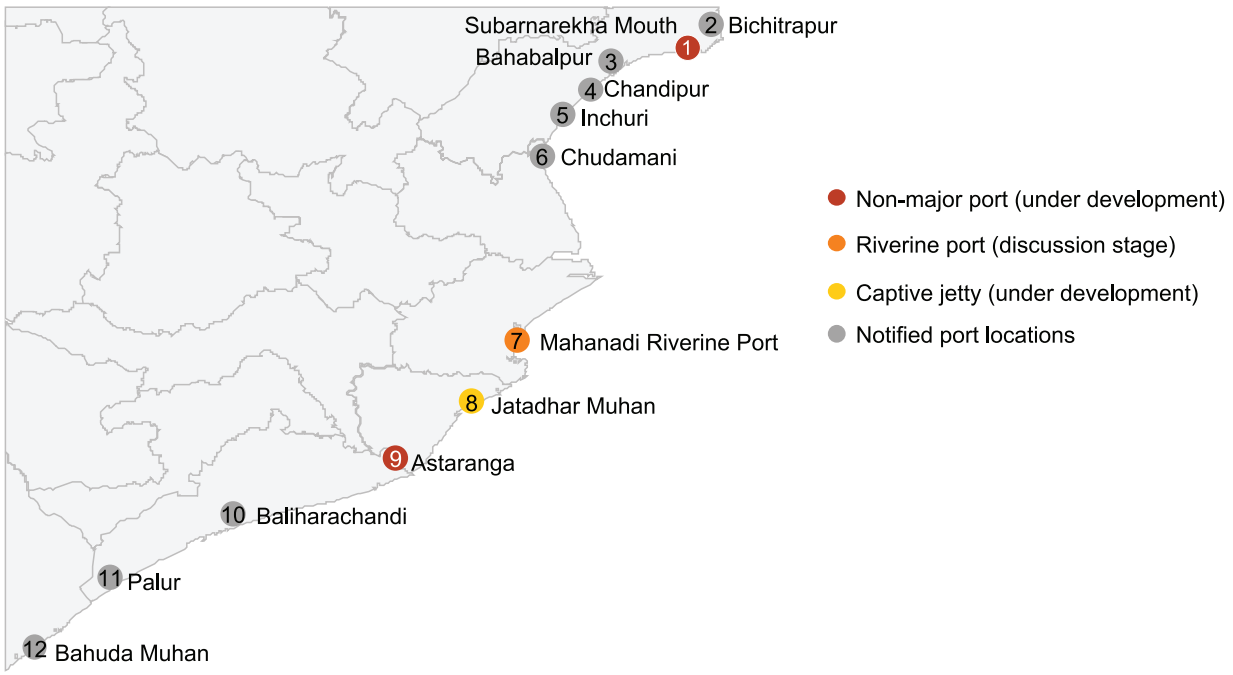
- **Establish a 'Single ticketing system (STS)'** for buses, metros, and taxis with subsidised fares for vulnerable and marginalised groups by 2030, making public transportation more accessible and affordable
- **Ensure all bus stations are tech-enabled** and have adequate public toilets, drinking water facilities, and other necessary amenities by 2030, enhancing the comfort and convenience for passengers
- **Enhance State and National Highways** with high-quality wayside amenities and terminals for passenger vehicles, buses, and trucks, providing better rest and service areas for travelers
- **Ensure strict enforcement of road safety standards** targeting zero casualties in road accidents, through rigorous monitoring and implementation of safety measures
- Work with key stakeholders like ARAI, SIAM[1] regarding **technology interventions to reduce road accidents** for passenger and freight vehicles, promoting safer and more efficient transportation systems

[1] ARAI: Automotive Research Association of India; SIAM: Society of Indian Automobile Manufacturers

3.2. Develop eight new non-major ports to handle 500 MMTPA cargo by 2047

The State has identified twelve port sites for the development of non-major ports under the public-partnership mode, as shown below:

EXHIBIT 17.11



1. **Subarnarekha Mouth:** Proximity to industrial hubs in Balasore and access to the Subarnarekha River for inland transport through NW-96
2. **Bichitrapur:** Strategic location near the Odisha-West Bengal border, facilitating trade between the two States
3. **Bahabalpur:** Rich fishing grounds and potential for seafood export due to its coastal location
4. **Chandipur:** Existing defense infrastructure and potential for dual-use port facilities
5. **Inchuri:** Close to mineral-rich regions, providing an export route for minerals and ores
6. **Chudamani:** Proximity to Bhadrak's industrial areas, supporting local economic growth
7. **Mahanadi Riverine Port:** Utilises the extensive river network for cost-effective inland water transport; natural break water for captive jetties and ship-building industries
8. **Jatadhar Muhan:** Near the Paradip industrial zone, offering additional capacity and reducing congestion at Paradip Port
9. **Astaranga:** Potential for tourism and fishing industry development due to its scenic coastal location
10. **Baliharachandi:** Close to Puri, supporting tourism and pilgrimage-related transport needs
11. **Palur:** Proximity to Gopalpur port and potential to handle overflow cargo, enhancing regional port capacity
12. **Bahuda Muhan:** Near the Andhra Pradesh border, facilitating cross-State trade and commerce

These ports will be established under the public-private partnership (PPP) model, aligning with the needs of local communities and industrial growth. The following key action points will guide this transformative initiative:

3.2.1. Strategic port development

- **Strengthening of Odisha Maritime Board**: The Board will be empowered to function as the single-window authority for the development of the maritime and inland waterways sectors, enabling faster decision-making and integrated planning
- **Identification of locations**: By 2026, the State will identify suitable locations for the development of eight new ports, carefully chosen to maximise accessibility and economic potential
- **Corporate investment**: These identified sites will be offered for phased commercial development through public-private partnerships (PPP) by 2036, ensuring sustainable and inclusive growth
- **Integrated connectivity**: Multi-modal connectivity linking ports to the hinterland, industrial zones, mines, and inland waterways will be prioritised to strengthen logistics infrastructure and optimise supply chains

3.2.2. Special Purpose Vehicle (SPV) for port operations

- An SPV will be established to oversee the development and operation of these ports, with anchor investors and user industries serving as equity partners
- The SPV will facilitate land acquisition for port backup areas and regulate tariffs for all port services through a dedicated regulatory body to be established by 2036

3.2.3. Infrastructure integration

- **Captive jetties**: The State will provide industries with captive jetties where necessary, in consultation with Industrial Promotion and Investment Corporation of Odisha Limited (IPICOL)
- **Seamless connectivity**: Rail and road connectivity from jetties to the hinterland will be developed by private concessionaires in collaboration with the Central Government entities such as defence, railways, and National Highways Authority of India (NHAI)

3.2.4. Institutional strengthening

- The Department will be empowered with the necessary authority to efficiently implement projects while upholding transparency and public accountability
- Dedicated teams will focus on innovation, public engagement, and ensuring that port development delivers tangible community benefits

3.2.5. Capacity building and youth empowerment

- Training programmes will be launched to equip the State's youth with skills for maritime and port-

based careers, fostering local employment opportunities

- A specialised cadre of officials will be developed to lead and manage these projects effectively
- Partnerships with educational institutions will ensure the next generation is prepared to lead the maritime sector

3.2.6. Sustainable and green port development

- Every new port will prioritise eco-friendly practices and renewable energy, contributing to a cleaner and greener State
- Projects will be designed to respect the natural heritage of the region, ensuring harmony between development and environmental sustainability

3.2.7. Digital and technological transformation

- Cutting-edge technology will be integrated into port operations to enhance efficiency, transparency, and service delivery
- Digital systems will allow citizens to easily access information about port operations and ongoing development initiatives

3.2.8. International collaboration and global leadership

- The Department will engage with international partners to bring global best practices in maritime development to the State
- The State will be positioned as a hub for sustainable and inclusive maritime development, attracting international recognition and investments while ensuring local employment and economic upliftment

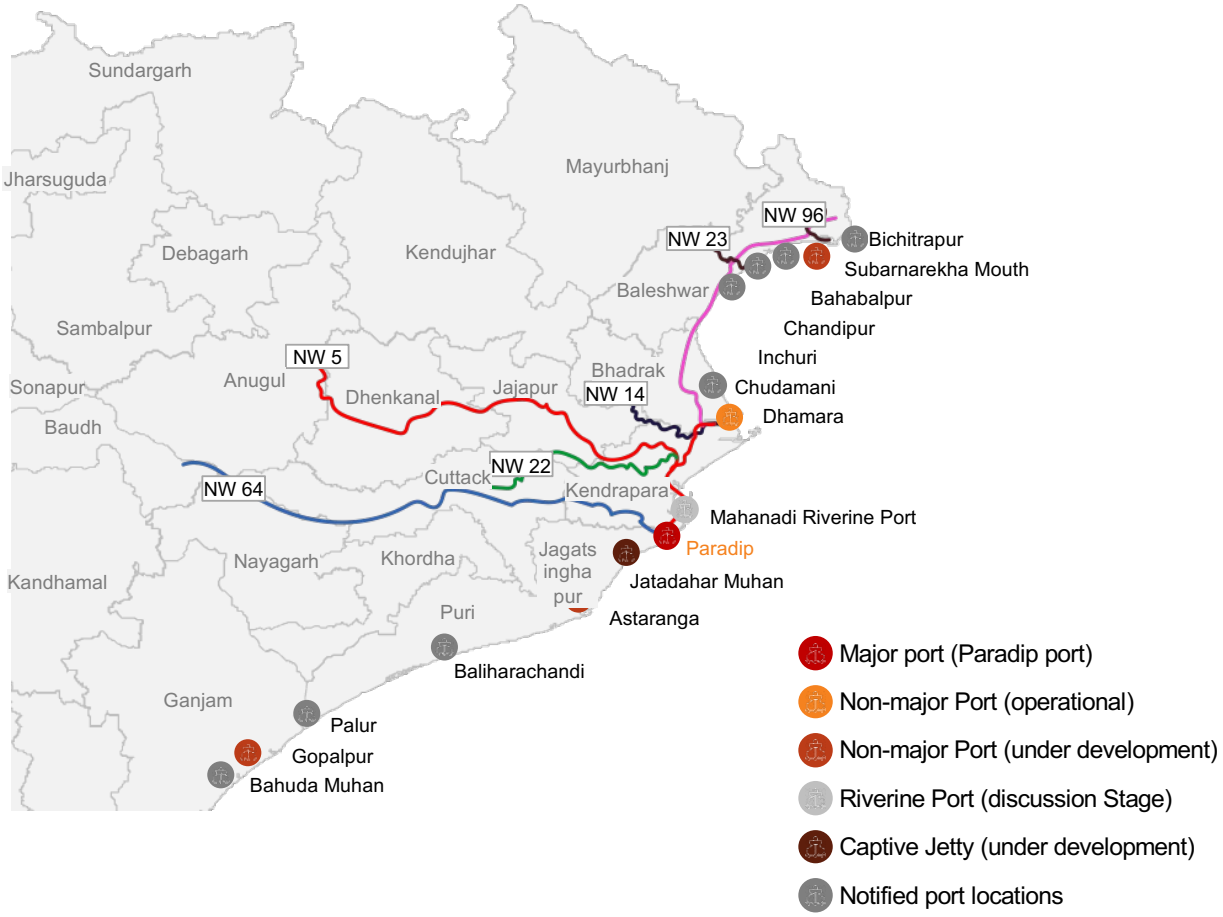
3.2.9. Performance monitoring and standardisation

- Tools and mechanisms will be developed to monitor the performance of all maritime projects, ensuring transparency and accountability to the people
- Port operations will be standardised across all facilities, delivering world-class services and consistent quality

3.3 Develop six National Waterways to promote inland water transport

Around 64% of Odisha's water bodies are navigable - these can be leveraged for inland Water Transport (IWT) development, reducing logistics costs and decongesting the roads. Six National Waterways (NW) pass through the State – NW 5, 14, 22, 23, 64 and 96, as shown below:

EXHIBIT 17.12



To unlock the immense potential of inland waterways as a safe, sustainable, and efficient mode of transport, the State will take the following targeted measures:

3.3.1. Fiscal incentives to encourage development

- Provide fiscal incentives for developers, consignees, and end-users to accelerate the development of National Waterways 5 (NW-5) and 64 (NW-64) by 2030
    - These incentives may include subsidies on capital investments for developing inland Water Transport (IWT) facilities, reduced tariffs for waterway usage, and tax exemptions for entities contributing to infrastructure development or utilising IWT for cargo movement
- Extend specific benefits to small-scale industries and marginalised groups to encourage inclusive participation in waterway-based logistics

3.3.2. Strategic technological initiatives

The State will implement state-of-the-art technologies to ensure safe and efficient operation of inland waterways, focusing on:

- Modern navigational aids, such as GPS-based tracking systems, real-time route optimisation, and radar-assisted navigation
- Digitisation of waterway management to provide live updates on traffic, weather, and cargo status, enabling smooth coordination between stakeholders
- Safety systems such as real-time monitoring of vessels, emergency response mechanisms, and eco-friendly propulsion technologies for reducing emissions

3.3.3. Engagement with investors and infrastructure development

- Initiate a proactive investor outreach programme to attract private investment in IWT infrastructure and fleet expansion
- Key areas for development may include:
    - Construction of modern terminals equipped with loading and unloading facilities to handle diverse cargo types, including bulk and containerised goods
    - Development and maintenance of fairways to ensure year-round navigability of NW-5 and NW-64
    - Installation of navigational aids, including buoys, signage, and communication systems to enhance operational safety and efficiency
- Prioritise public-private partnerships (PPPs) to leverage private sector expertise and resources, while ensuring public welfare

3.3.4. Awareness and promotional activities

- Comprehensive awareness campaigns will be undertaken to promote the benefits of IWT and encourage its adoption among shippers and transporters
  - Outreach programmes will focus on highlighting the cost-effectiveness, fuel efficiency, and reduced environmental impact of waterway transport compared to other modes
  - Demonstration projects and pilot initiatives will be showcased to instil confidence in stakeholders regarding the viability of IWT for large-scale logistics
- Collaboration with industries, trade associations, and local communities will ensure that the shift to IWT aligns with their needs and aspirations

3.3.5. Capacity building and skilling

- Training programmes will be established to build a skilled workforce capable of operating and maintaining waterway infrastructure and fleets
- Partnerships with maritime academies and technical institutions will be fostered to develop specialised training modules on waterway management, vessel operation, and logistics planning
- Dedicated capacity-building initiatives will ensure that local youth, especially from marginalised communities, can access employment opportunities in the inland waterway sector

3.3.6. Integrated planning with other modes of transport

- Inland waterway development will be integrated with rail and road networks to establish multi-modal transport corridors, ensuring seamless connectivity from ports to the hinterland
- Coordination with central ministries and neighbouring States will be undertaken to align waterway development with national and regional logistics strategies

3.3.7. Sustainability and eco-friendly operations

- Inland waterway transport will be developed with a strong focus on environmental sustainability by:
  - Promoting the use of green technologies such as electric and hybrid propulsion systems for vessels
  - Ensuring minimal ecological disruption during the construction and operation of terminals and other infrastructure
  - Undertaking regular water quality monitoring and restoration activities to maintain the ecological health of NW-5 and NW-64

3.4 Facilitate port-led industrial development to handle one-third of India's cargo by 2047

The State will focus on port-led industrialisation to enable the development of State's coastal districts, reduce logistics costs and cargo movement time. To achieve this, the State will:

- **Develop integrated Maritime Coastal Regional Plans (MCRP)** for promotion of Coastal Economic Zones (CEZ)
- **Ramp-up the national share of containerised cargo-handling capacity in the State,** from around 0.1% currently, with the help of the Union Ministry of Ports, Shipping and Waterways
- **Enhance ease-of-doing-business** by way of digital processes, minimal paperwork, single-window-clearances and a robust grievance-redressal mechanism in the CEZs
- **Incentivise private players** to develop ancillary infrastructure and services around the port
- **Provide tech-enabled facilities** like immigration, shipping permits, overseas remittances and legal services in the CEZs in coordination with Central and State Government entities
- **Develop fishing harbours and aqua-products processing centres** in the CEZs, in coordination with the Department of Fisheries
- **Promote coastal and riverine cruise and adventure tourism,** by working closely with the Department of Tourism

3.5 Enhance airport capacity and frequency of flights to achieve annual volumes of 500k+ passengers per million population

To enhance air connectivity, the State will establish at least 15 airports with extensive domestic and international connectivity by 2047, as outlined below:

EXHIBIT 17.13

Non-civilian airports and planned airport sites

1. **Bhubaneswar**: In the capital city, serving as Odisha's primary aviation hub, it facilitates domestic and international connectivity, bolstering tourism, trade, and regional development
2. **Jharsuguda:** Serving as the aviation hub of western Odisha, facilitating regional connectivity and economic growth
3. **Rourkela**: Known as Odisha's steel city, strengthening connectivity to a major industrial and educational hub in the northwestern region
4. **Jeypore:** Located in Koraput district, providing connectivity to the hilly, tribal-dominated southern Odisha, supporting regional development and tourism
5. **Utkela:** Improving accessibility to Odisha's hinterlands, aiding in the delivery of services and boosting commerce in remote areas
6. **Birasal:** Near Dhenkanal, to emerge as aviation sector skilling hub
7. **Tusra:** Located in Balangir district, boosting regional connectivity and development
8. **Jamadarpali:** Near Sambalpur, improving access to western Odisha and supporting regional development
9. **Gotma:** Near Nuapada, improving accessibility and supporting local economic activities
10. **Sativata:** Located in Bargarh district enhancing connectivity for the western Odisha region
11. **Gudari:** Located in Kandhamal the facility aims to enhance local air connectivity and improve regional accessibility
12. **Dandbose:** Proximity to the industrial town of Jamshedpur, supporting regional economic activities
13. **Rangeilunda:** Near Berhampur, enhancing connectivity for southern Odisha and supporting regional commerce
14. **Raisuan:** Located in Keonjhar district, improves accessibility to mineral-rich areas
15. **Barbil:** Enchancing regional air connectivity in Odisha's mineral-reach Keonjhar district
16. **Rasgobindpur (Amarda road):** Located in Mayurbhanj district, enhancing connectivity for tourism and local commerce
17. **Malkangiri:** Remote location, improving accessibility and development in tribal areas

The State aims to build a world-class aviation network to support economic growth, tourism, and connectivity. With Bhubaneswar airport projected to reach capacity by 2030, the government is committed to developing additional airports and enhancing regional connectivity. The following measures will be undertaken to achieve this vision:

3.5.1. Development of a new international airport

- To address the increasing air traffic demand and ensure future capacity, the State will explore the development of a new international airport, potentially in Puri, by 2030
- The proposed international airport will support tourism, particularly for the globally renowned Jagannath Dham, and strengthen Odisha's connectivity with major global destinations
- Planning for this airport will include the latest infrastructure standards, sustainability measures, and advanced passenger and cargo handling systems

3.5.2. Development of regional airports under the UDAN scheme

- At least five new airports will be developed under the Ude Desh ka Aam Naagrik (UDAN) scheme by 2036 to improve regional connectivity and bring air travel closer to smaller towns and underserved areas
- These airports will be strategically located to connect remote and economically significant regions to major hubs, fostering local development and business growth
- The State will work closely with the Ministry of Civil Aviation to ensure the timely execution of projects under the UDAN scheme

3.5.3. Financial incentives for airline operations

- Financial incentives, including Viability Gap Funding (VGF), will be provided to airlines operating on new routes to make regional aviation economically viable and attract more carriers to underserved destinations
- Additional benefits such as reduced airport charges, fuel tax concessions, and subsidies for night parking will be introduced to encourage airlines to operate in Odisha's regional airports

3.5.4. Incentive packages for airport developers

- The State will offer a dedicated package of incentives to attract private airport developers and investors, including:
  - Subsidised land acquisition for airport construction and expansion
  - Capital expenditure (capex) subsidies to reduce upfront development costs for airport infrastructure
  - Viability Gap Funding (VGF) support to make airport development projects financially sustainable
- These incentives will be framed to encourage participation under Public-Private Partnership (PPP) models, fostering innovation and efficiency in airport management

3.5.5. Enhanced connectivity to airports

- Multi-lane, access-controlled roads will be developed to connect all major airports with nearby cities and national highways, ensuring seamless transportation for passengers and cargo
- Integrated transport planning will be undertaken to link airports with rail and public transit networks, creating a multi-modal system that enhances convenience and reduces travel time
- Special focus will be given to tourism hotspots like Puri and Konark, ensuring quick and efficient access from airports

3.5.6. Sustainability and green airport development

- All new airport projects will incorporate sustainability as a core principle, including the use of renewable energy, water conservation systems, and green building certifications
- Measures will be taken to minimise the environmental impact of airport operations, including noise reduction strategies and eco-friendly ground handling systems

3.5.7. Capacity building and employment generation

- The State will prioritise skilling initiatives to prepare the local workforce for jobs in aviation, airport management, and related industries
- Training centres will be set up in partnership with aviation academies and private players to create employment opportunities for Odisha's youth

3.5.8. Promotion of tourism through aviation

- The expansion of aviation infrastructure will be aligned with the State's tourism goals, enabling seamless connectivity to heritage sites, beaches, and eco-tourism destinations
- Special tourism packages will be developed in collaboration with airlines to attract domestic and international travellers
- Promote aerospace activities across different regions of the State to catalyse high-tech manufacturing, innovation, and employment generation.

3.5.9. Integration with the State's economic Vision

- The development of airports will be aligned with Odisha's long-term economic Vision, supporting key sectors such as manufacturing, technology, and logistics
- Enhanced connectivity will also facilitate the export of local goods, agricultural produce, and handicrafts, boosting economic growth and livelihoods

3.6 Enhance multi-modal connectivity and establish eight Multi- Modal Logistics Parks (MMLP)

The State will:

3.6.1. Establish eight MMLPs along the industrial clusters under the Odisha Economic Corridor (OEC) to facilitate port-led industrial and manufacturing growth in the State. Under each, it will:

- Ensure integration with roads, railways, airports, and ports for efficient logistics to ensure seamless connectivity
- Build comprehensive facilities, including stockyards, warehouses, cold storages, and utility corridors similar to the planned facilities at Gopalpur port
- Enhance the industrial output and export potential of the region by improving supply chain efficiency
- Implement advanced logistics management systems for real-time tracking and efficient cargo handling

3.6.2. Leverage the 575 km coastline to become a major cargo-transshipment hub in South Asia. For this, OMB will:

- Work with other maritime States to increase inter-State cargo volumes via coastal shipping
- Identify hub ports and suitable jetties that act as feeders to these hub ports for faster evacuation of cargo to and from the hinterland

3.6.3. Coordinate with National Highways Authority of India (NHAI) to expedite the proposed 346 km coastal highway, connecting seven coastal districts of Odisha under the 'Bharatmala Pariyojana'

3.6.4. Plan and develop a robust slurry pipeline network in the State through a collaborative effort between Odisha Mining Corporation (OMC) and the corporate sector

3.6.5. Collaborate with Government of India to **ramp-up the railway infrastructure** for mineral and commodity transportation

3.7 Develop shipbuilding, ship-repair and aviation ancillary industries

The State will drive development of allied industries which leverage and enhance the transport infrastructure, as follows:

3.7.1. Promote shipbuilding, ship-repair, ship-breaking and allied industries in line with Maritime India Vision 2030 (MIV 2030) and the Amrit Kaal Vision 2047.

The State will aim to be among top three States in India for shipbuilding and repair with a INR 5 lakh crore annual turnover by 2047 (25% of India's targeted share of INR 20 lakh crore). To achieve this, the State shall:

- Develop a dedicated hub for shipbuilding and repair industry to attract local and foreign companies
- Provide plug-and-play facilities in the hub for Original Equipment Manufacturers (OEM) and ancillary units
- Conduct roadshows to attract national and international players
- Develop associated skilling centres in the hub

3.7.2. Build world-class aviation Maintenance, Repair and Operations (MRO) facility in the State by 2036. Potential locations include Bhubaneswar, Puri and others

3.7.3. Enhance air cargo volumes at Bhubaneswar airport

3.7.4 Develop facilities for air cargo, Fixed Base Operators (FBO) and Flight Training Organisations (FTO) at other airports in the State

3.8 Facilitate gradual decarbonisation of all transport systems

To achieve comprehensive decarbonisation of the transport and logistics sector, in line with India's announced net zero emissions goal by 2070, the State will prepare a blueprint for transport decarbonisation across all modes of transport, with specific milestones. The key action steps include the following:

3.8.1. Road transport

- **Establish fuel efficiency standards** and enforce vehicle scrapping policy for diesel vehicles older than 10 years and petrol cars older than 15 years
- **Extend State incentives for electric / alternate fuel vehicles vehicles** till 2030
- **Catalyse public and residential charging infrastructure** expansion through collaborations with automotive manufacturers, urban local bodies and oil companies
- **Incentivise 100% electrification of new Light Commercial** Vehicles (LCVs) by 2036
- **Incentivise logistics players** to adopt LNG , hydrogen or electric trucks
- **Identify high traffic routes and build extensive network** of LNG[1] and hydrogen fueling stations, and Electric Vehicle (EV) charging stations
- Work with National Highways Authority of India (NHAI) to **extend tree coverage** on National Highways in the State, under the 'Green highways policy'; Expand to similar plantation programmes for State and district highways

3.8.2. Port and waterways

- Enforce the Central Government's Harit Sagar guidelines for **carbon neutral major ports** by 2047
- **Develop a dedicated 'Green hydrogen and ammonia berth'** at Paradip by 2030
- **Develop green ammonia and methanol bunkering and storage facility** in all ports by 2036
- **Facilitate retrofitting of existing tourist and fishing boats with battery-powered drives** by 2029; Work with Odisha Renewable Energy Development Agency (OREDA) to issue tenders for new solar boats

3.9 Increase corporate share in transport infrastructure financing

The State shall aim to increase private sector investments with a target to achieve 70% share in road, airport, waterways and port development by 2047. For this, it will:

- **Create standardised and viable partnership models** for different project archetypes, e.g., for construction and maintenance of transport infrastructure
- **Develop an asset monetisation pipeline** and deploy unlocked capital in new infrastructure projects
- Collaborate with the Government of India to **raise funds from corporate institutional funds** and promote Infrastructure Investment Trusts (InVIT) among infrastructure developers and financiers
- **Explore de-risking of infrastructure financing** through currency risk mitigation mechanisms, and credit guarantees, etc.
- Establish a task force for undertaking projectisation, roadshows and investor facilitation; institutionalise engagement with sovereign wealth funds and multilateral institutions
- **Institutionalise mechanisms for standardised tendering**, demand forecasting studies, Detailed Project Reports (DPR), master plans etc. to reduce information asymmetry

3.10 Invest in skilling and capability building

The State will invest in end-to-end capacity building with the dual objective of enhancing capacity of its personnel and creating highly-skilled employees for the upcoming projects.

3.10.1. Shipping and ports

- Establish a Maritime Studies Department in one of the State universities by 2030, in collaboration with the Odisha Maritime Academy in Paradip. This department will be integrated with the Crew Training Institute for Inland Vessels at Chandbali, Bhadrak, to create a comprehensive hub for maritime education and training.
- Establish a Centre for Maritime and Shipping Innovations (CMSI) by partnering with global institutions to undertake R&D activities and offer specialised technical services

Odisha Maritime Board 2.0: Anchor for Viksit Odisha

Empowering a Single-Window Maritime Authority

Revamp the Odisha Maritime Board into a robust, empowered institution that functions as the single-window agency for port and inland waterway development-ensuring faster decisions, transparency, and ease of doing business.

Driving Inclusive Growth through Port-Led Development

Anchor the development of greenfield and brownfield ports that uplift coastal communities, generate lakhs of jobs, and integrate Odisha's rural and tribal hinterlands into global trade corridors.

Strategic Coordination with Centre and Neighbouring States

Strengthen inter-agency alignment with central ministries and neighbouring states to position Odisha as the eastern gateway of Bharat, catalyzing national and regional connectivity.

Championing Green Maritime Infrastructure

Mandate eco-friendly practices across all projects-developing green ports, promoting clean fuels, and preserving Odisha's rich coastal ecosystems for future generations.

Unlocking Global Maritime Partnerships

Forge G2G and G2B collaborations with global maritime powers to bring cutting-edge technology, international best practices, and investment to Odisha's shores.

Skilling the Next Generation of Maritime Leaders

Build state-run maritime academies and training centres under OMB to skill Odisha's youth for high-value jobs in port logistics, shipbuilding, inland navigation, and global trade.

3.10.2. Aviation

- Operationalise the Aviation Centre at Dhenkanal by 2030 to provide world-class training facilities to pilots, ground-handling staff, and engineers, etc. from across India and neighbouring countries
- Collaborate with airlines, airports and allied services (cargo, ground handling, and MRO[2] etc.) to train and recruit more youth from Odisha with funding support from the State

3.10.3. Public transport: Setup driving schools (Government-owned and/ or through public-private partnership) for women with employment facilitation in State-owned and private bus services, and ride-hailing services, etc.

3.10.4. Department capability building: The State will launch a capability building programme for all its personnel under a life-long learning model. The programme will have periodic trainings in both technical as well as administrative fields, with expertise in specific areas of importance, in collaboration with national and international institutions

[2] Maintenance, repair and overhaul

3.11 Set up an Empowered Group of Secretaries (EGoS) to design and implement the State's multi-modal transport strategy

The State will adopt a 'Whole-of-Government' approach to enable seamless co-ordination across concerned departments to achieve this Vision. The State will establish two structures to achieve this:

3.11.1. Empowered Group of Secretaries (EGoS) with the Principal Secretary, Commerce and Transport as the Chair, to prepare a 10-year roadmap for an integrated transport system and continue as nodal entity for progress review and debottlenecking

3.11.2. Inter-departmental taskforces under EGoS for coordinating and driving on ground implementation

The EGoS will co-ordinate the following activities:

- Conduct an Origin-Destination (OD) study to understand and quantify intra- and inter-State travel pattern and goods flow to design transport and logistics masterplan
- Ensure Centre-State and inter-departmental coordination for railways, highways, major ports, and aviation etc.
- Develop the infrastructure projects pipeline for 2036 and 2047, updated periodically to attract long-term investors
- Set prioritisation for critical projects with oversight from the Hon'ble Chief Minister to resolve bottlenecks
- Ensure fast-track planning and implementation of multi-modal connectivity projects
- Prepare the blueprint for transport decarbonisation in the State and ensure effective and timebound implementation of the electric vehicle (EV) policy
- Facilitate faster land acquisition through war-rooms with specialised communicators trained in behavioural sciences and social work for execution and engagement
- Ensure work contracts include well-defined schedules, penalties for any delays, and incentives
- Work with Odisha State Disaster Management Authority (OSDMA) to define standards for disaster resilient transport infrastructure and enforce the standards in all new infrastructure tenders

CHAPTER 18

INDUSTRIES: FUELING ECONOMIC EXPANSION AND EMPLOYMENT GENERATION

Summary

Odisha's manufacturing sector is a pillar of the State's economic development, contributing 23% to the Gross State Value Added (GSVA) and providing employment to nearly 16 lakh people. While the State is diversifying into emerging sectors such as petrochemicals and green energy equipment manufacturing, basic metals remain dominant, accounting for nearly 80% of the manufacturing GSVA. Moreover, with most of Odisha's more than ten lakhs MSMEs, there is a significant opportunity to diversify and expand into new areas.

Odisha's rich natural resources, three strategically located ports, and a large, skilled workforce provide a strong foundation for industrial development. **By 2047, the State aims to achieve a manufacturing GSVA of nearly INR 40 lakh crore (in nominal terms) and generate employment for 33 lakh people**. By embracing advanced technologies and prioritising sustainability, Odisha is poised to establish itself as a leading hub for innovative and clean manufacturing.

Odisha has set itself the goal of becoming India's leading end-to-end manufacturing hub, leveraging both domestic and export opportunities.

By 2047, the State envisions the following outcomes

- Rank among the top five States in manufacturing GSVA with at least two major green industry hubs by 2047
- Achieve a 7.5% share in India's exports, including contributions from MSMEs, by 2047, with an interim goal of 5% by 2036 (currently 3%)
- Attract investments of over INR 30 lakh crore in the next 15 to 20 years, doubling employment in the manufacturing sector while ensuring strong compliance with labour welfare standards
- Rank among the top three States in ease of doing business by 2036, improving from the current sixth position
- Focus on attracting more employment-intensive sectors such as textiles and apparel manufacturing, food processing, and MSMEs, with the aim of generating employment for 2 to 2.5 lakh people within the state each year

Focus sectors for growth

Odisha has identified eight priority and thrust sectors to drive manufacturing growth, while continuing to build on its strength in metals and mining (addressed separately). Three key sectors – **metal downstream, chemicals and petrochemicals, and food processing** – are expected to account for nearly 70% of incremental manufacturing GSVA by 2047.

Key initiatives to achieve the outcomes

- **Establish a 'Manufacturing mission'**

Odisha will develop industrial mega-parks spanning 1,000 to 3,000 hectares across its priority and thrust sectors. These parks will include:

- Plug-and-play infrastructure to enable quicker industrial setup
- Shared business development services to improve operational efficiency
- Worker housing, tool rooms, and other facilities to support a thriving workforce
- Support for seamless land acquisition to facilitate large-scale industrial development

- **Strengthen the MSME ecosystem**

Odisha aims to build a robust MSME base that supports large industries and exports. The State will:

- Provide incentives for in-State procurement by large industries to encourage local supply chains
- Expand supply chain financing schemes to support MSMEs with their working capital needs
- Introduce export support programmes to improve the global competitiveness of MSMEs

- Establish MSME clusters across districts of the State for relevant sectors to promote clusterisation of industries, facilitating connection to global supply chains for export orientation
- Provide Government facilitation for quality upgradation and certification of MSME products to ensure global standards

Enhance the 'Ease of Doing Business' (EoDB)

Odisha is committed to creating a business-friendly environment by forming an Group of Minsters (GoM) under the Hon'ble Chief Minister to:

- Streamline regulatory processes for faster approvals
- Simplify compliance requirements to reduce the administrative burden on businesses
- Ensure continuous improvement in EoDB rankings

Upskill the workforce and prioritise labour welfare

The State will implement targeted initiatives to support over 30 lakh workers by:

- Offering job-specific skilling programmes in advanced manufacturing technologies and priority and thrust sectors
- Strengthening labour welfare schemes to ensure workplace safety, fair / statutory wages, social security and job satisfaction

Create robust governance mechanisms

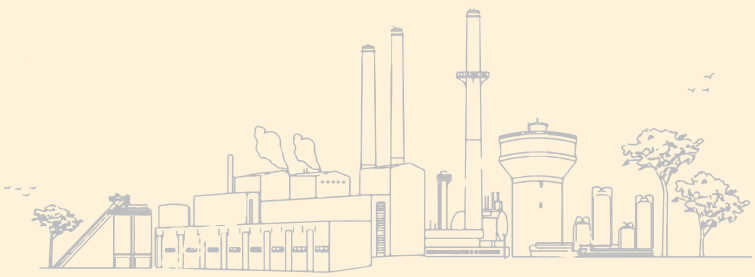
Odisha will put in place effective governance frameworks to oversee industrial growth. This will include:

- A dedicated project management office to track industrial projects and ensure timely execution
- Investment promotion strategies to attract domestic and international investors

Over the next 24 months, the State will

- **Launch the 'Odisha Manufacturing Mission'** with a governing council, empowered to execute existing planned projects, build roadmap for expansion in priority and thrust sectors and set up monthly reviews to track progress
- **Establish task forces for the projectisation** of programmes, execution and monitoring of the top three sectors (e.g., identification of strategic locations for building industrial parks, and investor roadshows)
- **Operationalise a comprehensive one-stop-shop dashboard** for the Hon'ble Chief Minister and senior officials to monitor industrial projects with key features including timelines, land, labour and infrastructure requirements, subsidies, and end-to-end tracking
- **Establish a professionally managed 'Industry promotion war-room'** to drive the acceleration from announcement to action
- **Forge Government-to-Government (G2G) partnerships** to scale up the 'Petroleum, Chemicals, and Petrochemicals Investment Region (PCPIR)' in Paradip
- **Map the mandatory and desired skills for priority and thrust sectors** and partner with corporate players to develop and deliver training programmes for the same
- **Update the 'Industrial Policy 2022' with incentives for the leading sectors** with a clear roadmap, governance support and performance-linked incentives
- **Establish a 'Group of Ministers'** to develop a comprehensive, five-year plan to further improve the ease of doing business in Odisha

Odisha is well-positioned to be the economic engine for 'Viksit Bharat', leveraging its abundant natural resources and established industrial base. Odisha's strategic focus on value addition is evident in its efforts to enhance industrial output through advanced manufacturing and processing capabilities. The State is also investing heavily in infrastructure development, with modern ports, highways, and rail networks facilitating efficient trade and connectivity. Additionally, Odisha is committed to skilling its workforce through various educational and vocational training programmes, ensuring a steady supply of skilled labour to meet industrial demands. These combined efforts in resource utilisation, industrial growth, infrastructure enhancement, and workforce development position Odisha as a key driver in India's journey towards becoming a developed nation.



1. Context

Over the last 20 years, Odisha has evolved from a largely agrarian State to a leading industrial State on the back of stable policy and investment promotions. Today, the industrial sector in Odisha is a significant contributor to the economy with manufacturing growing at an annual rate of 12% from 2012-24, constituting 23% of Odisha's Gross State Value Added (GSVA) in 2023-24.

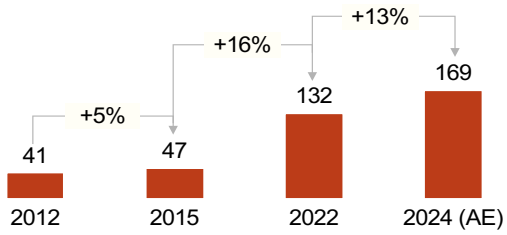
The State is the largest producer of steel, stainless steel, alumina and aluminium in India. While basic metals still dominate the manufacturing industry, contributing to approximately 80% of its GSVA, Odisha's expansion into emerging sectors like chemicals and petrochemicals, textiles and apparel, and food processing could drive higher per capita income for employees and create significant growth opportunities for its 8.4 lakh MSMEs (Exhibit 18.1).

No. of udiyam registered MSMEs in Odisha - 10,73,632 as on 27 May 2025

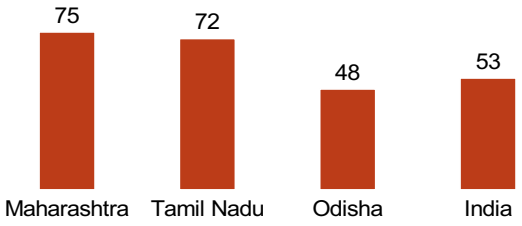
EXHIBIT 18.1

Current status of manufacturing and MSME sectors in Odisha

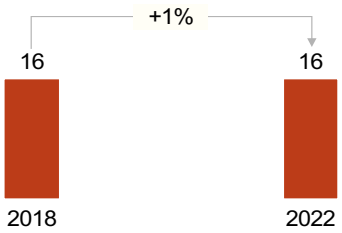
GSVA at current basic prices
INR '000 cr.



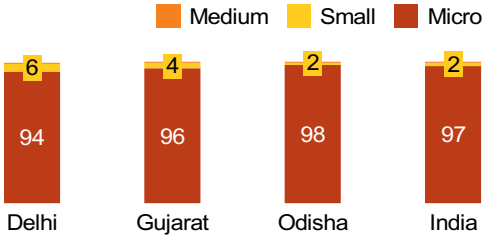
UDYAM registered MSMEs, 2025[4]
Nos. per thousand population (taken per 2011 Census)



Total no. of employees in industries
Lakh nos.



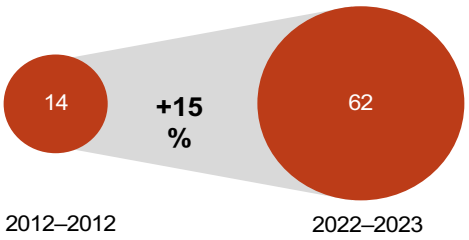
Distribution of MSMEs, 2024
%



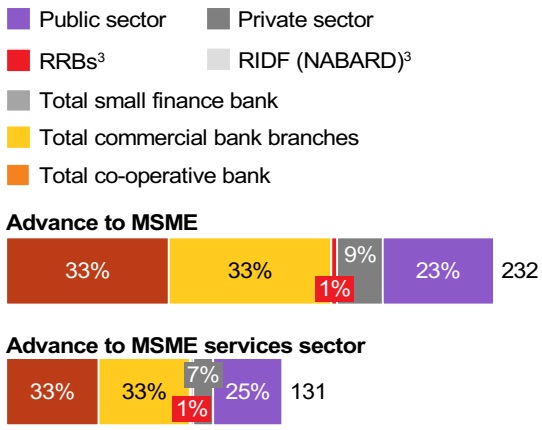
Top manufacturing industries and their contribution to the manufacturing GSVA, 2023-24
INR '000 Cr.

		% contribution	5-year CAGR[1]
Basic metals	132	78%	25%
Coke and refined petroleum products	13	7%	16%
Chemicals and chemical products	7	4%	18%
Others[2]	5	3%	-6%
Food products	3	2%	21%
Other non-metallic mineral products	3	2%	15%
Paper and paper products	2	1%	6%
Beverages	1	<1%	15%
Rubber and plastic products	1	<1%	-4%

Bank advances to MSMEs
INR '000 cr.



Source of MSME credit, 2024
INR k cr.



[1] 2017-18 to 2021-22
[2]. includes Cotton, Salt production, tobacco, wearing apparel, leather, wood, printing, computer, electronic & electrical equipment, other transport equipment, furniture, repair and installation of machinery, Waste collection, treatment and disposal activities, Publishing activities and others
[3]. RRB: Regional Rural Bank | RIDF: Rural Infrastructure Development Fund | NABARD: National Bank for Agriculture and Rural Development
[4]. MSME (Udyam) Registration Including Udyam Assist Platform (UAP), Ministry Of Micro, Small & Medium Enterprises
Source: Odisha Economic Survey

The Hon'ble Chief Minister said, 'Odisha is poised to become a modern hub of industrial and economic activity. It is ready for business'

There are several reasons why Odisha is at a unique advantage to become a manufacturing leader in India:

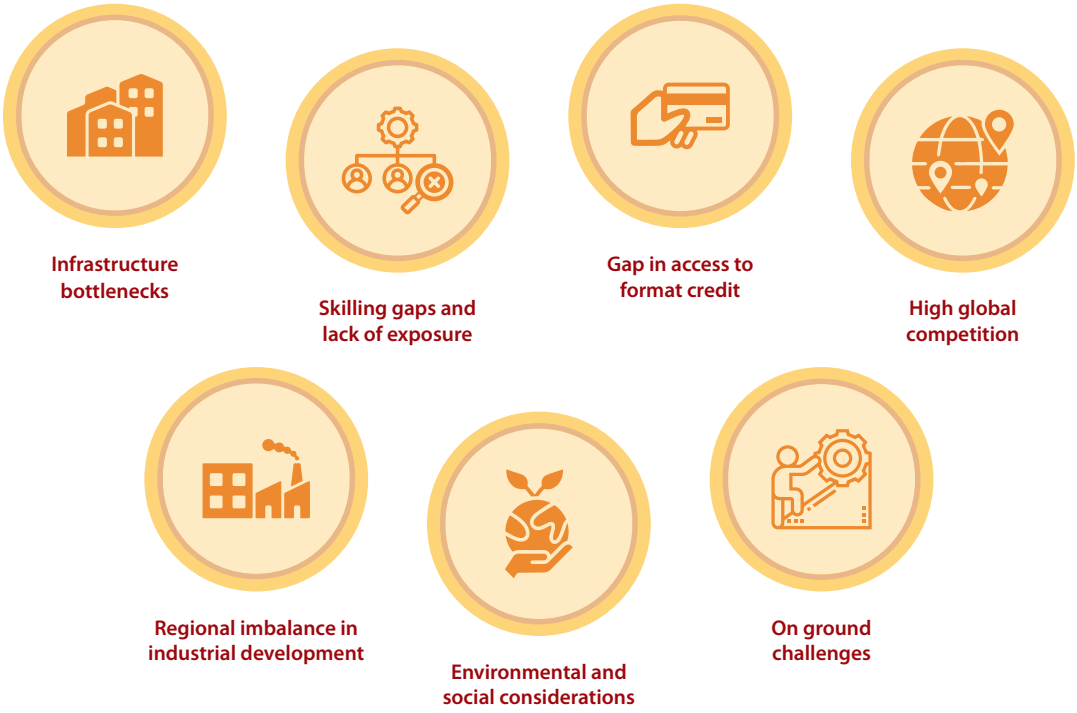
- **Significant mineral deposits**: Odisha holds 92% of India's chromite deposits, 53% of bauxite, 45% of manganese, 35% of iron and 25% of coal (e.g., bauxite in Koraput and Rayagada, coal in Angul & Sundargarh, Chromite in Jajpur, Iron ore in Keonjhar and Sundargarh)
- **Abundant natural endowments**: The State boasts of a 575 km coastline and three large ports (Paradip, Gopalpur and Dhamra), fertile lands, and river basins, among other strengths
- **Skilled workers**, who are already driving manufacturing in sectors like textiles and apparels, gems and jewellery, among others, in other States

By focusing on diversification in high value added and emerging sectors, Odisha can strive to significantly improve the employment and per capita income of all employees while providing local employment opportunities to the people of Odisha.

1.1 Key challenges

Despite several wins, the State faces significant challenges in scaling its manufacturing sector. At the core of these challenges lies a fragmented manufacturing ecosystem, with issues spanning across five critical dimensions - parks, people, policies, products, and logistics - each of which plays a pivotal role in shaping the sector's growth trajectory. A deeper view of these challenges is presented below:

EXHIBIT 18.2



Infrastructure bottlenecks

- Poor inner roads, long distances between hubs like Rourkela, Jharsuguda, and Sambalpur (nearly 300 km from Bhubaneswar), frequent disasters, and forested areas complicate infrastructure development
- Additionally, export potential is restricted by inadequate port facilities and limited process awareness, forcing goods to neighbouring States' ports, leading to a loss of the 'Made in Odisha' label
- Upgrading Paradip, Dhamra, and Gopalpur ports with facilities like waste disposal for Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR) can enable direct exports, cut costs, and enhance regional impact, strengthening the industrial ecosystem

Skilling gaps and lack of exposure

Limited exposure to business culture and access to skilling, especially in rural areas affects the workforce readiness and entrepreneurial spirit. For instance, labour productivity of non-mineral sectors such as textiles, food processing, beverages etc. is low in Odisha (INR 0.8 lakhs in unincorporated enterprises) as compared to other high per capita income States (INR 1.7 lakh)

Gap in access to format credit

Only 40% of India's MSMEs access formal credit, a situation that is echoed in the State. Collateral requirements often limit options for small businesses and shortage of funds eventually impacts MSME cash flow, causing payment delays to large industries and destabilising local supply chains

Regional imbalance in industrial development

Industrial growth in the State remains heavily imbalanced, with 22 out of 29 districts[1] recording an industrial index below 0.30. This stark disparity underscores significant untapped potential and highlights the need for targeted efforts to drive industrialisation and economic growth in these under-performing regions

Environmental and social considerations

Odisha's coastal location makes it susceptible to natural disasters like cyclones and floods, which can disrupt manufacturing operations and supply chains

On-ground challenges

- High operational costs and inefficiencies affect Odisha's industries, with issues like delayed land availability and costly effluent treatment facilities. Such barriers reduce overall productivity and hinder investment attractiveness in key sectors
- Odisha's manufacturing sector, particularly in emerging industries like electronics and chemicals, faces fierce competition from Southeast Asia, where countries like Vietnam offer up to 30% lower production costs. Competing on a global scale remains challenging for companies across India without similar cost advantages

[1] excluding Kandhamal due to data unavailability

1.2 Key trends

The global manufacturing sector is evolving rapidly with technology advancements, shifting geopolitics, and increased focus on sustainability. The 'Make in India' initiative aims to capitalise on these shifts, positioning India as a global manufacturing hub. Additionally, increasing financial inclusion for MSMEs is gathering increasing importance, enabling broader participation in the manufacturing sector. By embracing the following key trends, Odisha can enhance its industrial growth, sustainability, and competitiveness on the global stage:

EXHIBIT 18.3

Shifting global supply chains: With port access (Paradip, Gopalpur, Dhamra), Odisha is primed for export-led growth, supporting India's USD 1 tn export target by 2030. MSMEs and major firms can benefit from this connectivity, opening access to global markets while lowering logistics costs

Technological integration: With Industry 4.0 on the rise, large companies are investing in smart factories to streamline operations and boost productivity. This digital wave has filtered down to MSMEs, with over 60% adopting digital tools and platforms to optimise operations and access digital marketplaces

Sustainability and green practices: Companies are pivoting to energy-efficient technologies, reducing carbon footprints in response to regulatory demands and consumer preferences. More than 30k MSMEs across India are adopting eco-friendly practices like solar installations and waste recycling

Financial inclusion has been transformative for MSMEs, with initiatives like MUDRA[1] disbursing over INR 18 lakh crore and empowering over six crore businesses across underserved regions. Understanding the importance of MSMEs in the value chain, large companies like Tata and Hindustan Unilever Limited (HUL) have started investing in supply chain financing programmes

Strategic priority for India: MSMEs are central to India's growth story, contributing nearly 30% of GDP and generating around 11 crore jobs. Initiatives like 'Make in India' and 'MSME Champions' foster innovation across sectors through grants, tax breaks, and capacity-building, already creating nearly over one crore MSME jobs

Source: MSME Digital Survey 2023, Energy and Environment Council 2023

[1] Micro Units Development & Refinance Agency Ltd.

2. Vision and outcomes

Aligned with India's Vision of becoming a global manufacturing hub through initiatives like 'Make in India', Odisha aims to transform its manufacturing and MSME sectors. By leveraging strategic port access, embracing advancements in robotics, artificial intelligence (AI), and promoting sustainability, Odisha envisions positioning itself as a leading manufacturing destination. Further, by fostering innovation and inclusivity, the State aims to attract diverse talent and drive economic growth. Finally, by enhancing financial inclusion for MSMEs, Odisha will ensure robust industrial growth, contributing significantly to both the State and national economy.

EXHIBIT 18.4

VISION 2047

Become India's leading end-to-end, manufacturing hub, capturing export opportunities

To bring this Vision to life, the State will establish clear, measurable outcomes that will guide all stakeholders towards a common goal and ensure accountability:

EXHIBIT 18.5

Key outcomes	Unit	Current status	2029	2036	2047
Share of Odisha in India's exports	%	2.5%	3.5%	5%	7.5%
Contribution to State GSVA (in nominal terms)	%	23%	25%	26%	27%
Odisha-headquartered industrial companies in Global Fortune 500[1]	Nos.	-	1	3	5
Per capital income (in nominal terms)	INR lakh	~2	3	9	32
Position on 'Ease of doing business' index in India	Rank	6th	Top 5	Top 3	Top 3
Time required to start a business[2]	No. of days	-	<15	<10	<5
Major industries contributing to more than 5% of manufacturing GSVA	Nos.	2	3	4	>5
Output/ input ratio for manufacturing	Multiple	1.3	1.5	1.7	>2
Industrial power consumption from green sources[3]	%	<10%	15%	25%	>33%
Industrial emissions per GSVA[4]	$MtCO_2e$ billion	-	<5	<3	<2
Share of MSMEs with access to formal credit	%	-	>33%	>60%	~100%

[1] Mumbai (3), India (6), Japan (22)
[2] In line with national targets; New Zealand (~1), USA (~4), UK (~5)
[3] Norway (72%), Brazil (46%), Canada (30%)
[4] In line with national targets

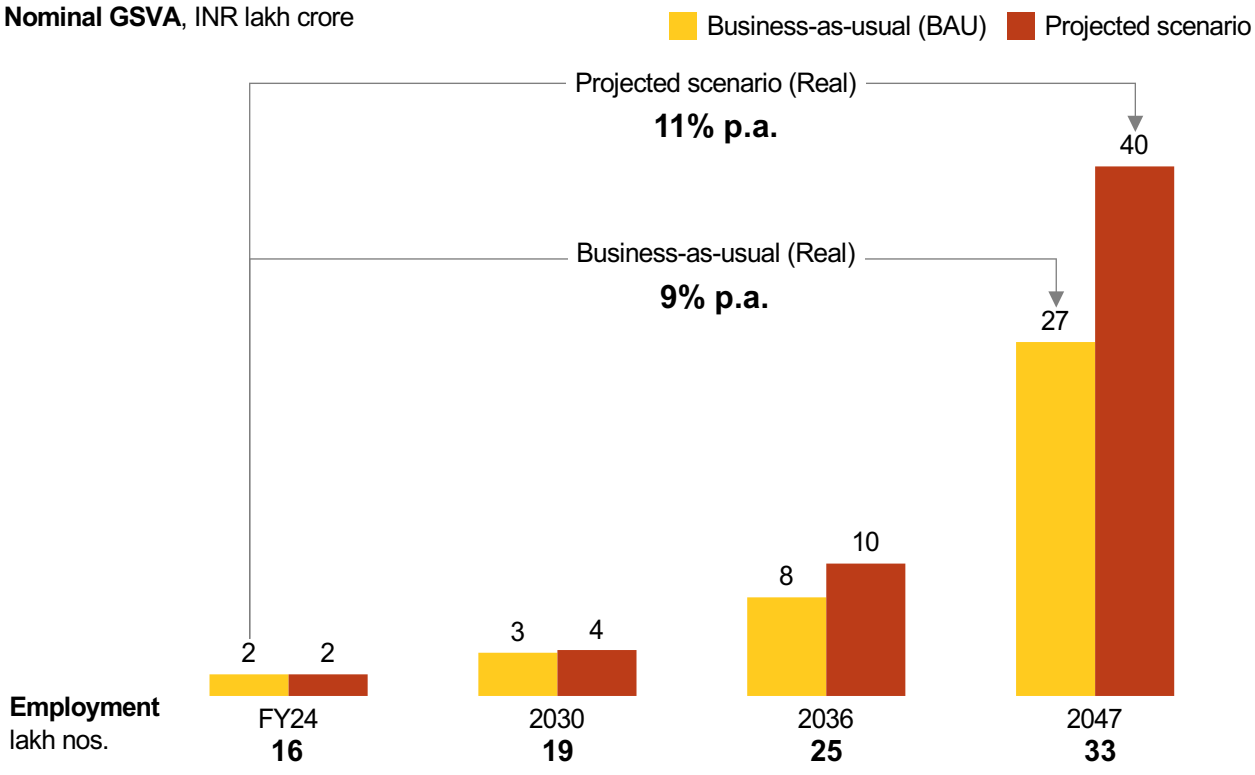
2.1 Growth aspiration

Increasing the share of manufacturing in Odisha's GSVA is of paramount importance, given its substantial multiplier effect on the economy. A robust manufacturing sector not only drives overall economic growth but also holds immense potential for large-scale employment generation, skill development, and the promotion of ancillary industries. The State realises its importance in acting as a catalyst for regional development, attracting investments and positioning Odisha as a key industrial hub in India.

At the historical real growth rate of 9%, Odisha will only reach INR 27 lakh crore in manufacturing GSVA in nominal terms by 2047. **However, with focused interventions across diversification, value addition, and labour productivity improvements, the State can aim for a 11% real CAGR, reaching INR 40 lakh crore in manufacturing GSVA (nominal terms)**. This would bring manufacturing to a 27% share of the State's GSVA, up from 23% in 2023-24, in line with India's Vision of becoming a global manufacturing hub by 2047. This ambitious goal envisions doubling the employment in the sector to reach over 33 lakh people by 2047. This is illustrated below:

EXHIBIT 18.6

Odisha can achieve ~1.5x higher GSVA in the projected scenario than in business-as-usual scenario through targeted programmes



To achieve this, Odisha will prioritise key sectors for diversification and launch targeted interventions such as building special industrial parks, enabling value chain integration through a strong MSME structure, and establishing robust governance mechanisms (Detailed later, in section 3).

2.2 Industry prioritisation and illustrative opportunities

To achieve 11% CAGR in manufacturing GSVA by 2047, Odisha plans to strategically focus on specific sectors to attract investments, implement competitive policy measures, build robust infrastructure, and enhance its market share both domestically and internationally.

The State has applied a comprehensive methodology to identify the priority and thrust sectors considering factors such as right to win, favourable trends and employment generation potential. The prioritised eight industries from a list of over 25 is showcased below.

EXHIBIT 18.7

Eight (out of 25) manufacturing industries prioritised for Odisha basis right to win, favourable trends, employment potential and sustainability

25 industries in manufacturing sector

01 Right to win

- Availability of inputs (raw material, skills)
- Existing presence (including anchor investors)
- Required infrastructure (ports, power, water, logistics network)
- Competitive intensity

02 Favourable trends

- Domestic and global growth projections
- Investment inflows
- National strategic priority (e.g., import substitution, economic security)
- Adherence to sustainability and net zero commitments

03 Employment generation potential

8 prioritised industries for Odisha

1. Metal downstream (including ship and boat building and aerospace and defence equipment)
2. Chemicals, petro-chemicals and plastics
3. Food and seafood processing
4. Textiles, apparel, and technical textiles
5. Electronics System Design and Manufacturing (ESDM)
6. Electrical and mechanical equipment
7. Automobile and auto components
8. Pharmaceuticals

\+ **Continued focus on metals and mining** (covered in a separate chaptre)

Out of these, the following four sectors are expected to contribute to more than 70% of the incremental in manufacturing GSVA over the as-is scenario:

- Metal downstream including shipbuilding, and aerospace and defence manufacturing
- Chemicals and petrochemicals

- Food processing and beverages
- Textile, Technical Textile & Apparel

From the eight priority and thrust sectors, the following 21 illustrative opportunities have been pinpointed, based on India and global trends, potential for import substitution, and potential for value addition:

EXHIBIT 18.8

xx GVA (INR k cr.) ● Top 3 in India

Metal downstream and intensive industries (Division 25, 28, 30)

1	Metal downstream products[1] (Group 251, 259, 281, 282)	**300–320**
2	Aerospace and defence manufacturing[2] (Group 303, 304)	**180–220**
3	Shipbuilding (Group 301)	**90–100**
4	Rolling stock/ railway components (Group 302)	
5	Furniture manufacturing (steel) (Group 259)	

Chemicals, petro-chemicals and plastics (Division 19, 20, 22)

6	Petrochemicals and specialty chemicals (Group 192, 201, 202)	**140–150**
7	Plastic (polyethylene, polypropylene) packaging, Poly Vinyl Chloride (PVC) pipes (Group 221, 222)	

Food and seafood processing (Division 3, 10)

8	Agriculture and horticulture processing (Groups 101-105)	**180–200**
9	Aquaculture processing (Group 31)	**150–160**

Textiles, apparel, and technical textiles (Division 13, 14, 20)

10	Apparel manufacturing (Group 141, 143)	
11	Handicraft, handloom and coir-based products (Group 143)	**120–140**
12	Synthetic textiles (Group 131, 139, 203)	

Electronics System Design and Manufacturing (Division 26)

13	Semi-conductors (Group 261)	

Electrical equipment (Division 27, 35)

14	Green energy equipment (Group 351)	**40–50**
15	Power cables (Group 273)	
16	White goods (Group 275)	
17	Electrolyser manufacturing (Group 279)	

Automobile and auto components (Division 27)

18	Electric vehicle (EV) and EV component manufacturing (e.g., cells, and e-motors) (Group 271, 272)	

Others

19	Plywood (Group 162)	
20	Medical devices manufacturing (Group 325)	
21	Pharmaceutical	

[1] Steel – pipes and tubes, hot rolled coils and sheets, slitting; Aluminium – rolled products, extrusions, foil and packaging
[2] Spacecraft, defence auto-parts, drones, aerospace components
[3] Divisions and Groups based on NIC Code

Out of these opportunities, Odisha envisions emerging as one of the top three States within India for some high-potential areas:

- **Metal downstream products**: Odisha, contributing over 54% of India's total bauxite and 25% of iron ore production, provides a robust foundation for metal downstream industries. The State's established steel (18 million tonnes annually) and aluminum (two million tonnes annually) sectors can support further value addition
- **Petrochemicals and specialty chemicals**: With established industrial hubs and refineries, such as the Paradip Refinery with a capacity of 15 million tonnes per annum, Odisha is well-placed to expand its petrochemical and specialty chemical industries. The State has the potential to become a leading Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR), supported by robust infrastructure and resource planning
- **Aerospace and defence manufacturing**: Odisha's strategic geographic location and its heavy engineering capabilities, including facilities like Hindustan Aeronautics Limited (HAL) in Sunabeda, position it well to attract significant investments in the sector. Additionally, its rich titanium deposits, constituting about 67% of India's total reserves, offer a crucial material for aerospace applications
- **Ship-building**: With a coastline stretching over 575 km and multiple ports, including Paradip handling over 100 million tonnes of cargo annually, Odisha offers significant potential for ship-building activities. The State, being one of the key shortlisted ports on the Eastern Coast of India by the Government of India, can leverage its maritime infrastructure and skilled workforce to become a leader in this sector
- **Agriculture and horticulture processing**: Odisha's diverse agro-climatic zones and agricultural output (10 million tonnes of rice and more than one million tonnes of vegetables annually) make it ideal for developing a robust agriculture and horticulture processing industry (detailed in the 'Revitalising agriculture' and 'Animal husbandry' chapters)

- **Aquaculture processing**: Odisha's extensive 575 km coastline and abundant water resources, producing over 0.6 million tonnes of fish annually, provide a solid foundation for aquaculture. The State's focus on sustainable expansion can drive growth in aquaculture processing, tapping into a USD 5 billion export market. Additionally, there is significant untapped potential in deep-sea marine fishing, which is currently fully underutilised (Detailed in the 'Blue economy' chapter)
- **Apparel manufacturing**: Odisha is emerging as a hub for apparel manufacturing, with INR 11 lakh crore in investments from 26 companies. The companies in textiles, apparel, and technical textiles are expected to generate over one lakh jobs across the State. Two major parks are being developed, one near to the major port of Dhamra and another near Bhubaneswar at Malipada, featuring safe housing for women workers, common effluent treatment with zero liquid discharge, and utilities. Policies like the 'Odisha Apparel Policy, 2022' incentivise growth, while port connectivity ensures seamless trade. With a skilled workforce from Institute of Entrepreneurship Development (IED) and Apparel Training and Design Centres (ATDCs), the State is well-equipped to lead in apparel manufacturing
- **Handicraft**, **handloom and coir-based products**: Odisha's rich cultural heritage and skilled artisan communities, producing goods worth over USD 200 million annually, provide a unique advantage to the State to scale up the industry. Additionally, it boasts over 50 types of crafts and has 15 Geographical Indication (GI) tags. With more than 15 lakh artisans, it is a significant player in this sector, catering to both domestic and international markets (Detailed further in the 'Vibrant arts, culture and heritage' chapter)
- **Green energy equipment manufacturing**: Odisha's commitment to sustainable development and its potential for renewable energy sources position it as a strong contender for green energy equipment manufacturing. With major investors already starting to invest, the State can enhance its capacity to become a hub for East India

By focusing on the prioritised opportunities, Odisha will implement targeted interventions to significantly enhance its industrial landscape, increasing corporate investments and achieving its long-term economic goals.

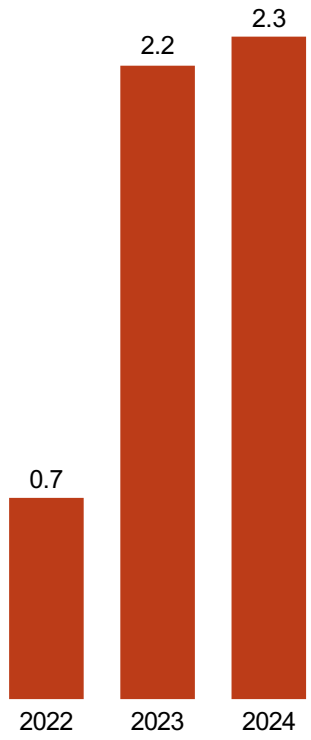
2.3 Planned investments

Over the last three years, the State has attracted over INR 5 lakh crores of investments (Exhibit 18.9) across manufacturing sectors with majority in basic metals (60%), followed by new age sectors like green energy equipment (14%), electric vehicle (EV) and EV component manufacturing (8%) and aerospace and defence manufacturing (4%).

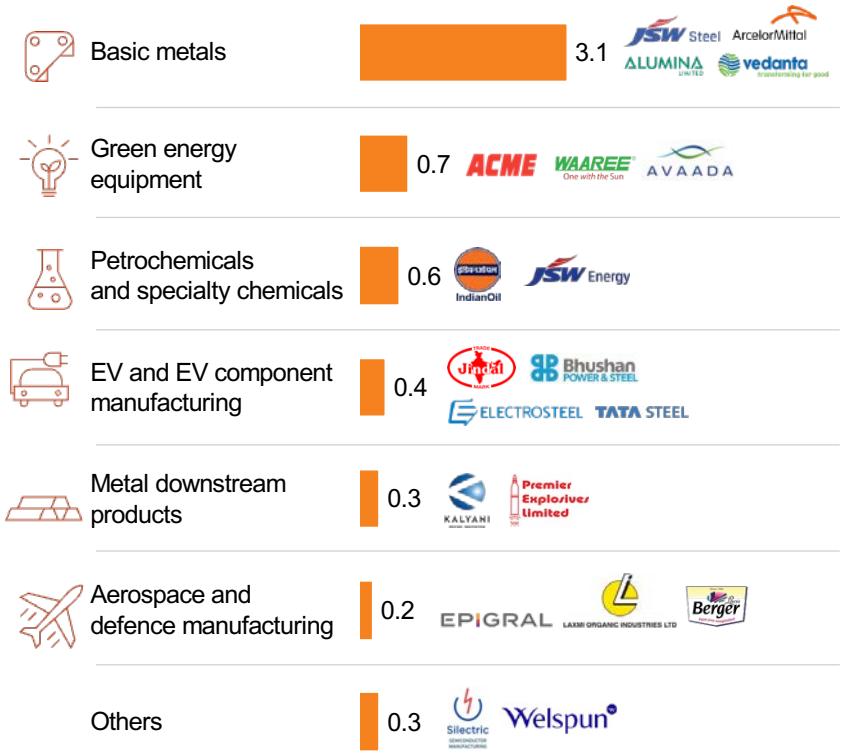
EXHIBIT 18.9

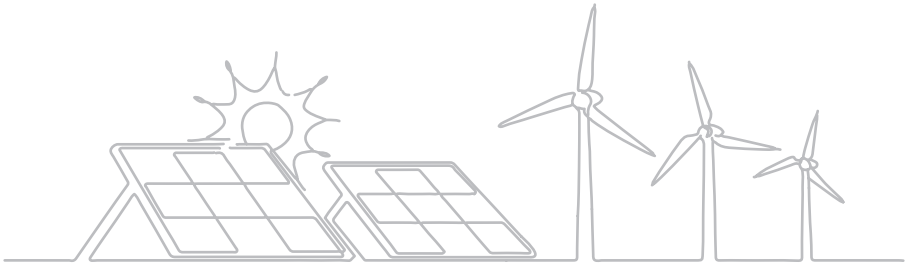
Planned investments in Odisha

Investments in manufacturing over the last three years
INR lakh crore



Split of investments across opportunities
INR lakh crores

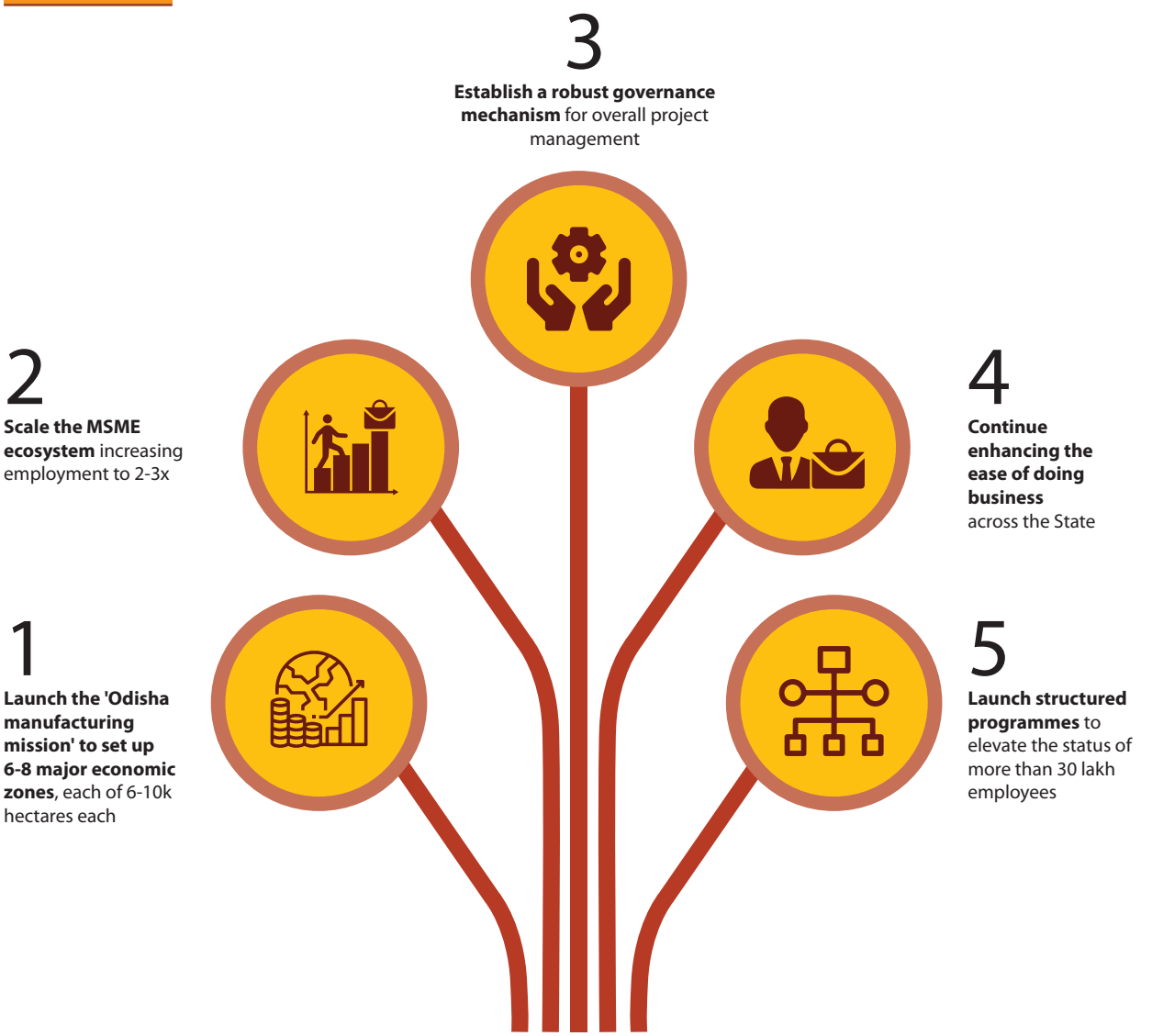




3. Key initiatives

To realise its Vision of becoming a leading manufacturing hub, Odisha will focus on the following five key strategic interventions:

EXHIBIT 18.10



3.1 Launch the 'Odisha Manufacturing mission' to set up 6-8 industrial parks, each of 1-3k ha, across the State

3.1.1 Identify and develop 6-8 industrial parks for priority and thrust industries

A strategically located industrial park with plug-and-play infrastructure can reduce risk for individual players and speed up their setup time. Tailored incentives could further attract top players. A special task force will be formed to build these parks, driving the following actions:

- **Identify and acquire land** for building the industrial parks, considering proximity to resources, logistics and workforce availability
- **Blueprint and build plug-and-play infrastructure** (including logistics, reliable utilities, testing labs, waste management, roads, public utilities, industrial sheds, R&D hubs, warehousing, and multi-modal logistics, etc.), ensuring adherence to best-in-class ease of doing business standards; ensure proximity to or develop world-class social infrastructure like townships, healthcare facilities, and educational institutions, etc.
- **Forge Partnerships to build state-of-the-art parks** in Odisha, starting with the Petroleum, Chemical and Petrochemical Investment Region (PCPIR) in Paradip
- **Establish full-service export facilities** in relevant industrial parks, including bonded warehouses, customs offices, and compliance labs; upgrade port infrastructure to support exports (e.g., waste disposal facilities in PCPIR, Paradip)
- **Simplify setup process for players**, e.g., by eliminating need for land conversion, establishing single-window clearance, among others; drive ease of doing business by building the parks as duty-free zones with export rebates

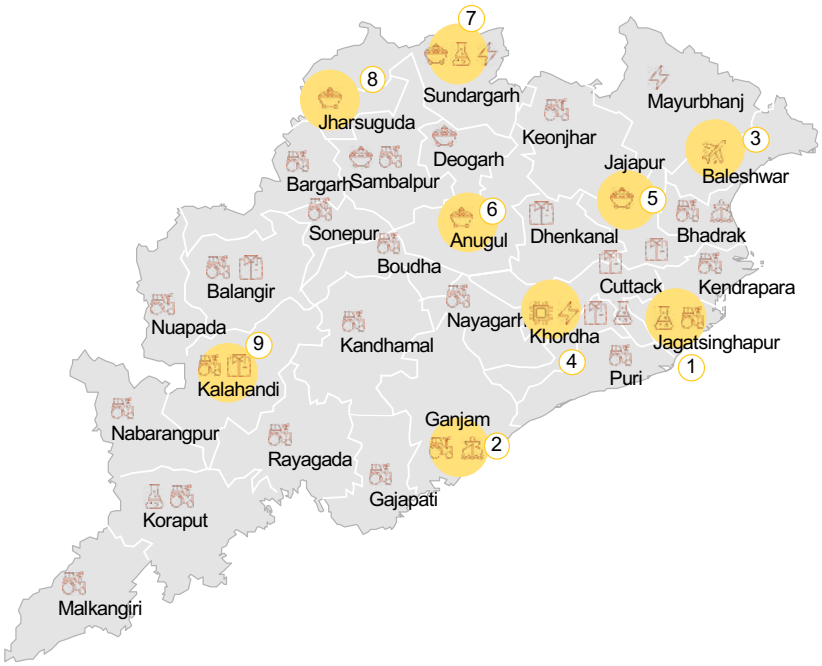
3.1.2 Attract investments in the parks through targeted incentives

- **Conduct roadshows and seminars for large industries (e.g., aerospace), with a task force focusing on attracting anchor investors**; tailored incentives to address the needs of individual players could be driven through the empowered committee as enabled by 'Industrial Policy Resolution (IPR) 2022'
- **Offer attractive incentives** such as low interest loans and interest subventions targeted towards small-scale industries (e.g., handlooms)
- **Set up foreign investment** cells in major industrial parks to guide international investors through State-specific processes and connect them with local partners

Industrial parks for the abovementioned priority and thrust industries could include the following:

EXHIBIT 18.11

- Chemicals and petro-chemicals
- Textile and apparel
- Electronics
- Food processing and beverage
- Aerospace and defence equipment
- Ship and boat building
- Metal downstream
- Electrical equipment
- Automotive and components



Illustrative economic zones
(to be completed in Phase 1 of 'Manufacturing mission'):

1. PCPIR[1] at Paradip port, Jagatsinghpur
2. Ship-building at Gopalpur port, Ganjam
3. Aerospace and defence manufacturing at Baleshwar (with expansion of HAL[2] plant)
4. Electrical and electronics manufacturing in and around Bhubaneswar, Khordha
5. Metal downstream parks in Jajapur
6. Steel and aluminium downstream, Anugul
7. Steel downstream, Sundargarh
8. Aluminium downstream, Jharsughuda
9. Textiles and handloom, Kalahandi

1. Petroleum, Chemical and Petrochemical Investment Region
2. Hindustan Aeronautics Limited

3.2 Scale MSME ecosystem, increasing employment to 2-3x

MSMEs' ability to produce niche, high-quality products and adapt rapidly to market changes makes them key players in sectors like handicrafts, food processing, and drone manufacturing.

To build a robust MSME ecosystem, the State plans to conduct studies to identify and prioritise top 15-20 products with high employment potential and integrate them with larger industries. Additionally, it will take up the following actions:

3.2.1 Improve market linkage

Expanding market connections for MSMEs is crucial as it enhances their access to broader markets, enabling them to scale up operations and increase profitability. Some of the following initiatives can, hence, foster sustainable growth and competitiveness of MSMEs in the global marketplace:

- **Roll out a supplier development and partnerships programmes** for priority and thrust industries to enable mentorship and market access to MSMEs through large companies
- **Launch a digital platform connecting investors** with MSMEs to enhance supply chain integration and demand aggregation
- **Create comprehensive export support** for MSMEs through facilitation centres offering guidance on logistics, buyer matchmaking, and Government-to-Government (G2G) partnerships. Build standards and testing labs to ensure compliant product quality, reduce certification costs, provide trade fair subsidies, and launch training programmes on market-specific compliance

3.2.2 Enhance access to formal credit and financial support

Through this, the State plans to offer MSMEs the necessary capital to invest in growth and innovation. The following illustrative interventions can help bridge the financing gap, enabling these businesses to expand operations, improve productivity, and compete more effectively in the market:

- **Implement a supply chain finance programme** for MSMEs with outreach to large companies to provide guarantees and digital financing to reduce cash flow problems, helping them invest in expansion
- **Benchmark and expand current policy** to enhance credit access to MSMEs including zero-collateral loans, interest subsidies, and credit guarantees (e.g., MUDRA[2] Yojana and France's 'Coface export credit insurance)

3.2.3. Build innovation and R&D support

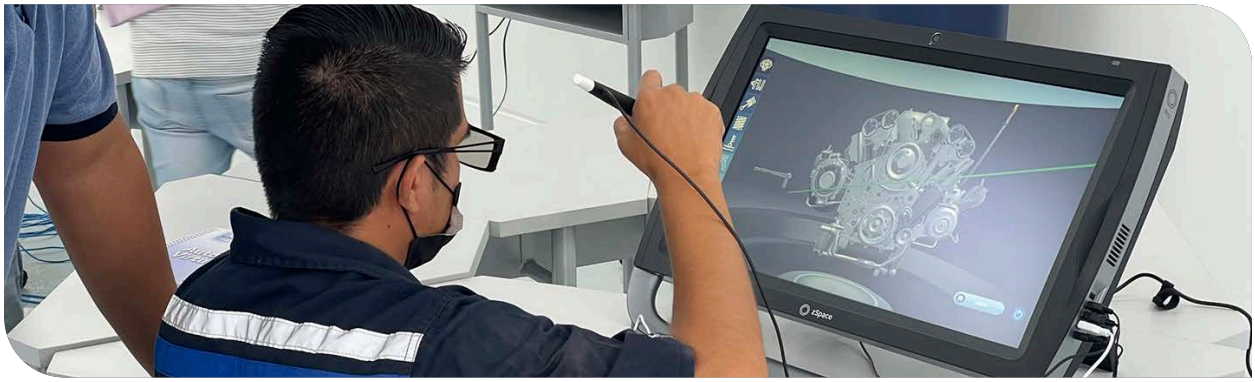
Odisha plans to foster a culture of creativity and technological advancement by enabling MSMEs to develop new products, improve processes, and enhance their value proposition (Detailed further in 'Research and knowledge-based economy' and 'Startup Odisha' chapters):

- **Expand the MSME policy** to provide comprehensive support for R&D, digital technology upgrades, and sustainability. Provide targeted subsidies and incentives for technology upgrades, like green energy adoption through group power purchasing and tax breaks for R&D activities
- **Establish focused innovation hubs and R&D funds for MSMEs** in technology-heavy sectors like semi-conductors and electricals, offering technical support, rapid prototyping and access to R&D facilities

3.2.3 Skill and workforce development

Odisha is planning the following interventions to improve productivity, reduce skill gaps, and enhance overall competitiveness of MSMEs:

- **Launch workshops and online courses** to improve MSMEs' access to critical information like Government schemes for MSMEs
- **Partner with corporate leaders** to run acceleration programmes fostering entrepreneurship skills for higher education students



[2] Micro Units Development and Refinance Agency

Further, the State is doing efforts to enable MSMEs to support large industries across the value chain, strengthening local supply chains and fostering economic resilience:

EXHIBIT 18.12

MSMEs can support large industries across the value chain

$:USD

Value chain	Raw material sourcing	Component and sub-assembly manufacturing	Manufacturing	Assembly/ packaging	Quality control	Distribution and supply chain	After-sales services[1]
1 **Petro-chemicals**		Chemical additives like catalysts, stabilisers	Niche products like specialty resins, polymers		Specialised testing labs for purity and composition analysis. E.g., GC-MS[2] tests	Logistic players	
2 **Plastic (PE, PP[3]) packaging, PVC[4] pipes**		Plastic caps, closures	Niche products like bio-degradeable plastic bags, customised sizes for pipes		Inspection services for material strength and durability		Local service providers assisting with PVC pipe installations
3 **Metal downstream products**		Cutting and slitting steel sheets, coiled rolled components	Niche products like custom metal stamping, casting services	Niche applications like packaging materials, specialised aluminium extrusions			
4 **White goods**		Wiring, plastics, electronic components, control knobs, hinges		Niche products like specialty kitchen appliances		Regional warehouses storing and distributing home appliances for domestic sales	Local service centres for installation and repair services

... similar mapping done for all opportunities

[1] Assumed wherever local supply chain will drive local consumption
[2] Gas Chromatography-Mass Spectrometry
[3] Polyethylene (PE) and Polypropylene (PP)
[4] Polyvinyl chloride

3.3 Establish a robust governance mechanism

The State will establish a governing council under the Hon'ble Chief Minister along with an expert council under the Chief Secretary, to play a central role in providing effective oversight, coordination, and execution of key initiatives and building State capacity and capability to drive the transformation. The council will be responsible for:

- **Project monitoring with robust escalation mechanism**, including set up of a digital dashboard to track real-time progress by the office of the Hon'ble Chief Minister and senior stakeholders
- **Assessing funding needs** for various projects, setting up innovative financing models such as fund-of-funds (FoF), facilitating access to capital for high-impact projects, and engage with corporate investors; incentivise sectors that achieve or exceed performance milestones
- Onboard a third-party to **disburse subsidy**, ensuring timely disbursements and issue resolution
- Constitute an expert advisory committee to **evaluate technological trends, identify potential partners, and assess e**, to recommend policy changes, and develop strategic initiatives. This ensures the State is prepared for advanced industries, and can foster a competitive and innovative manufacturing environment
- **Conducting quarterly cross-functional review meetings**, chaired by the Chief Secretary to align on policies, address issues, and streamline processes

3.4 Continue enhancing the 'Ease of Doing Business' in the State

The State may establish an inter-departmental Group of Ministers (GoM) led by the Hon'ble Chief Minister. The composition of the GoM could be determined by mapping relevant departments to Ease of Doing Business (EoDB) reforms, including key sectors such as Industries, MSME, Energy, Forest, Environment and Climate Change, Revenue, and Disaster Management, etc. Further, the State will:

- **Create a roadmap for enhancing EoDB** by baselining current performance of Odisha across key parameters. Conduct independent audits to evaluate EoDB effectiveness on ground, providing actionable recommendations and establishing benchmarks
- **Tailor reforms to specific sectors** (e.g., textiles, metals) with simplified licensing, subsidies, and faster permitting processes
- **Insitutionalise annual assessments of EoDB performance** through business surveys and benchmarking against best practices in other States and countries, ensuring continuous improvement
- **Establish a high-powered business dispute resolution committee** for speedy resolution of genuine cases involving the State Government, like the Commercial Courts set up in India's major cities
- **Promote deregulation** to create a more business-friendly environment and reduce bureaucratic hurdles
- **Advance decriminalization of compliance requirements** in line with the Jan Vishwas Bill to foster trust and ease of doing business
- **Implement government process re-engineering** and establish digital tracking systems for faster and more transparent project clearances
- **Launch initiatives to lower the cost of doing business**, with a strong focus on improving the speed and efficiency of business operations.

3.5 Create structured programmes to elevate the status of more than 30 lakh employees

A strategic framework for skill development and labour welfare is essential to ensure that Odisha's workforce is equipped to meet the demands of a rapidly evolving industrial landscape. The following interventions will be key to achieving this:

3.5.1 Skilling

- **Launch a skill gap-mapping study** to identify key skills related to prioritised opportunities and update the curriculum in collaboration with leading industrial players to address these gaps
- Expand the World Skills Centre and roll out large-scale programmes focused on sector-specific skills for both the existing and incoming workforce (Detailed in 'Skilled in Odisha, Skilling for the world' chapter)
- **Collaborate with leading higher education institutes** like Indian Institute of Management (IIM), Indian Institute of Technology (IIT), and National Institute of Technology (NIT), to set up sector-focused skilling courses and dual degrees, particularly in new-age industries like electric vehicles, electronics, and green energy equipment
- Implement policies that **incentivise workforce training and development**, such as subsidies and tax credits for companies investing in employee education

3.5.2 Labour welfare

- **Launch labour welfare initiatives** to focus on improving working conditions, providing health and safety training and ensuring fair / statutory wages and socail security for all workers
- **Support flexible work arrangements** through policies that promote such arrangements, enhancing work-life balance and increasing labour force participation across all demographics
- **Establish dedicated industrial parks for women-led businesses** across the state, offering **customized infrastructure** to support women entrepreneurs. Additionally, **launch a Women Entrepreneurship Cell** within the **Industrial Promotion & Investment Corporation of Odisha (IPICOL)** to **fast-track clearances** and provide **tailored services** for women entrepreneurs

4. Immediate actions

Odisha will focus on actioning the following key initiatives over the next 24 months:

EXHIBIT 18.13

1 Launch the 'Manufacturing mission' with a governing council under the Hon'ble Chief Minister

- **Clearly outline the specific roles and responsibilities of the governing body**, focusing on project management, investment promotion, progress monitoring, and de-bottlenecking key issues
- **Set up an executive council** under the Chief Secretary with skilled professionals and necessary resources, including technology and funding
- **Establish clear performance metrics and KPIs**[1] to ensure timely execution of planned investments
- **Launch dedicated efforts** to build State's capacity and capability to takeover the Mission and drive sustained transformation

2 Set up task forces for top three sectors contributing to 70% of increase in the manufacturing GSVA

- **Finalise top five priority opportunities** and identify projects for implementation, like acquiring strategic locations for industrial clusters. This should include timelines, budgets, and specific objectives
- **Estimate investment required for each opportunity** and study innovative finance models for targeted private outreach; organise investor roadshows and promotional events to attract anchor investors and highlight the benefits of investing in Odisha
- **Set up robust mechanisms for monitoring the progress of each project**, with regular reviews to ensure tracking of programme-level goals

3 Set up an EGoS[2] for enhancing the Ease of Doing Business (EoDB)

- **Map actions and mandates to departmental roles** to finalise the composition, including critical departments such as Finance, Industries, Labour & Employees State Insurance, etc.
- **Develop a detailed five-year roadmap** to improve Odisha's ease of doing business rating from sixth position to the top three in India
- **Set up an advisory council** with representatives from industry, Government, and MSMEs to regularly review and refine EoDB policies

4 Launch targeted, demand-linked skilling programmes

- **Map the current and future skill requirements** in collaboration with the Skilling Department for priority opportunities
- **Identify and partner with leading private sector companies**, educational institutions, and training providers to design curriculum and launch joint training programmes along with practical, hands-on training components
- **Provide financial incentives and subsidies** to encourage participation in training programmes, particularly for MSMEs
- **Implement mechanisms to track outcomes of the training programmes**, including job placements, skill improvements, and regular industry feedback

5 Update the 'Industrial Policy, 2022'

- **Conduct a comprehensive benchmarking of the existing industrial policy** to identify gaps, challenges, and areas for improvement
- **Engage with industry experts**, business leaders, and academic institutions to gather inputs and recommendations for the new policy
- **Conduct awareness campaigns** to inform businesses and investors about the new policy, its benefits, and how to avail the incentives offered
- **Develop a robust framework for implementing the new policy**, including clear guidelines, timelines, and responsible agencies

1. Key performance indicators
2. Empowered Group of Secretaries

CHAPTER 19

SERVICE SECTOR EXPANSION: DRIVING JOB GROWTH

Summary

The services sector in Odisha, valued at INR 263 lakh crore, currently contributes around 36% to its GSVA. Over the past decade, the sector has demonstrated a robust CAGR of 9% and now employs more than 58 lakh people. However, this contribution still lags India's services sector, which accounts for over 50% of the national GVA. **Significant corporate investments, totalling approximately INR 10 lakh crore in the past three years, along with the presence of premier institutes** such as AIIMS, IIT, NIT, and IIM, position the services sector as a pivotal driver for Odisha's economic growth.

The State aims to become a global leader in high-quality, value-added service exports, leveraging next-gen technologies to boost per capita incomes and meet future demands.

By 2047, the State envisions the following outcomes

- Increase the services sector's contribution to over 49% of the State's GSVA (in nominal terms, from the current 36%) by 2047, reaching around 42% by 2036
- Contribute more than 10% to India's service GVA by 2047 and 7% by 2036 (currently 2%)
- Champion at least 33% green commercial power consumption by 2036, reaching 50% by 2047, while maintaining competitive tariffs
- Increase employment in the sector by approximately 2.5 times and per capita income by seven times

Key initiatives to achieve the outcomes

To achieve these objectives, the State has identified over 30 strategic opportunities, categorised as follows:

- **High-skill, new-age opportunities** such as biotechnology, aerospace, and mineral research, etc. This includes promoting unique services in Odisha, such as drone operations for agriculture and mining, and specialised elderly care services to meet changing demographic needs
- **Low-skill, high-demand opportunities** like banking, nursing, and gig-economy roles, including e-commerce delivery and personal care services, ensuring wide accessibility and participation

Out of these, Odisha is expected to capture more than 60% of the value from the following six opportunities:

- **Odisha's 'Financial technology and knowledge' (FINTEK) city** in Bhubaneswar serving as a nucleus for international banking, insurance, and fintech services
- **Five state-of-the-art Global Capability Centre (GCC) hubs**, starting with Bhubaneswar-Cuttack-Puri-Paradip and Bargarh-Jharsuguda-Sambalpur economic regions, to cater to the burgeoning demand for IT, finance, and customer services outsourcing
- **Two Edu-cities in Sambalpur and Bhubaneswar and one Medi-city in Cuttack** catering to domestic and international markets
- **Network of international data centres in Bhubaneswar-Cuttack-Puri-Paradip Economic Region (BCPPER)** with undersea landing station in Puri and of Tier-IV data centres in Rourkela and Bargarh-Jharsuguda-Sambalpur tri-city providing high-tech infrastructure for IT/ITeS industries
- **Regional hub for aviation services**, supporting logistics, training, and innovation
- **Global knowledge hub** for green steel and sustainable mineral practices

Across these, the State will undertake six targeted interventions: Development of large industrial parks with anchor investors, launching of market-linked initiatives, integration of startup and MSME ecosystem, targeted skilling and job bank creation, formulation of sector-specific policies, and State capacity enhancement

Over the next 24 months, the State will

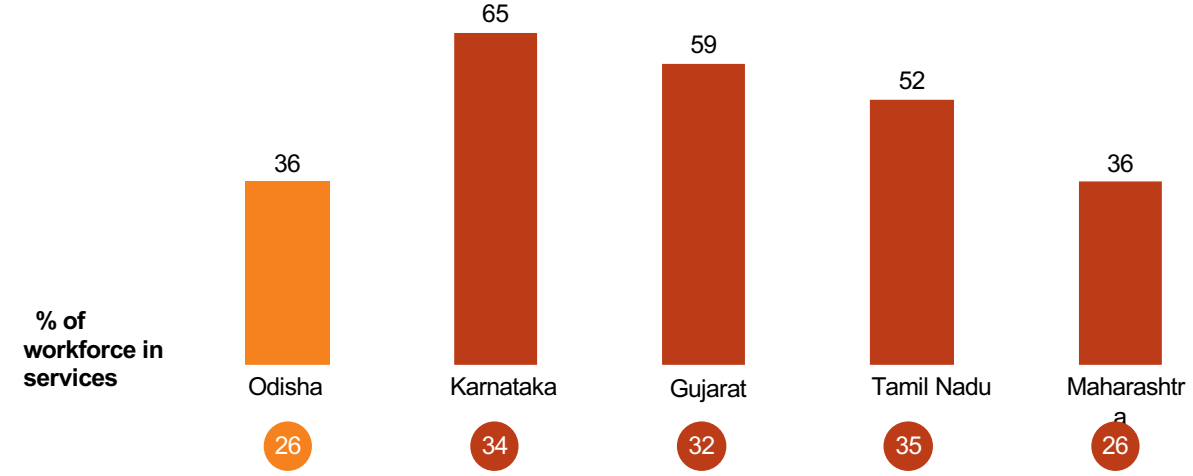
- **Empower the Electronics and Information Technology Department** through the necessary legislative framework and resource mobilisation to expand its mandate to cover the entire services sector, with the Principal Secretary serving as the nodal officer
- **Onboard anchor investors for priority parks such as GCC hubs and data centres,** through targeted promotions and development of support infrastructure like R&D facilities and world-class townships, etc.; organise investment roadshows in key domestic and international markets
- **Form an inter-departmental task force** under the Chief Secretary and with a professional CEO to projectise and set programme-level goals and funding estimations for priority sectors
- **Identify skill gaps to update curricula in professional courses** and launch new skilling programmes in collaboration with the corporate sector
- **Conduct a benchmarking exercise to launch specific policies** on data centres and emerging technologies, etc., and update existing policies like the State's IT Policy

1. Context

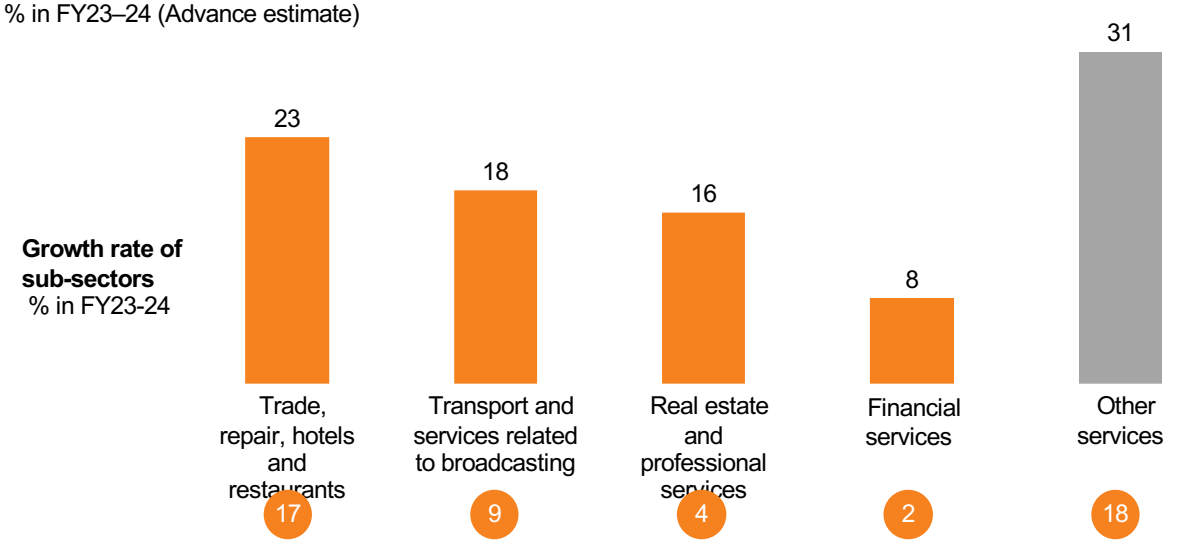
The State is rapidly establishing itself as a significant player in India's service sector, showcasing robust growth of 9% CAGR over the past three years. The sector employs 26% of the State's workforce and contributes approximately 36% to the GSVA. Additionally, the trade, repair, and hotels sub-sector in Odisha is particularly noteworthy, contributing 23% to the service GSVA and expanding at an impressive rate of 17% last year. While substantial, this contribution is lower compared to high per capita income States like Karnataka, where 34% of the workforce generates 65% of the State's GSVA:

EXHIBIT 19.1

Share of services sector in the State GSVA,
% in FY23–24



Contribution of sub-sectors in services GSVA Odisha,
% in FY23–24 (Advance estimate)

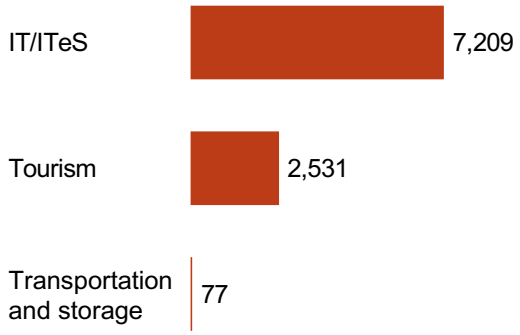


Source: Periodic Labour Force Survey, 2022–23, MoSPI, Government of India, Directorate of Economics and Statistics, Government of Odisha

To further propel this growth, Odisha has introduced several industry-friendly policies, including the IT Policy 2022, Data Centre Policy 2022, Business Process Outsourcing (BPO) Policy 2021, and Electronics Policy 2021. These initiatives have attracted almost INR 10k crore worth of investments, with 73% from IT/ITeS companies including major players such as IBM, Cognizant, Accenture, and EY (detailed below):

EXHIBIT 19.2

Private sector investments in services sector FY22–24 (INR Cr.)



IT/ITeS

Data centres

Tourism

SNM Hotel and Resorts

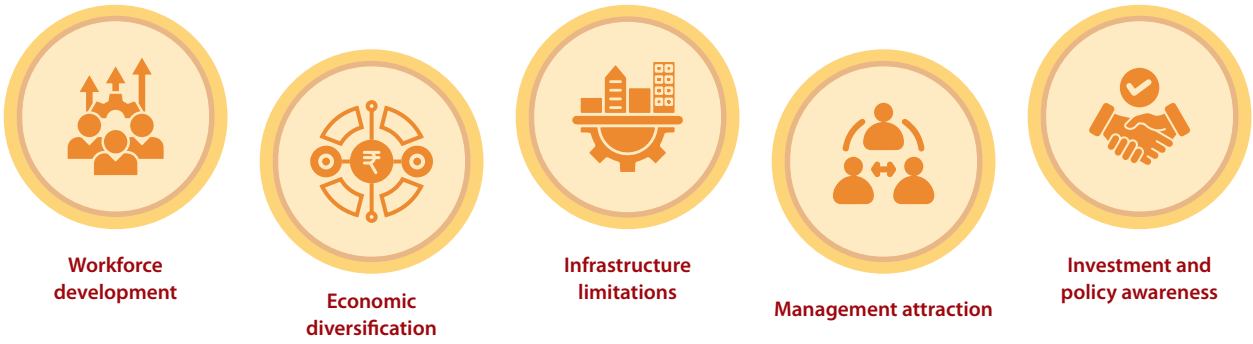
Bhubaneswar, the State capital, alone has witnessed a remarkable influx of over 50 new IT companies in the last four years, positioning the city at the forefront of India's tech revolution. Alongside established giants like Infosys, TCS, and Wipro, etc., Bhubaneswar now hosts a variety of innovative startups and global corporations, drawn by its conducive business environment, skilled workforce, and robust infrastructure, underscoring its emergence as a vibrant technology hub.

Additionally, Odisha is making significant investments in skilling its youth. The State has allocated INR 500 crore under the NUA Odisha initiative to train young people in future technologies like cloud computing, artificial intelligence, and data sciences.

1.1 Key challenges

Despite its rapid growth, the services sector faces several challenges such as skill gaps, infrastructure limitations, and global competition (Exhibit 19.3). Addressing these hurdles is crucial for increasing growth and ensuring Odisha's competitive edge.

EXHIBIT 19.3



- **Workforce development**: Equipping the workforce with necessary skills in emerging technologies is vital for progress
- **Economic diversification**: Expanding the service sector to embrace a wider variety of industries will help foster long-term, sustainable growth
- **Infrastructure limitations**: More ready-to-use infrastructure and quality social amenities like hospitals and educational facilities can be developed in Tier-II and Tier-III cities to ensure equitable growth. Concentrated development in and around Bhubaneswar leads to:
  - Regional imbalances with Bhubaneswar being the main hub, while other cities
  - Infrastructural and land saturation around Bhubaneswar restricting further expansion, while driving prices upward
- **Management attraction**: Attracting mid-level management to Odisha is challenging due to limited social infrastructure and perceived constraints on career advancement opportunities in the State
- **Investment and policy awareness**: More investor awareness and visibility needs to be created. For example, major projects such as Reserve Bank of India's (RBI) investment in data centres in Odisha needs to be highlighted more extensively

1.2 Key trends

The global services sector is undergoing a transformative shift, driven by advancements in technology, evolving work models, and a growing emphasis on sustainability. Some of the key trends Odisha can learn from include:

EXHIBIT 19.4

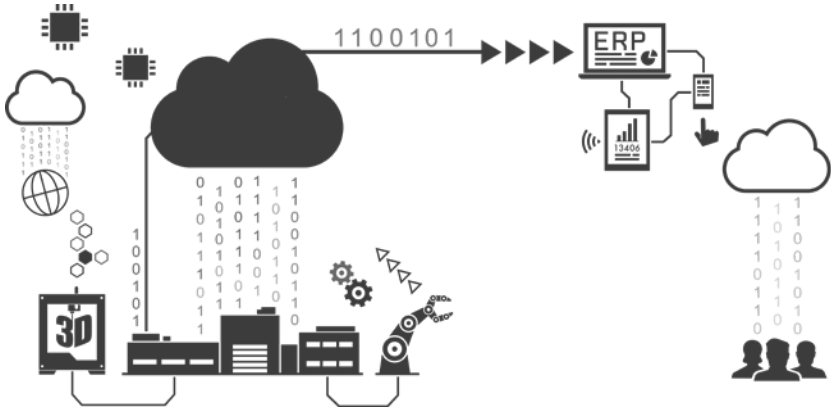
Digital transformation and 'Industry 4.0': The services sector is rapidly integrating AI/ML[1] and automation to enhance efficiency and reduce costs. As an industry-focused State, adopting technology-driven solutions for Industry 4.0 will be pivotal for Odisha's growth

Gig and freelance economy expansion: Flexible and short-term work arrangements are reshaping the industry. India's gig economy is projected to reach 23.5 million workers by 2030 (NITI Aayog), underscoring its rising significance

E-commerce and digital payments: The rise of e-commerce has fueled demand for logistics, warehousing, and digital payment services. Services linked to e-commerce now contribute around 9% of India's GDP. Additionally, UPI transactions in India surpassed 1,800 crore per month in 2023, solidifying its role as a cornerstone of the digital economy

Sustainability and green services: The global green services market is projected to grow at a CAGR of 23% from 2023 to 2030, highlighting the increasing focus on sustainable and environment-friendly services

Remote work and virtual services: The shift to remote work has accelerated the growth of virtual services, including online education and virtual events, transforming traditional service delivery models



[1] Artificial intelligence, machine learning

2. Vision and outcomes

The services sector, contributing over 53% to India's GDP in 2023, has solidified the country's position as a global leader in service exports, with IT giants like Infosys and Tata Consultancy Services (TCS) driving software exports to USD 322 billion. This growth highlights India's adaptability, innovation, and job creation potential. Odisha draws inspiration from this success by leveraging technology, fostering innovation, and creating jobs to establish itself as a hub for high-value services.

EXHIBIT 19.5

VISION 2047

To become a global leader in high-quality, value-added service exports, leveraging next-gen technologies to boost per capita incomes and meet future demands

To achieve this Vision, the State will track the following key outcomes:

EXHIBIT 19.6

Key outcomes	Unit	Current	2029	2036	2047
Contribution to India services GVA[1]	%	2%	4%	7%	10%
Contribution to India's services exports[2]	%	<1%	2%	4%	>5%
Contribution to Odisha's GSVA[3] (nominal)	%	36%	38%	42%	49%
Per capita income (nominal)[4]	INR lakh	1.8	3.2	9.0	32.3
Major services parks in Odisha	Nos.	1	3	5	7
Commercial power consumption from green sources	%	<7%	10%	33%	50%

2.1 Growth aspirations for the services sector in Odisha

While Odisha has demonstrated significant growth in services in recent years, achieving 8% CAGR over the last three years, its 12-year growth trajectory of 5.5% indicates that sustained, focused interventions are needed to maintain the momentum. Additionally, its services GSVA still trails behind other major States in absolute terms. For instance, Tamil Nadu's tertiary GSVA is four times, Karnataka's is five times, and Maharashtra's is eight times of Odisha's current absolute numbers.

The State recognises that enhancing the services sector's share in the economy can drive value-added activities, foster innovation, and attract global investments, thereby creating a virtuous cycle of economic growth. By 2047, Odisha aims for a 10% CAGR in its services sector, aspiring to achieve an estimated INR 74 lakh crore in services GSVA (in nominal terms) and contributing around 49% to the State's GSVA (Exhibit 19.7). This expansion, alongside a 1.5 to 2-fold increase in employment, could unlock substantial value, cementing the State's role as a leading hub for high-value services in India.

[1] Maharashtra – 17%, Karnataka – 12% (Ministry of Statistics and Programme Implementation (MoSPI), Government of India

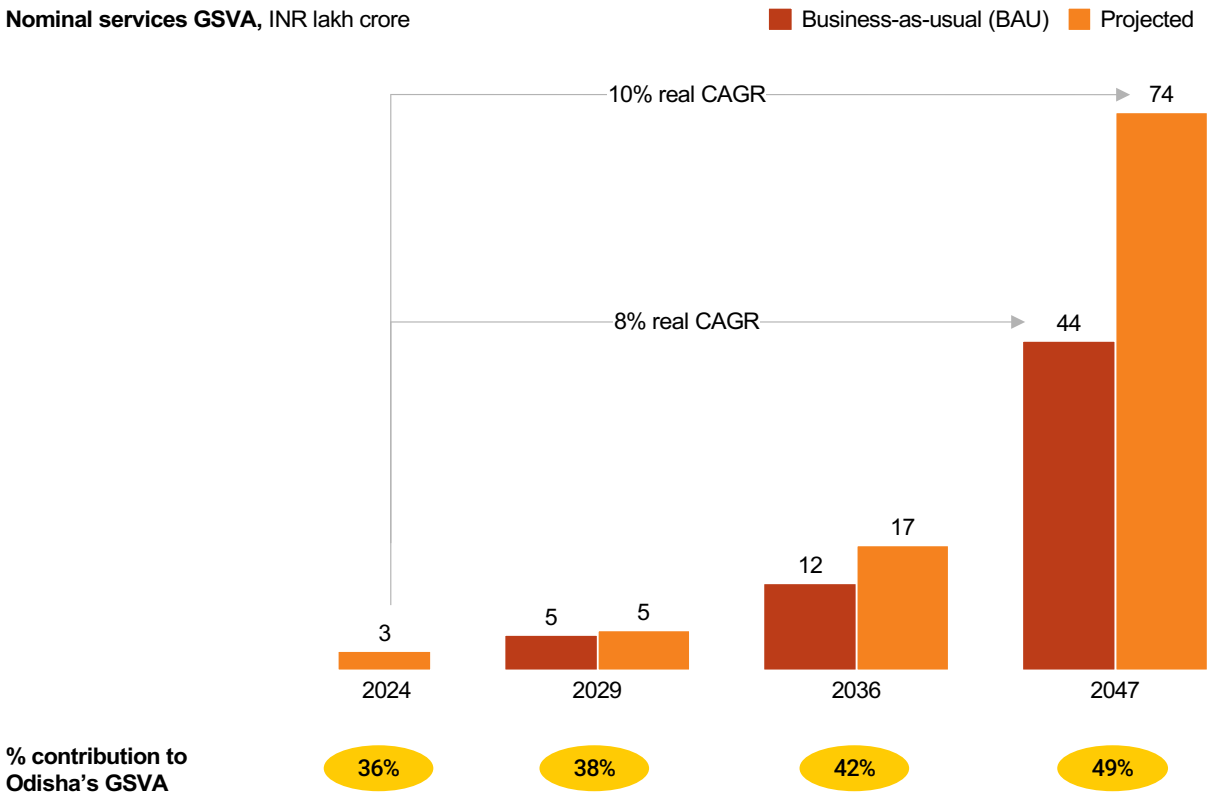
[2] Karnataka – 27%, Tamil Nadu – 18% (Ministry of Commerce and Industry, Government of India)

[3] India – 55%, Karnataka – 65%, Tamil Nadu – 52% (NITI Aayog, MoSPI)

[4] India – INR 2.3 lakhs, Karnataka – INR 3 lakhs (International Monetary Fund)

EXHIBIT 19.7

Odisha, with dedicated efforts, can capture almost twice the value from services in projected scenario vs. business-as-usual (BAU)



2.2 Illustrative prioritisation of opportunities across focus sectors

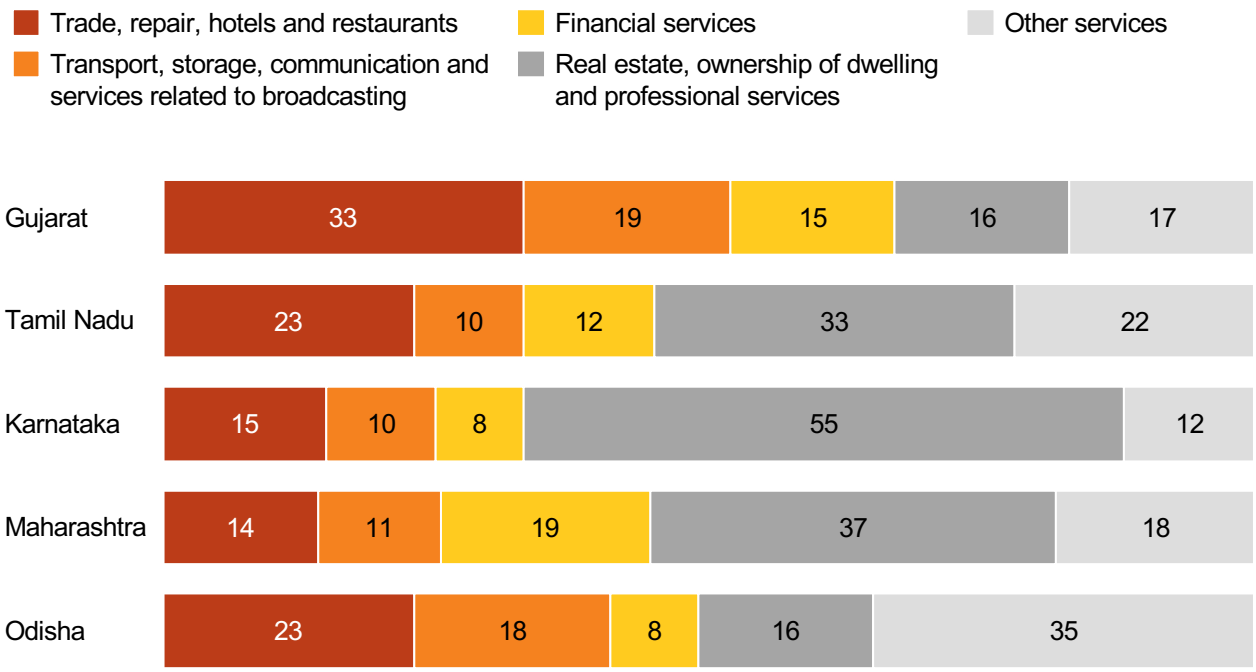
To achieve an ambitious goal of achieving an INR 74 lakh crore nominal GSVA from the services sector, the State must strategically focus on select industries. Based on the national best practices and State's unique endowments, Odisha's path to an elevated service GSVA will predominantly hinge on three core service sectors:

- **Financial services**: Encompassing banking, insurance, and related financial activities, this sector holds substantial potential. Currently, Odisha's financial services contributes just 8% to its GSVA, whereas Maharashtra's stands at 19% and Gujarat's at 15%
- **Real estate, ownership of dwelling, and professional services**: This sector, including IT/ITeS, software development, and cybersecurity, is poised for exponential growth. Odisha's current GSVA share of the sector at 16% starkly contrasts with Maharashtra's 37% and Karnataka's 55%
- **Trade, repair, hotels, and restaurants**: This sector, integral to tourism and retail and already growing at the fastest rate in the State, currently constitutes 23% of Odisha's GSVA, compared to Gujarat's 33%. Enhancing infrastructure, promoting tourism, and supporting local businesses will be crucial in maximising this sector's potential

EXHIBIT 19.8

Split of key service sectors for top per-capita income States in India

GSVA (2022–23), %



Odisha's service sector split is expected to shift

Nominal GSVA, INR lakh crore

	Trade, repair, hotels and restaurants	Transport, storage, communication and services related to broadcasting	Financial services	Real estate, ownership of dwelling and professional services	Other services
Split, % **Current**	23%	18%	8%	16%	35%
Split, % **2047**	25%	18%	10%	23%	24%
CAGR, %	11-12%	10-11%	11-12%	11-13%	7-8%

2.2.1 Sub-sector mapping and prioritisation

The State conducted a comprehensive mapping of approximately 40 sub-sectors under six broad categories, emphasising:

- **Right to win**: Leveraging existing endowments including educational institutions, corporate investments, and potential demand areas
- **Favourable trends**: Aligning with domestic and global growth trajectories and national priorities

Based on this, the State has prioritised 15 sub-sectors under two buckets:

EXHIBIT 19.9

Service sector	High-skill sub-sectors	High-employment sub-sectors
Trade, repair, hotels and restaurants	-	8. Tourism and hospitality (including restaurants) 9. Retail trade and e-commerce 10. Repair and maintenance services
Transport, storage, communica-tion and services related to broadcasting	1. Air transport-related services (passenger, helicopter, and cargo)	11. Services incidental to transport (e.g., taxi operators)
Financial services	2. Advanced financial services and fintech	-
Real estate, ownership of dwellings and professional services	3. Information Technology (IT)/ IT-enabled Services (ITeS) 4. Software and cybersecurity services 5. Real estate development and management 6. Research and development in emerging technologies	12. Construction services
Other services	7. Specialised healthcare services	13. Education and vocational training 14. Healthcare and care-giving services 15. Arts, entertainment and recreation

The strategic prioritisation of these service sectors and sub-sectors will not only elevate Odisha's GSVA but also foster an inclusive growth – generating employment and enhancing per capita income.

2.2.2 Opportunity mapping and prioritisation

Further, across these 15 sub-sectors, the State has identified 33 specific service opportunities for focused efforts:

EXHIBIT 19.10

33 opportunities identified for focused interventions

Retail trade and e-commerce

1. Gig Economy – Delivery of online purchases, e-commerce, mobile food vendors

Tourism and hospitality (including restaurants)

2. Restaurants and cafes operations

Repair and maintenance services

3. Maintenance, repair, and operations (MRO) services
4. Green energy related services (e.g., high-end electricians, installation of rooftop solar panels)

Air transport-related services

5. Passenger air transport including crew, ground level services
6. Freight air transport services including cargo handling
7. Launching of satellites and space vehicles and space transport
8. GIS engineer
9. Training of employees and operation of flying schools

Services incidental to transport

10. Gig economy – Cab drivers/ chauffeurs, metro operators

Advanced financial services and fintech

11. Banking and insurance
12. New tech-related – fintech, insuretech

IT/ITeS

13. IT/ ITeS, including artiffic
14. Data centres
15. Business process management – Knowledge processing

Software and cybersecurity services

16. Computer programming
17. Software including installation
18. Cybersecurity

Research and development in emerging technologies

19. Biotech including marine technology and forest-related research
20. Aerospace and defence related research
21. Minerals and metal downstream related research

Real estate management and construction services

22. Buying, selling, renting and brokering in major cities
23. High-end construction services

Arts, entertainment and recreation

24. Creative, arts and entertainment activities
25. Libraries, archives, museums and other cultural activities
26. Sports activities, sports infrastructure-as-a-service, and recreation activities

Education and vocational training

27. Education providers
28. Educational support services (e.g., educational consulting, guidance counselling services, testing evaluation services)

Healthcare and care-giving services

29. Hospital Activities including nurses
30. Other human health activities (Ayurveda, Homeopaths, masseurs, physiotherapists or other para-medical practitioners)
31. Residential care activities for the elderly and disabled

Others

32. Gig economy – Hairdressing and other beauty treatment, general household maintenance activities like grooming of the floor, dusting, cleaning of utensils)
33. Drone operators for mining and agriculture

[1] Geographic information system

2.3 Leading the way in services transformation

The Government of Odisha envisions a transformative journey to establish the State as a global hub for high-value services, by leveraging its strategic advantages, policy initiatives, and visionary leadership. Aligned with India's aspirations to become a developed economy by 2047, the State is dedicated to fostering innovation, sustainability, and inclusive growth through targeted interventions in priority sectors (as outlined in the section 2.2. above).

Out of the 33 opportunities identified, the State has identified and prioritised six that can drive around 60% of the total sectoral value. Hence, Odisha will take a strategic and focused approach across these to achieve its ambitious Vision:

EXHIBIT 19.11

Six priority programmes to help Odisha transform its service sector

01

FINTEK[2] City, Bhubaneswar

INR 1 lakh crore
annual GVA addition by 2047

02

Leading data centre hub

INR 10k crore
investments by 2036

03

Five Global Capacity Centre hubs

2+ lakh professional employment by 2047

04

Aviation and allied services

INR 5k crore
annual revenues by 2047

05

Edu-city and Medi-city

1+ lakh jobs by 2047;
~20% contribution of medical tourism to State tourism

06

Knowledge hub for steel and minerals

INR 50k crore
in annual value-added mineral exports

[2] Financial, insurance technology and knowledge city

2.3.1 Odisha's FINTEK city: Gateway to financial excellence

Odisha is poised to create an integrated 'Financial, insurance technology and knowledge' (FINTEK) City in Bhubaneswar, serving as a nucleus for international banking, insurance, and fintech services. This initiative aligns with India's aspiration to dominate the global financial services landscape and harnesses the State's burgeoning IT ecosystem.

Objective: **To establish Odisha as the Eastern India hub for global financial services and innovation**

Key features

- **Improved ease of doing business (EoDB)**: Build economic zones with designated land banks, special incentives, single-window clearances, world-class infrastructure and robust supporting policies such as on cybersecurity, to enhance attractiveness and global trust in the new city
- **World-class infrastructure**: Ensure robust global and domestic connectivity through digital infrastructure like mobile and broadband
- **Digital financial ecosystem**: Integrate artificial intelligence (AI), blockchain, and data analytics to drive innovation in banking and payment systems
- **Global technology centre and innovation hub**: Focus on the development and translation of innovative technologies, alongside implementing techno-preneurship programmes for students, to foster the growth of cutting-edge solutions and entrepreneurial skills
- **Global outreach**: Partner with national and global banks and financial institutions to position Odisha as a global financial service exporter and service backbone for the world; host cluster events and roadshows in key areas like Bhubaneswar to expand investment outreach
- **Governance**: Establish a facilitation agency to promote investments and provide regulatory oversight

Anticipated impact

- **Economic contribution**: At least INR 1 lakh crore annual addition to GSVA by 2047
- **Employment generation**: Over 50,000 high-paying jobs created in financial technology and services
- **Skill development**: Forge strong industry-academia connect to establish specialised academies, training 10,000 professionals annually in financial technologies and analytics

2.3.2. Data centres: Backbone of Odisha's digital economy

Recognising the critical role of data in the modern economy, Odisha will develop a network of:

- **International data centres** in Bhubaneswar-Cuttack-Puri-Paradip Economic Region (BCPPER) with undersea landing station in Puri
- **Tier-IV data centres** in Sambalpur-Jharsuguda-Rourkela tri-city, providing high-tech infrastructure for IT/ITeS industries

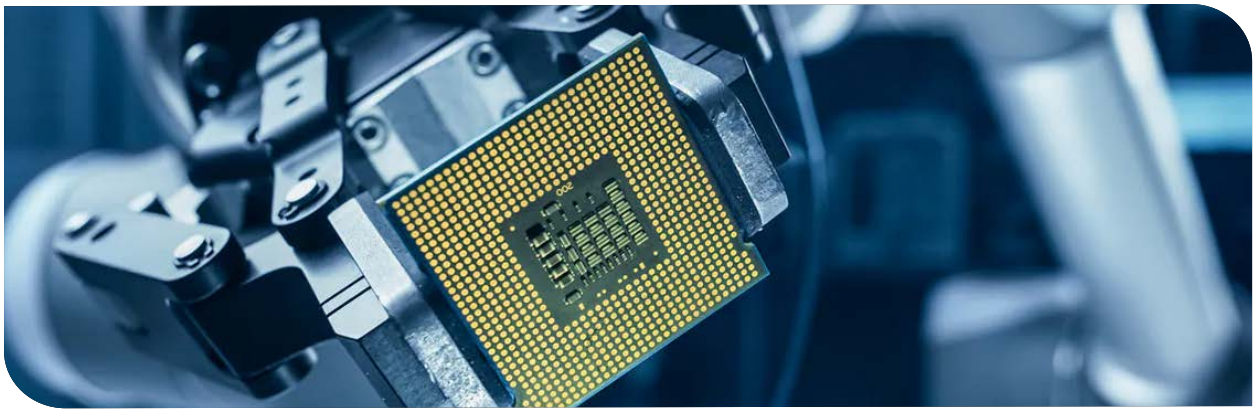
Objective: **To position Odisha as a leading destination for data centre investments and digital infrastructure**

Key features

- **Plug-and-play model**:
  - Develop ready-to-use facilities offering scalable solutions for global and domestic IT companies
  - Facilitate setting up of an under-sea cable landing station in coastal areas of Odisha to attract large, multi-national data centres
  - Launch interventions to increase the penetration of edge data centres in land-locked towns, especially in Tier-II cities
- **Green energy integration**: Cover at least 33% of energy needs through renewable sources by 2036 and 50% by 2047
- **Cybersecurity and compliance**: Adhere to global standards to ensure data safety and operational reliability

Anticipated impact

- **Investment magnet**: More than INR 10,000 crore in data centre investments by 2036
- **Employment opportunities**: At least 25,000 jobs in data management, cybersecurity, and analytics
- **Economic resilience**: Establish Odisha as a critical node in India's digital economy



2.3.3. Global Capability Centres (GCCs): Powering India's IT growth

Odisha will develop five state-of-the-art GCC hubs with skilled workforce and robust IT infrastructure, starting with Bhubaneswar-Cuttack-Puri-Paradip quad-city region and Sambalpur-Jharsuguda-Rourkela to cater to the burgeoning demand for IT, finance, and customer services outsourcing.

Objective: **To position Odisha as the foremost destination for GCCs in East India**

Key features

- **Physical infrastructure**: Develop plug-and-play office spaces with integrated high-speed data connectivity, electricity availability, air-transport connectivity and co-working facilities, etc.
- **Incentives for corporations**: Provide tax holidays, subsidised power, and support for workforce training to attract global giants like Google, Microsoft, Nvidia, and Apple, etc.
- **Localised ecosystem**: Collaborate with local startups and MSMEs to foster innovation and build resilient supply chains
- **Talent availability**: Ensure a robust talent pool supported by top educational institutions and skilling centres, providing highly skilled, plug-and-play workers ready for diverse functions; strengthen further by local startup incubators, university partnerships, and targeted skilling initiatives in digital competencies, including knowledge services-specific training such as language proficiency
- **Innovation and R&D:** Promote research and development in high-value services such as product design, engineering solutions, and software development

Anticipated impact

- **Investment attraction**: More than INR 25,000 crore in investments by 2047
- **Job creation**: At least two lakh professionals employed across the State, boosting Odisha's economic inclusion
- **Export contribution**: Significant enhancement of Odisha's service exports, contributing to national goals

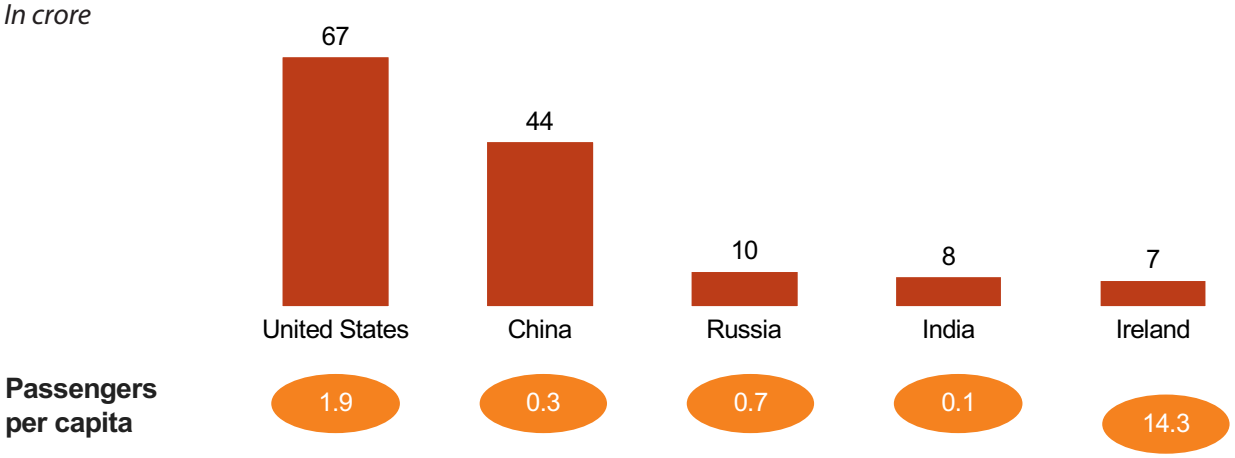
2.3.4. Aviation and allied services: Empowering regional connectivity

India's aviation sector, while currently handling lower passenger traffic than developed countries (Exhibit 19.11), is poised for rapid growth due to its expanding economy and burgeoning middle class, reaching 52 crore passengers annually by 2037.

EXHIBIT 19.12

Total air passenger traffic for the top five countries in the world, 2021[1]

In crore



This rapid growth necessitates a substantial increase in the aviation workforce. The Ministry of Civil Aviation, Government of India estimates that the sector will require an additional 10 lakh skilled workers by 2035 to meet the rising demand for pilots, cabin crew, ground staff, and maintenance personnel.

Odisha, with its strategic location and growing aviation infrastructure, is well-positioned to capture this demand. The State aims to establish a thriving ecosystem for aviation services, including maintenance, repair, and overhaul (MRO) facilities and drone-based solutions, leveraging its unique advantages to contribute significantly to the nation's aviation sector.

Objective: **To develop Odisha as a regional hub for aviation services, supporting logistics, training, and innovation**

Key features

- **Pilot and drone training**: Build academies across Bhubaneswar and Jharsuguda to address the growing demand for skilled aviation professionals
- **Maintenance, repair, and operations (MRO) facilities**: Development of state-of-the-art facilities to serve regional airlines and logistics providers
- **Agri-tech and mining solutions**: Drone-enabled services for precision agriculture and efficient mining operations

[1] World Population Review, 2021

Anticipated impact

- **Revenue growth**: Over INR 5,000 crore annual revenue from aviation-related services by 2047
- **Skilled workforce**: At least 10,000 aviation professionals trained annually
- **Regional connectivity**: Strengthen Odisha's logistics capabilities and e-commerce ecosystem

2.3.5. Edu-city and Medi-city: Building foundations of knowledge and health

The Government of Odisha envisions creating two Edu-cities in Sambalpur and Bhubaneswar and one Medi-city in Cuttack, leveraging its strong institutional base and commitment to human capital development. These hubs will drive knowledge-intensive growth, catering to domestic and international markets (Detailed in the chapter 'Urbanisation as a growth engine').

Objective: **To establish Odisha as a regional hub for education and healthcare excellence**

Key features

- **Edu-cities in Sambalpur and Bhubaneswar**: Develop a multi-disciplinary education hub with world-class universities, R&D centres, and vocational training institutes, to contribute to a major share of the target 50,000 foreign students by 2047 (Detailed in the chapter 'World-class higher education')
- **Medi-city in Cuttack**: Establish a healthcare ecosystem encompassing super-speciality hospitals, medical research facilities, and telemedicine services, to become a hub for attracting 20% of the State's tourist footfall, including from other Eastern and North-Eastern States
- **Skill enhancement programmes**: Launch initiatives to train healthcare and educational professionals in emerging technologies and practices

Anticipated impact

- **Healthcare accessibility**: Enhanced healthcare delivery to underserved regions through telemedicine and outreach programmes and major medical tourism
- **Knowledge economy**: Creation of more than one lakh jobs in teaching, research, and healthcare services
- **Economic contribution**: Over INR 15,000 crore investment in infrastructure and service development

3.4.6. Knowledge hub for steel and minerals

With Odisha's vast mineral wealth, the State aims to lead the global shift towards environmentally sustainable mining and steel production (Detailed further in the chapter 'Harnessing Mineral Wealth').

Objective: **To establish Odisha as a global leader in green steel and sustainable mineral practices**

Key features

- **Green steel innovation**: Build R&D centres in Rourkela focusing on low-carbon production techniques, with the State Government investing INR 500 crore over a period of five years to kick-start the research
- **Value-added processing**: Develop facilities for refining and processing minerals to maximise export potential
- **Industry-academia collaboration**: Partner with institutions like Indian Institute of Technology (IIT), Bhubaneswar and National Institute of Technology (NIT), Rourkela to drive technological advancements

Anticipated impact

- **Export leadership**: Over INR 50,000 crore in annual value-added mineral exports
- **Employment boost**: More than one lakh jobs created in manufacturing and allied industries
- **Sustainability leadership**: Set benchmarks in Environmental, Social, and Governance (ESG) compliance and green manufacturing

3.4.7. Green energy and sustainable practices

Odisha will position itself as a pioneer in renewable energy services, catering to both domestic and international markets while ensuring sustainable growth.

Objective: **To lead India's transition to a green economy by fostering renewable energy services and ESG[3]-driven practices**

Key features

- **Renewable energy hubs**: Develop solar and wind energy parks in Western Odisha
- **Export clusters**: Establish specialised facilities for manufacturing green energy equipment
- **ESG[3] integration**: Launch mandatory frameworks for all major industrial projects to align with global sustainability standards

Anticipated impact

- **Green job creation**: Over 75,000 jobs in renewable energy and ESG[3] compliance services
- **Energy self-reliance**: Achieve at least 50% green energy consumption in Odisha's services sector by 2047
- **Global recognition**: Establish Odisha as a leader in green energy innovation and exports

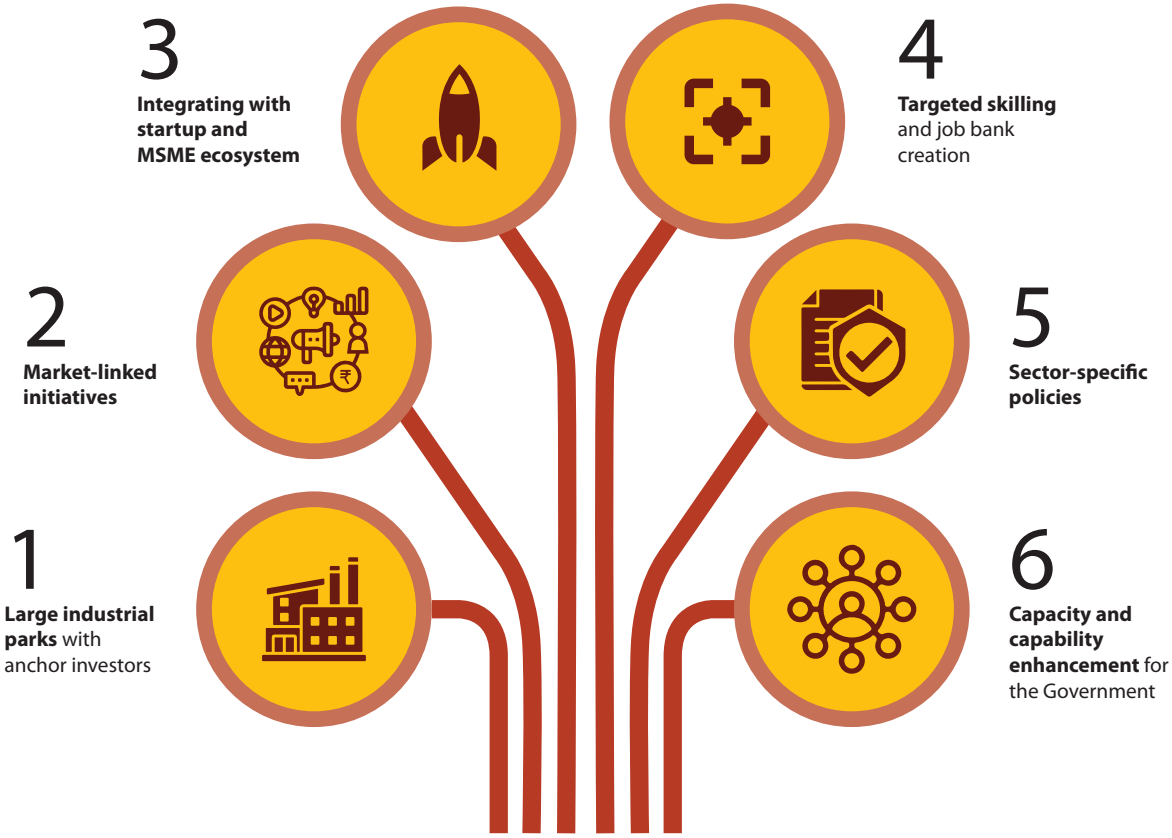
The Government of Odisha is resolutely committed to transforming the State into a global hub for high-value, sustainable, and inclusive services. By strategically focusing on these priority sectors, Odisha will not only contribute significantly to India's economic growth but also set new benchmarks in innovation, sustainability, and regional development.

[3] Environmental, Social, and Governance

3. Key initiatives

By focusing on 15 pivotal sub-sectors and implementing 33 service opportunities (Exhibit 19.10), the State aims to drive comprehensive development, foster innovation, and ensure sustainability. Odisha can achieve its ambitious Vision through a series of targeted initiatives across all the opportunities:

EXHIBIT 19.13



3.1 Large industrial parks with anchor investors

Integrating infrastructure, utilities, and worker amenities within parks enhances productivity and global competitiveness – critical for large industries like IT/ITeS, and research on emerging technologies, etc. To attract large anchor investors (detailed further in 'Industries' chapter), the State along with corporate investors, will:

3.1.1 Build industrial parks with high-quality infrastructure in strategic locations, expanding on the 'Info-City, Bhubaneswar model'

- Identify and acquire land for priority opportunities in IT and emerging technologies to build large industrial parks (more than 1,000 acres) housing ready-to-use infrastructure and utilities for investors, multi-modal logistic parks, and skilling centres, etc.
- Provide tax breaks and incentives like deferred payments linked with investment and employment to attract top anchor investors in the park and promote local talent hiring

3.1.2 Ensure world-class urban townships within or near industrial parks with integrated residential areas, healthcare, education, and recreational facilities (detailed in the chapter 'Urbanisation as a growth engine')

3.2 Market-linked initiatives

Strong market linkages are essential for industries to access global markets, boost competitiveness, and strengthen exports. To achieve this, the State will undertake a multi-faceted approach to enhance connectivity, promote products and services, and enable industries to thrive on a global scale:

3.2.1 Organise and participate in regular trade fairs and summits

- Strengthen the 'Invest Odisha Conclave' by introducing pavilions for emerging services sectors such as IT, green energy, and data centres, enabling sector-specific networking and investment
- Host and participate in national and international trade fairs with specific themes (e.g., 'Odisha IT Export Week', and 'Odisha Green Energy Summit') to attract niche investors and buyers
- Conduct roadshows in target markets to showcase the investment potential and growth opportunities in the service sector of Odisha
- Partner with international trade organisations to promote business-to-business (B2B) matchmaking events, enabling local businesses to connect with global buyers and suppliers

3.2.2 Foster Government-to-Government partnerships (G2G) to open new markets

- Develop bilateral agreements with high-potential markets in Southeast Asia, Europe, USA and Africa, focusing on key exports such as IT/ITeS
- Collaborate with Indian embassies and global trade bodies to promote the State's capabilities and forge international partnerships in target sectors like fintech, renewable energy, and aerospace

3.2.3 Create an 'Export Promotion Council' to streamline export-related processes, offer advisory services, and help businesses navigate complex international trade regulations

- Develop an export readiness programme for MSMEs to equip them with skills in compliance, market research, and global certifications
- Provide grants and subsidies to exporters for participation in international exhibitions and to meet global standards like International Organisation for Standardisation (ISO) and Hazard Analysis Critical Control Point (HACCP) certifications
- Utilise digital platforms to build an 'Export knowledge portal' offering resources like tariff calculators, trade policy updates, and market intelligence

Additionally, the State will develop some of the industrial parks, as identified in 3.1.1, as export clusters with specialised infrastructure and policy support to enhance efficiency and scale.

3.3 Integrating with startup and MSME ecosystem

A thriving entrepreneurial ecosystem accelerates industrial innovation and strengthens supply chains across key sectors. To accelerate launch of startups and MSMEs[4] (detailed further in chapters 'Industries' and 'Startup Odisha'), the State will:

3.3.1 Establish district-level innovation hubs focusing on target sectors (e.g., Agritech in rural zones, IT/ITeS in and around Bhubaneswar) to incubate more than 100 startups every year

- Offer subsidised office space, prototype development support, and testing facilities
- Expand the 'State innovation fund', seeding innovative ventures founded by anyone – including, youth, self-help groups, and MSME owners, etc.
- Provide tax holidays for 3–5 years to tech-driven startups or MSMEs in early growth phases, funded by the innovation hub

[4] Micro, Small and Medium Enterprises

Case study: South Korea's Creative Economy Innovation Centres (CEICs)

Launched in 2014, the initiative aimed to boost South Korea's competitiveness in global innovation and reduce reliance on traditional conglomerates (chaebols). To achieve this, the country invested in:

- Setting up of 17 CEICs across South Korea, each tailored to the region's key industries (e.g., biotech in Daejeon, information technology in Seoul, agriculture in Jeonju) and funded by the Government and conglomerates like Samsung, LG, Hyundai, and the SK Group
- Providing access to seed funding, venture capital connections, and Government grants, totalling USD 1.2 billion by 2020, while matching industry mentors from sponsoring companies for guidance on scaling, market access, and technology
- Making provisions for co-working spaces, labs, and R&D facilities for prototyping and product testing – with specific focus on tech-based startups, with free access to resources like Samsung's IoT platforms and SK Group's big data services

By 2019, CEICs had supported over 2,000 startups, providing jobs to more than 30,000 people – with nearly 1,300 successfully securing funding or partnerships. Notable startups like SendBird, a chat API[5] company, raised USD 120 million in funding and expanded globally, while agritech innovations in Jeonju increased agricultural productivity by 25% in the first three years.

3.3.2 Organise regular events and mentorship programmes to facilitate USD 100 million in startup funding

- Connect local startups with investors and industry experts through platforms like TiE Bhubaneswar
- Host bi-annual B2B meets, investor summits, and hackathons for idea exchange, taking inspiration from Rajasthan's Digifest
- Partner with global entrepreneurship forums to attract cross-border mentorship
- Expand the 'Startup Odisha Yatra' to include mentorship from successful entrepreneurs and business personnel, connecting entrepreneurs with sector-specific experts

[5] Application programming interface

3.4 Targeted skilling and job bank creation

The State will collaborate with top universities and industry giants to develop specialised training programmes, and establish industry partnerships for apprenticeships, while expanding the Odisha Skill Development Authority (OSDA) to train over 10 lakh students annually. With 'Utkal Odisha: Make in Odisha Conclave' initiative, the State is attracting investments across industries and solidifying its position as a manufacturing hub – leading to increased workforce requirement in innovation and industrial activities.

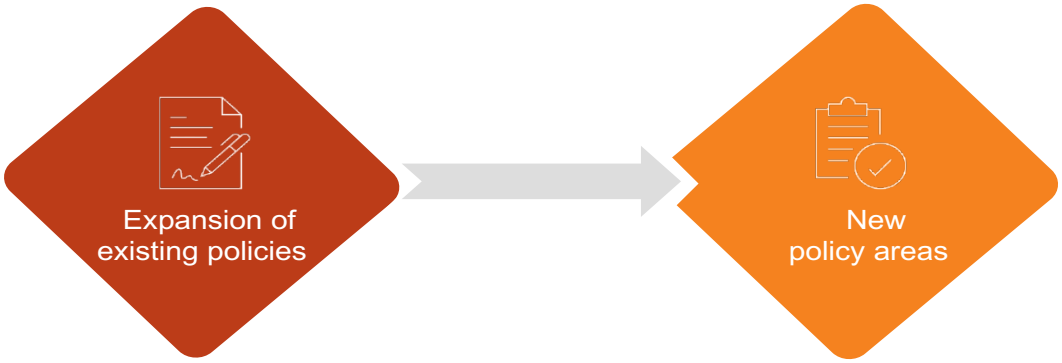
Additionally, Odisha will develop a State-wide job bank to place 100% job seekers annually and establish State-funded R&D centres focusing on key sectors like mining and metallurgy to drive innovation. (Detailed further in chapter 'Skilled in Odisha, Skilling for the World')

3.5 Sector-specific policies

Simplifying regulatory frameworks accelerates industrial growth and boosts investor confidence. Through sector-specific policies, Odisha can provide tailored incentives and streamlined processes to attract investments, foster innovation, and create a competitive edge in priority sectors. To achieve this, the State will scale up some of its existing policies based on benchmarking with best-in-class policies (like, IT policy 2022) and launch new policies to support priority sectors:

EXHIBIT 19.14

Illustrative list of sector-specific policies to be launched by Odisha



1. Renewable Energy Policy, 2022

- Include subsidies for training service employees like high-end electricians and rooftop solar panel technicians, etc.

2. IT Policy, 2022

- Incorporate 'New-age technologies' to provide targeted incentives for cybersecurity, and GenAI, etc.
- Provide fiscal incentives for BPM[1] and KPO[2] centres in Tier-II cities like Berhampur

3. Jana Arogya Yojana, 2024

- Convert Ayurveda, homeopathy, and para-medical practitioners as eligible service providers
- Introduce grants for elderly care startups and residential health facilities

1. Global Capability Centre (GCC)

- Foster a robust ecosystem to attract global companies to set up GCCs in Tier-II/ III cities by offering fiscal incentives and streamlined regulatory processes
- Promote skill development aligned with industry demand; provide recruitment and internship assistance

2. FinTech

- Promote innovation in digital financial services and insurtech by funding startups in the space
- Build regulatory sandboxes to test innovative solutions in a controlled environment while ensuring consumer protection

3. Artificial intelligence (AI)

- Enable the development of AI-centric digital infrastructure, skill development, and use case prioritisation, etc.
- Encourage AI-driven innovation by providing funding for R&D and establishing innovation hubs
- Implement policies ensuring ethical use of AI, with frameworks for data privacy, security, and accountability

4. Deeptech

- Foster innovation in emerging technologies such as quantum computing, and advanced materials via Deep Tech Hubs with academic institutions and industry leaders
- Promote PPP and provide funding/ fiscal incentives for startups and research initiatives in deep tech domains

5. Gig economy

- Provide social security schemes, like health insurance and pensions, specifically for gig economy workers
- Tax incentives for platforms employing local drivers, delivery agents, and service providers, etc.

6. Restaurants, cafes, and food services

- Simplify licensing and permitting under a single-window clearance system for food entrepreneurs
- Establish a 'Culinary Incubation Hub' in Bhubaneswar to promote local cuisine and support food startups

1. Business Process Management
2. Knowledge Process Outsourcing

3.6 Capacity and capability enhancement for the Government

3.6.1. Ensure a dedicated Department for services sector growth

The State will expand the mandate of the Electronics and Information Technology Department to cover the entire services sector, ensuring a comprehensive approach to governance and development. This expansion is crucial for capturing optimal value in Odisha's burgeoning services industry, which includes IT, finance, and healthcare, etc. A clear governance system will be established, with the Principal Secretary acting as the nodal officer to oversee the implementation of policies and initiatives. This officer will coordinate efforts across various departments, ensuring seamless integration and efficient execution.

Additionally, the department will be empowered with a robust legislative framework, providing the necessary legal backing to enforce regulations and promote sustainable growth. Drawing inspiration from the work of the Industries Department of Odisha, the Electronics and Information Technology Department will focus on fostering innovation, enhancing digital infrastructure, and building a skilled workforce to meet the evolving demands of the services sector. It will also work on attracting investments, facilitating public-private partnerships, and promoting research and development to drive technological advancements.

3.6.2. Special task force for each of the six priority programmes

To ensure effective governance, continuous feedback, and performance tracking, Odisha will form Special Task Forces for each priority programme, to be headed by a professional CEO. These task forces will be responsible for ensuring successful and timely implementation of sector-specific initiatives and addressing challenges in real-time:

- Monitor the development and implementation of sector-specific policies and initiatives to ensure they align with the strategic Vision; identify bottlenecks in execution and recommend corrective measures to relevant authorities
- Develop sector-specific key performance indicators (KPIs) to measure progress, such as investment inflows, job creation, and export growth; submit quarterly performance reports to the Department head, highlighting achievements, gaps, and actionable insights
- Conduct regular consultations with industry leaders, MSMEs, startups, and trade bodies to gather feedback on policy effectiveness
- Act as a grievance redressal platform for businesses and investors, addressing regulatory, infrastructure, or operational challenges; co-ordinate with relevant departments to resolve issues swiftly and effectively
- Organise training programmes and workshops for Government officials and sector stakeholders to enhance awareness of global best practices and emerging trends

Each task force will be supported by a senior Government official, comprising representatives from industry associations, academic experts, and domain-specific advisors, and will function under a central coordination committee to align with the State's overarching development goals.

CHAPTER

20

STARTUP ODISHA: THE LAUNCHPAD FOR INNOVATIVE IDEAS

Summary

Startups hold immense potential to drive Odisha's economic growth, enhance technological advancements, create employment opportunities, and foster a culture of innovation and entrepreneurship. This ecosystem will be a cornerstone in Odisha's journey towards becoming a USD 1.5 trillion economy by 2047. Since the establishment of the **Startup Odisha Programme** in 2016, the State has taken significant strides to cultivate and support a vibrant startup ecosystem.

Odisha aspires to position itself as a leading destination for startups, underpinned by a strong investor network, extensive mentorship platforms, and an entrepreneurial spirit.

By 2047, the State envisions the following outcomes

- Establish itself among the **top five startup ecosystems in India**, recognising as the **'Entrepreneurship Hub of the East'**
- Nurture **5 to 8 unicorns** with roots in Odisha
- Achieve **10 per cent of total job creation** through startups by 2036
- Ensure **50 per cent of startups are owned or led by women** by 2047, with a milestone of **33 per cent by 2036**

Key initiatives to achieve the outcomes

Outcome - This will provide a platform to the start-ups to showcase their products and also an opportunity for marketing

Global innovation and startup city initiative: Develop Bhubaneswar-Cuttack-Puri-Paradip Economic Region (BCPPER) as one of the major **'Startup Hubs of the East',** supported by cutting-edge infrastructure, innovation clusters, and an enabling policy

State-led corporate venture funds and innovation alliances: Forge partnerships with leading corporate venture capital firms and global investors to channel investments into promising startups across key sectors

Fund-of-funds for startups: SIDBI managed fund-of-funds (FoF) of INR 100 cr. created with four alternate investment funds (AIFs) to support startups at various stages of growth, ensuring comprehensive financial support. The funding pattern under the **Odisha Start-up Growth fund** will be increased to Rs 500 crore, which will enable the start-ups to overcome the fund barriers

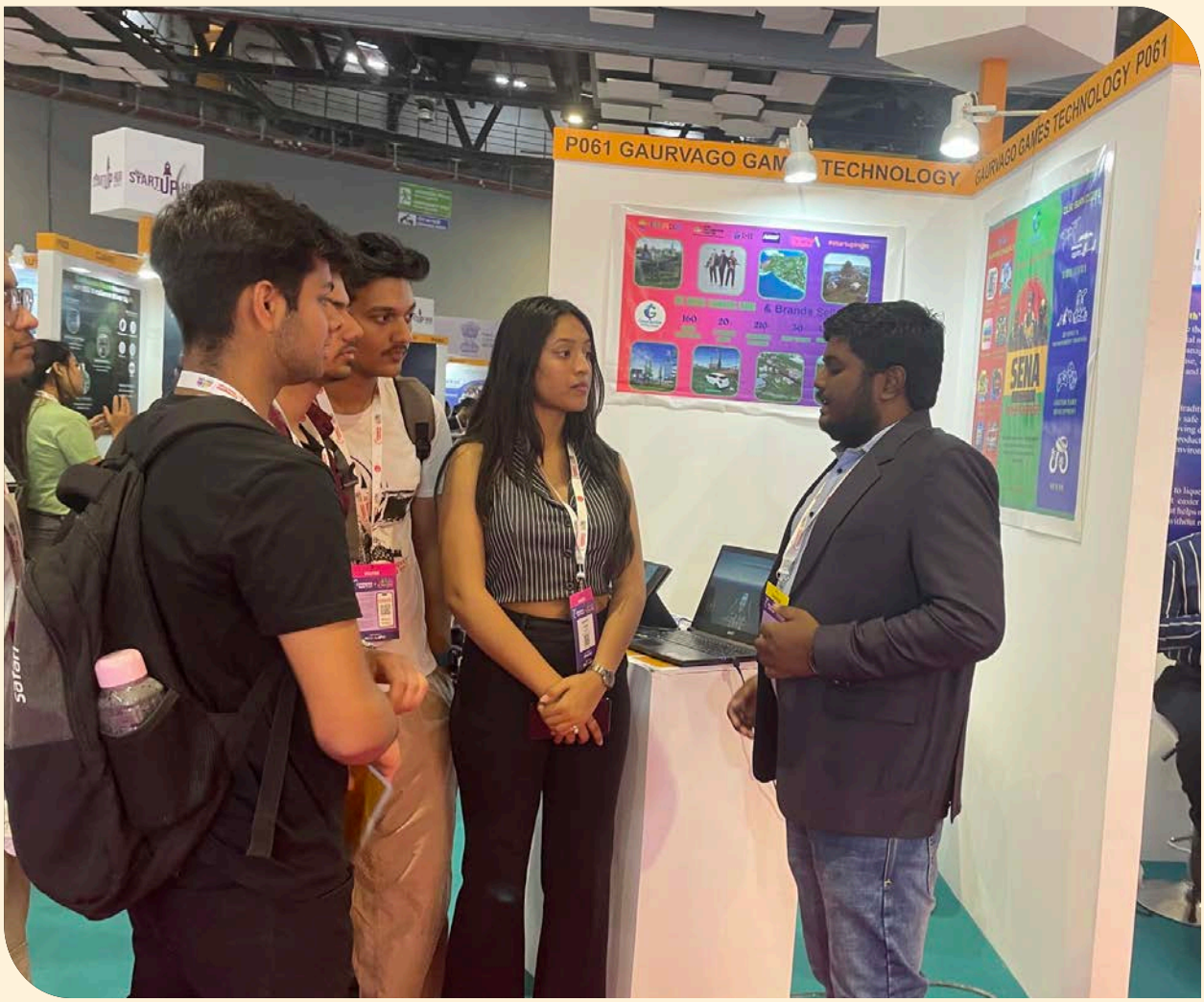
Marquee talent attraction and retention programmes: Introduce flagship programmes aimed at attracting global talent and creating an ecosystem that retains and nurtures entrepreneurial aspirations within the State

Innovation districts and clusters: Establish **10 to 15 marquee incubator parks** across 15 districts of the State to ensure equitable access to innovation resources, foster regional economic growth, and support diverse entrepreneurial ecosystems

Strengthening ecosystem linkages: Enhance access to markets for Odia startups and foster a thriving venture capital ecosystem, thereby building a foundation for long-term growth

Over the next 24 months, the State will

- **Operationalise the 'Odisha startup growth fund'** with a transparent governance structure to ensure efficient utilisation and resource accessibility for eligible startups
- **Develop a 'Model incubation park'**, launching the flagship **'Special startup zone'** in the BCPPER to serve as a hub for innovation and entrepreneurial activity
- **Launch the 'nano-unicorn programme'** to identify and nurture **500 nano unicorns** through a comprehensive programme comprising Short-term MBA courses courses, mentoring, and seed funding support of INR 1 lakh for each selected venture - debt / equity / grant
- **Define 'Startup eligibility criteria',** establishing clear and inclusive criteria to define startups, ensuring targeted benefits for deserving ventures under Government schemes



1. Context

With the establishment of 'Startup Odisha' in 2016, the State has taken a significant step in scaling its entrepreneurial ecosystem (Exhibit 20.1). It now serves as the nodal agency for building a robust startup and innovation ecosystem and operates under the State's MSME (Micro, Small, and Medium Enterprises) department.

EXHIBIT 20.1

Startup Odisha: Key figures since inception

35 Incubators functioning across the State	**112** Incubatees	**2,215** Recognised startups	**140** Seed-funded startups
638 Women-led startups	**5 lakh sq. ft.** Incubation space	**15** Nodal agencies	**75** Entrepreneurship cells

Startups registering with the Startup Odisha are eligible to apply for a monthly allowance of INR 20,000 and/or receive product development and marketing assistance of up to INR 15 lakh. The 'O-Hub' and NEAI, a centralised incubator wholly owned and funded by the State Government, was also created under this initative. It offers office space, mentorship, incubation support, and funding opportunities at subsidised rates.

Additionally, Startup Odisha also is focused on fostering entrepreneurial culture in the State through a variety of events:

EXHIBIT 20.2

Startup Utsavv 2024 to foster strategic partnerships with industry

Innovate Odisha Hackathon: Partnered with AIC Nalanda to foster collaboration, team building, networking, etc.

"Empowering Women Entrepreneurs Summit"to offer support and benefits to women-led startups

Uddipan focused on harnessing innovation and intellectual property (IP) for business growth

Amazon Web Services (AWS) workshop on Gen-AI at O-Hub for sharing the knowledge of AWS solutions

FundStack 3.0 to attract startup investments in the State

Propelled by these efforts, Odisha's performance ranks highly among the Indian States and union territories, per the Startup India's rankings. According to the Index, the strongest offerings of Odisha include funding support, institutional backing, and capacity building for enablers.

However, there remains room for improvement in areas such as incubation and mentorship support, as well as the adoption of sustainable practices, as shown below:

EXHIBIT 20.3

Lagging State on the parameter
Leading State on the parameter

Odisha's performance among Indian States and UTs[1] on key metrics to support startup ecosystem[2], percentile		**Description of the metric**
Institutional support	89	Facilitation and execution of the State's startup policy through user-friendly portal and incentives
Fostering innovation and entrepreneurship	71	Encourage innovation among student and women
Access to market	73	Support participation in public procurement process and enable domestic and international markets opportunities
Incubation and mentorship support	44	Financial and infrastructural support to State-supported incubators
Funding support	100	State-owned seed funds, venture funds or fund-of-funds
Capacity building of enablers	89	Workshops and programmes conducted for Government officials and State-supported incubators
Roadmap to a sustainable future	25	Encourage startups focusing on rural, renewable energy, sustainability, circular economy, and climate, etc.

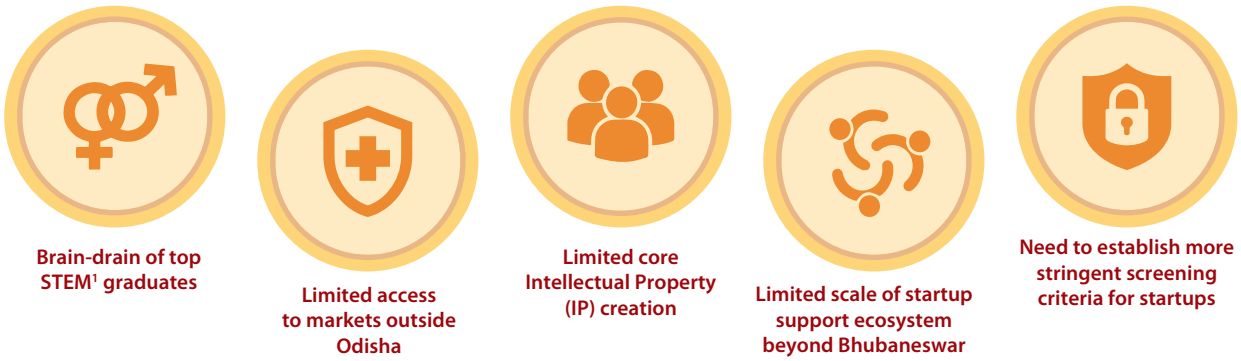
[1] Union territories
[2] 26 States and seven Union territories were assessed and ranked in the States' Startup Ranking 2022 conducted by Startup India. Based on assessment the States have been ranked in following order: Best performers (5 States), Top performers (7 States), Leader (8 States), Aspiring leader (4 States), Emerging ecosystems (9 States). Odisha is in 'Top Performer' category

Source: Startup India – State's Startup Ranking

1.1 Key challenges

While Startup Odisha has helped the State formulate a structured process to support entrepreneurship projects and cultivate entrepreneurs, it needs to address certain challenges to scale up the ecosystem:

EXHIBIT 20.4



- **Brain-drain of top STEM[1] graduates** moving from Odisha to seek jobs and set up startups; need to be incentivised to stay in the State and build ventures locally
- **Limited access to markets outside Odisha**, stemming from the lack of a strong network and the necessary support to create exposure and establish valuable linkages
- **Low capital availability** due to nascent venture capital ecosystem, requiring intervention through State-backed fund-of-funds
- **Limited core Intellectual Property (IP) creation**; need to support startups in innovative sector and assist in IP processes
- **Limited scale of startup support ecosystem beyond Bhubaneswar** by establishing incubator centres in all districts
- **Need to establish more stringent screening criteria for startups** registered under the 'Startup Odisha' programme. For example, some startups have been difficult to track, and there is a sub-optimal representation of Odia-origin founders

[1] Science, Technology, Engineering, Mathematics

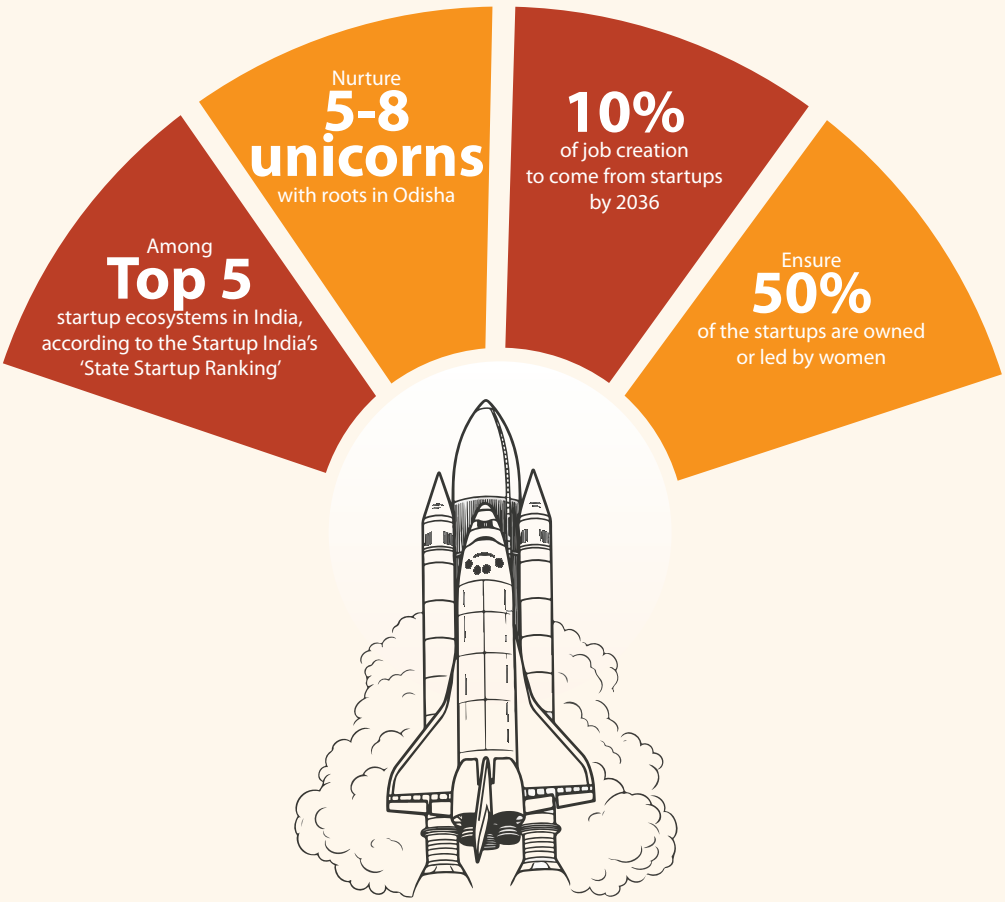
2. Vision and outcomes

Odisha is committed to establishing itself as the leading startup hub of Eastern India by fostering innovation, encouraging entrepreneurship, and creating a robust ecosystem that attracts talent from within the State and beyond. With a clear Vision for economic empowerment, the Government is working towards cultivating a vibrant network of startups that will drive sustainable economic growth and create significant employment opportunities. By strategically nurturing this ecosystem, Odisha aims to position itself not only as a regional leader but also as a key contributor to the national and international startup landscape, showcasing its potential as a global destination for innovation and enterprises.

EXHIBIT 20.5

VISION 2047

Establish Odisha as a top destination for startups, enabled by strong investor community, large mentorship platform and entrepreneurial spirit



To turn this Vision into reality, the State has identified certain high-potential sectors (Exhibit 20.6). For example, sectors such as tourism, biotech, aerospace and defence manufacturing have a projected growth rate of over 10% and could emerge as key sectors for startup involvement in the State.

EXHIBIT 20.6

Endowment Need

Potential sectors	Endowments/ need
Space technology	Odisha Space Applications Centre (ORSAC) equipped with Geographic information system (GIS) laboratories and experts. Other facilities include Abdul Kalam Island missile testing facility and VSSSIC[2] in Sambalpur
Biotech	30 acres biotech park in Bhubaneswar Potential to develop marine biotechnology leveraging the 480 km large coastline
Tourism and culture economy	Unique arts and crafts traditions with global recognition but limited market development Under-explored tourism potential with endowments across cultural, jungle, eco and beach tourism
Clean energy and mobility	Ambitions to achieve over 50% renewable energy penetration led by solar, hydro, floating solar, and nuclear, etc. Future potential growth in sectors such as electric vehicles and battery for commercial and passenger vehicles to support national ambitions
Metal ecosystem	Odisha produces 20% of India's steel and 70% of aluminum but with little value addition
Blue-economy	480 km long coastline with one major port in Paradip and two non-major ports at Dhamra and Gopalpur Growing aquaculture ecosystem with limited value addition in State
Climate analytics and disaster resilience	High frequency of natural disasters and 33% of land under forest cover Opportunities for Nature-Based Solutions (NBS) to mitigate disaster impact and enhance environmental resilience
Circularity	Existing plastics, metals, and textile industries with access to ports and bold ambitions on circularity
Food processing	Limited value-added processing and cold storage solutions Existing institutes of higher learning and research including National Rice Research Institute, and Odisha University of Agriculture
Defence & Aerospace Manufacturing	Key producer of steel and aluminum, large titanium reserves, defense and aerospace facilities (e.g., DRDO ITR[3] in Chandipur, Naval Base in Visakhapatnam) to ensure end-to-end integration Strategic location to promote R&D with existing DRDO integrated test range in Chandipur

1. For renewable energy growth rate of solar capacity addition; for metal growth rate of steel demand; for Blue-economy growth rate of fisheries sector have been taken as proxies
2. Veer Surendra Sai Space Innovation Centre
3. Integrated Test Range (ITR), Defence Research and Development Organization (DRDO)

1.2 Key outcomes

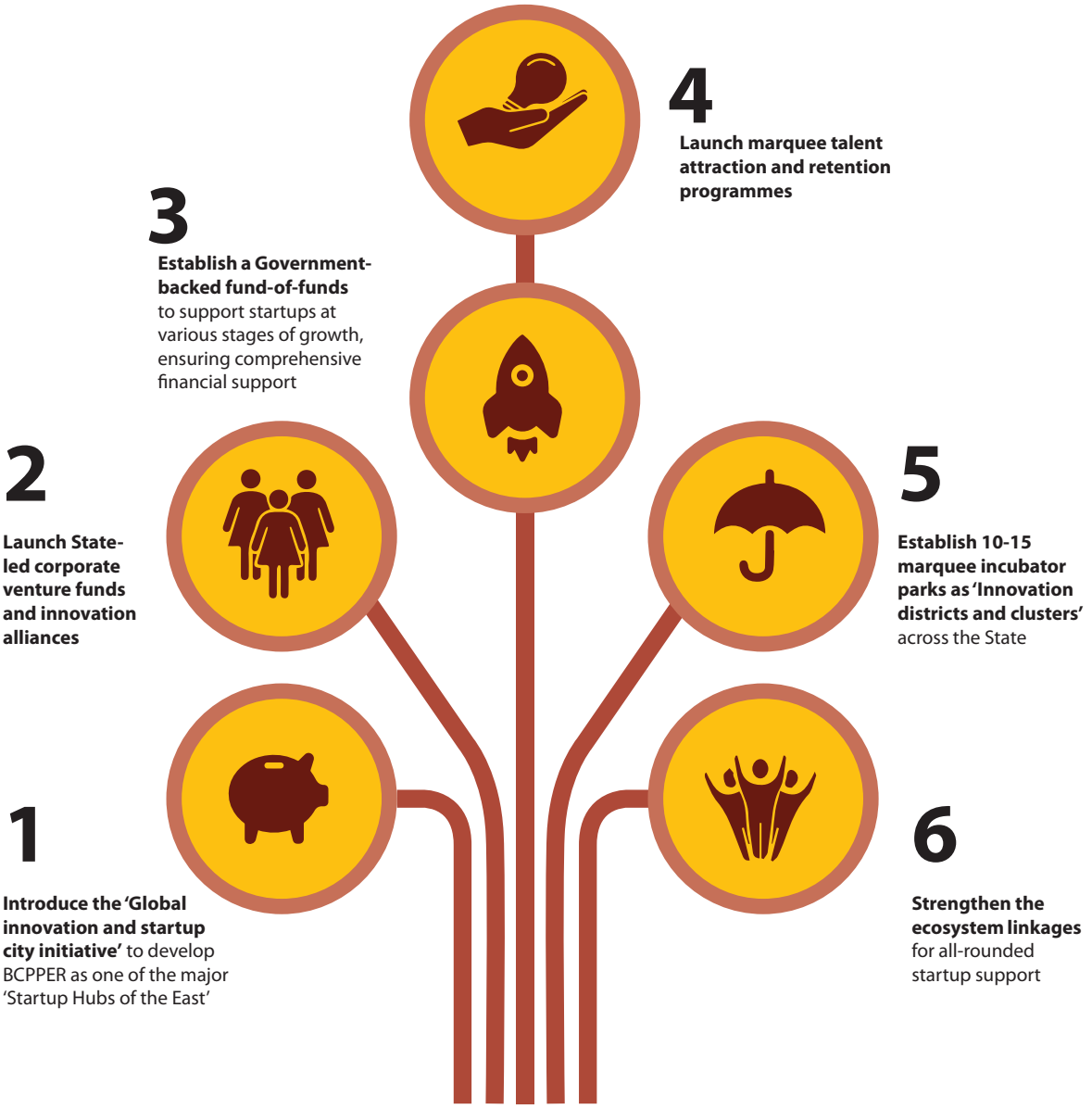
EXHIBIT 20.7

Key outcomes	Unit	Current state	2029	2036	2047
Total startups	'000 nos.	~2.5	7	15	40
Jobs created by the startup ecosystem	'000 nos	-	100	500	1,200
Startups incubated at Higher Education Institutions (HEIs) of Odisha	'000 nos	~1	2	4	6
Women-led startups	% of total	8%	15%	33%	50%

3. Key initiatives

Odisha envisions becoming the epicentre of innovation and entrepreneurship in Eastern India, driving economic growth, fostering inclusive opportunities, and empowering its citizens across six focus areas. To achieve this ambitious goal, the State Government is set to implement a series of strategic initiatives designed to create a world-class startup ecosystem. These measures aim to attract top talent, ensure financial sustainability, and establish Odisha as a leader in the global startup landscape.

EXHIBIT 20.8



3.1 Introduce the 'Global innovation and startup city initiative'

Transform Bhubaneswar-Cuttack- Puri-Paradip Economic Region (BCPPER) into a leading 'Startup Hub of the East' through cutting-edge infrastructure, innovation clusters, supportive policies, and global collaborations.

3.1.1. Revise the 'Odisha Startup Policy'

- Align with global standards while addressing local needs through a comprehensive policy revision
- Develop an inclusive definition incorporating criteria like revenue, innovation, sectoral focus, and Odisha-based operations
- Establish a streamlined registration mechanism with dashboards for transparent application processing, growth tracking, and audit eligibility

3.1.2. Develop world-class infrastructure

- Establish a state-of-the-art startup park with co-working spaces, labs, and maker hubs
- Develop innovation clusters focused on emerging sectors like artificial intelligence (AI), renewable energy, and biotech
- Build digital infrastructure with high-speed internet and advanced data centers

3.1.3. Strengthen the innovation ecosystem

- Set up at least five incubators and accelerators in partnership with leading institutions and corporates
- Create an INR 500 crore innovation fund to support early-stage startups and attract investors
- Host flagship annual events such as startup expos and global innovation summits

3.1.4. Foster collaboration and knowledge exchange

- Partner with global innovation hubs in Silicon Valley, Tel Aviv, and Singapore for mentorship and market access
- Facilitate academia-industry collaboration through innovation challenges and hackathons
- Launch exchange programmes for startups and innovators to access global expertise

3.1.5. Enhance livability and connectivity

- Develop BCPPER as a vibrant urban hub with modern amenities and seamless connectivity (Detailed in ' 'Urbanisation as a growth engine' chapter)

3.1.6. Monitor and evaluate progress

- Set up a 'Startup city task force' to oversee implementation and track key performance indicators (KPIs)
- Publish real-time dashboards for Department heads, highlighting achievements and areas for improvement
- Gather feedback from stakeholders to refine strategies

3.2. Launch State-led corporate venture funds and innovation alliances

Position Odisha as a hub for corporate-backed innovation and investments by partnering with leading venture capital (VC) firms and international investors

3.2.1. Establish State-led venture funds

- Create sector-focused funds with Government seed capital to attract corporate co-investments
- Prioritise high-growth sectors such as artificial intelligence (AI), renewable energy, biotech, and advanced manufacturing
- Offer matching grants and co-investment opportunities to global and domestic investors

3.2.2. Forge strategic partnerships

- Partner with corporate venture capital (CVC) firms from industries like IT, green energy, and metal downstream
- Facilitate alliances with international investors, sovereign funds, and global accelerators
- Encourage corporates to establish local innovation centers and R&D hubs in Odisha

3.3. Establish a robust Government-backed fund-of-funds

Odisha will expand the **Odisha Startup Growth Fund (OSGF)** into a phased **INR 10,000 crore fund-of-funds**, serving as a critical financial backbone for its startup ecosystem. Key initiatives include:

- Appointing professional fund manager from reputed organisations such as SIDBI or SBI Venture Capital, drawing inspiration from successful national models like the Self-Reliant India (SRI) fund
- Ensuring the fund is managed autonomously by a panel of recognised experts, maintaining transparency and professionalism
- Providing startups with long-term debt solutions via empanelled non-banking financial companies (NBFCs)
- Allocating INR 500 crore as a landmark budgetary provision for **Startup Odisha's 10th anniversary in 2026**, underlining the State's commitment to fostering innovation
- 30% of the OSGF shall be earmarked for the women-led start-ups who have shown exemplary growth during their incubation period

SIDBI: Small Industries Development Bank of India; SBI: State Bank of India

3.4. Launch marquee talent attraction and retention programmes

The State aims to harness local and global talent through targeted initiatives:

3.4.1 Attract non-resident Odias (NROs)

- Provide fiscal and non-fiscal incentives to promote NRO business establishment in Odisha, such as tax exemptions, subsidised land, and grants
- Create a dedicated NRO business facilitation cell to provide one-stop support for legal, financial, and operational queries
- Organise annual global NRO summits to foster connections, highlight investment opportunities, and share success stories

3.4.2 Provide incentives to entrepreneurs from Eastern India to set up enterprises in Odisha, strengthening the State's position as the 'Startup hub of the East'

3.4.3 Empower Higher Education Institutions (HEIs) to fostering entrepreneurship

- Introduce dedicated entrepreneurship courses and societies
- Establish 'Mini-incubators' as innovation cells in institutions through public-private partnerships
- Offer scholarships and stipends for students pursuing entrepreneurial ventures

3.5. Establish 10-15 marquee incubator parks as 'Innovation districts or clusters'

3.5.1 Identify strategic location for set up

- Establish innovation parks near key universities to foster collaboration between academia and industry
- Identify regions aligned with initiatives like Innovations for Defence Excellence (iDEX) to leverage funding and strategic focus
- Develop parks in underserved areas to promote equitable growth and tap into local talent

3.5.2 Designate such parks as 'Special startup zones'

- Provide startups with subsidised legal services, intellectual property (IP) commercialisation support, and access to investors
- Develop sector-specific clusters with testing labs, prototyping centres, and mentorship programmes
- Implement simplified startup registration, tax holidays, and patent fee waivers within parks, taking inspiration from the Gujarat International Finance Tec-City (GIFT City)
- Partner with global universities, industry councils, and R&D centers to bring advanced technology and practices

3.5.3 Organise mentorship and knowledge-sharing programmes in collaboration with the **Institute of Entrepreneurship Development, Odisha**

3.5.4 Strengthen the ecosystem linkages for all-rounded startup support

3.5.5 Enhance access to markets for **Odia startups**

3.5.6 Ensure preferential Government procurement by allocating specific quotas for startups, particularly those led by women, tribal groups, and other marginalised communities

3.5.7 Leverage innovation challenges and hackathons to address specific Government needs, offering contracts to selected startups

- Supporting startups during their R&D phase through **guaranteed term contracts**, assessing innovation levels, market fit, and scalability

3.6. Foster a thriving venture capital ecosystem

3.6.1 Create a network of empanelled venture capitalists and angel investors to drive funding and mentorship

3.6.2 Provide a State-backed risk coverage to encourage venture capital investments in Odia startups

3.6.3 Hoste pitch events, hackathons, and demo days in partnership with incubators and universities

3.6.4 Establish co-investment opportunities where the State acts as a co-investor, making Odisha startups more attractive to external investors

3.6.5 Partner with national and international venture capitalists to design investment-readiness programmes, equipping startups with essential skills and resources

CHAPTER 21

ENERGY AND SUSTAINABILITY: POWERING INDIA'S ENERGY FUTURE

Summary

Energy will be a cornerstone of Odisha's ambitious vision to become a USD 1.5 trillion economy by 2047. With significant investments flowing into energy-intensive manufacturing and emerging service sectors such as data centres, and rapid urbanisation, etc., the State's energy demand is projected to grow at a compound annual growth rate (CAGR) of at least 7%. This growth trajectory will see energy consumption reach approximately 400,000 million units (MUs) annually and a peak demand of 80–90 GW by 2047, compared to around 90,000 MUs and 16 GW in 2023–24. These figures surpass the Central Electricity Authority's (CEA) earlier estimates of 6% annual growth up to 2032, highlighting Odisha's accelerated energy needs.

To address rising demand, Odisha plans to add 21,000 MW of generation capacity by 2047, with over 70–75% of this from renewable energy sources such as solar, wind, round-the-clock renewables, and advanced storage solutions. However, based on anticipated shifts in consumption patterns, the State may need to plan for approximately 50,000 MW of additional grid capacity—more than double the current planned expansion.

Odisha's abundant natural resources place it in a unique position to meet this challenge. The State holds 25% of India's coal reserves, substantial water resources ideal for pumped storage projects (PSPs), and untapped floating solar potential. This combination of conventional and renewable energy resources allows Odisha to emerge as a future energy powerhouse.

Odisha envisions to be a pivotal force in India's energy story becoming a self-sufficient energy hub and a major exporter, ensuring balanced and sustainable future.

By 2047, the State envisions the following outcomes

- **Become a top five energy-exporting State,** supplying power to Southern and Eastern India and beyond
- **Achieve at least 33% green power consumption in industrial sectors**, maintaining competitive tariffs to attract investment
- **Enable green industries**, including green steel and aluminium production, through 3–5 MMTPA green hydrogen production capacity
- **Develop a future-ready power ecosystem**, with near 100% digitisation, disaster-resilient infrastructure, and advanced technologies like high-voltage direct current (HVDC) systems
- **Drive over 50% green electrification** in agriculture and residential areas through dedicated State-specific initiatives like PM KUSUM and PM Suryaghar[1]
- **Reduce carbon emissions by at least 10%**, improving energy efficiency across manufacturing, transportation, and agriculture

Realising this Vision will require INR 2.5-3 lakh crore investments over the next 12-15 years across generation, transmission, and distribution. This is expected to result in three times boost in employment in the sector.

Key initiatives to achieve the outcomes

Enable robust resource adequacy planning, projectisation and implementation to fulfil 400k MU aggregate and 80-90 GW peak demand, including institutionalising the demand planning exercise on a five-year rolling basis for key demand hotspots (e.g., Bhubaneswar)

Plan and implement transmission expansion leading to INR 80-100k Crore infrastructure investments, with a tendering plan for intra-and inter-State grid expansion leveraging the tariff-based competitive bidding (TBCB) route

Develop at least three green energy zones exclusively for industries requiring majorly green energy

Achieve at least 10% carbon emissions reduction through energy saving and efficiency across target sectors like manufacturing, transportation, and agriculture

Mobilise INR 1.8-2 lakh crore corporate investments (around 70% of the total investment requirement) through tailored incentives and policies, energy-themed roadshows focusing on new technologies like floating solar, small modular reactors for nuclear, storage, etc.; establish a '**State green energy transition fund**' to provide initial investments for energy transition

Launch targeted skilling courses to ensure workforce readiness for energy transition such as solar rooftop installation, and operations and maintenance (O&M) of green energy equipment, etc.

Constitute an inter-departmental war room under the Chief Secretary to ensure energy expansion and green transition to achieve State objectives

[1] PM KUSUM: Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan | PM Suryaghar: PM – Surya Ghar: Muft Bijli Yojana

Over the next 24 months, the State will

- **Undertake a comprehensive energy transition study** to:
  - Pinpoint high-impact projects with clear ownership and funding requirements
  - Collaborate with stakeholders to forecast energy demand, develop resources, and ensure project viability
  - Plan phased expansions for transmission and distribution networks, emphasising technology integration
- **Set up a task force to fast-track the development of 7 GW pumped-storage projects (PSP)**, including, focusing on ongoing projects like the 600 MW Indrawati PSP. This will involve reducing regulatory barriers, accelerating project approvals, and encouraging public-private partnerships
- **Conduct policy benchmarking to expand Renewable Energy Policy, 2022** to include incentives for target sectors like green hydrogen and pumped hydro storage
- **Implement PM KUSUM[1] 'C' for agriculture and PM Suryaghar[2]** for Government buildings in a 'Mission mode'
- Expand and implement the **'State Energy Efficiency Action Plan'**
- **Identify priority sectors for green zone development for green industries** and demarcate land for developing plug-and-play infrastructure
- **Assess vulnerability and create a roadmap to achieve 100% disaster resilience in critical energy infrastructure**, especially in coastal areas and other high-risk zones, in collaboration with the Department of Revenue and Disaster Management
- **Conduct a skill-mapping study to design and launch relevant skilling courses** in Industrial Training Institutes (ITI) in partnership with the corporate sector
- **Establish an inter-departmental war room under the Chief Secretary** to monitor progress of energy infrastructure strengthening, expansion, and greening, including senior leadership from Energy, Industries, Water Resources, Forest, Environment and Climate Change, and Skilling Departments, etc.

Odisha is poised to become a powerhouse for other States by leveraging its abundant natural resources and strategic location. The State aims to harness its rich coal reserves and vast potential for renewable energy, particularly solar power and water resources, to establish a diversified and sustainable energy portfolio. By investing in cutting-edge technology and green energy systems, Odisha plans to enhance energy efficiency and reduce carbon emissions. Additionally, the State is focusing on upskilling its workforce and encouraging corporate partnerships, fostering collaboration and economic growth. **Through these initiatives, Odisha envisions becoming a key player in India's energy landscape, driving progress and innovation while contributing to a greener and more self-reliant nation.**

[1]Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan
[2]Pradhan Mantri Surya Ghar Muft Bijli Yojana

1. Context

Odisha's energy sector has transformed significantly over the past two decades. In the early 2000s, it became the first State in India to privatise its distribution companies (DISCOMs), reducing distribution losses from over 57% to approximately 18% over two decades (Exhibit 21.1). Simultaneously, industries began relying heavily on captive power plants, which provided more reliable and cost-effective energy than grid power, enabling them to save up to 15-20% in power costs. With captive energy now meeting 60% of the State energy demand, this shift was crucial for rapid industrial growth and strengthening Odisha's dominance in the mining and mineral sectors.

EXHIBIT 21.1

Odisha's power sector has performed mostly at par with the national power sector

[1] Excluding TPA sale

[2] FY24

[3] Extra high tension

Source: Department of Energy, Government of Odisha, Annual Activity Report 2022-23; World bank, Ministry of Power, CMIE

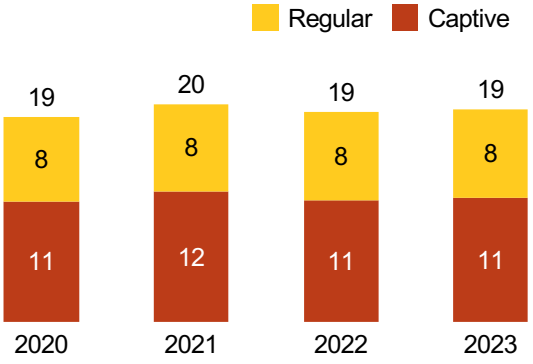
Over the decades, Odisha has achieved key milestones, such as electrification of almost 100% households, consistent power surplus and one of the lowest electricity tariffs for commercial and industrial consumers, ranging from INR 6-7 per unit. The State's robust transmission network, managed by Odisha Power Transmission Corporation Limited (OPTCL), provides 25,337 MVA in capacity, with a ratio of 3.2 MVA/MW, surpassing the national average of 2.8 (Exhibit 21.2).

In recent years, energy demand has accelerated in line with Odisha's industrial and commercial expansion, which has driven an 11% annual increase in demand, closely matching the State's 12% GSDP growth rate. Simultaneously, Odisha has placed an increasing focus on diversifying its energy mix and ensuring sustainable growth, with new renewable sources now contributing to 18% of the grid's contracted capacity.

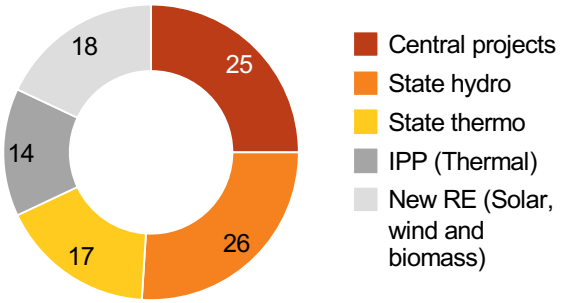
EXHIBIT 21.2

Odisha today: With ~60% of the capacity in captive, Odisha has a total energy demand of 90k MU including 6.9 GW peak catered through the State network

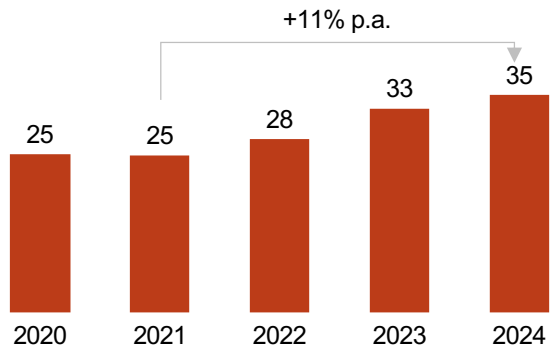
Contracted capacity, GW



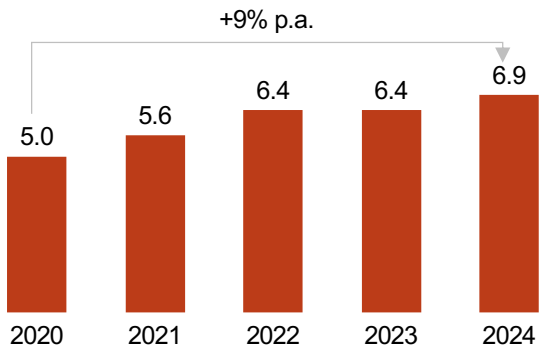
Power share in total contracted capacity 2022–23, %



Grid energy demand, '000 MU



Peak power catered in the State network, GW



Source: GRIDCO Ltd.

As Odisha charts its course towards becoming a USD 1.5 trillion economy by 2047, the State is harnessing its abundant natural resources and strategic advantages to drive sustainable growth. With nearly 25% of India's power-grade coal reserves located in Talcher, Angul, Sundergarh, and Sambalpur, plans are underway to expand the Talcher plant, ensuring energy security and industrial development.

Additionally, Odisha's 11% share of the nation's water resources underpins a vast 36 GW potential for pumped storage projects (PSPs), with 1.7 GW already under development. Furthermore, the State is tapping into its immense floating solar energy potential of 17-18 GW, supported by its extensive surface water resources.

Odisha's ports serve as vital gateways for the export of green hydrogen and ammonia, reinforcing the State's commitment to clean energy solutions. Combined with thriving petrochemical, steel, and fertiliser industries that drive robust domestic demand, Odisha is poised to emerge as the energy hub of the East, championing economic prosperity and sustainable development for its people and the nation.

1.1 Current and planned investments in Odisha's energy sector

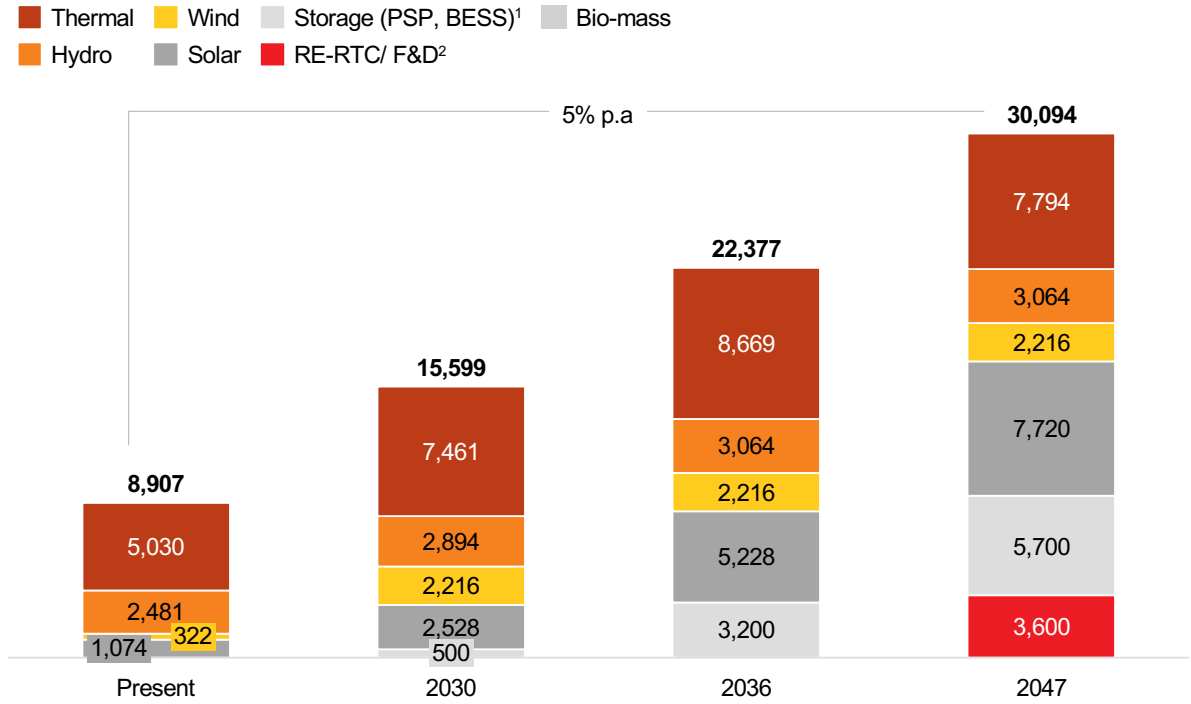
Odisha is making substantial investments in both conventional and renewable energy to meet its growing power requirements and ensure sustainable development. According to projections from the State's comprehensive planning process, grid demand is expected to grow by approximately 5.4%, reaching 120,000 million units (MU) annually and a peak demand of around 30,000 MW by 2047.

To address this rising demand, Grid Corporation of Odisha Limited (GRIDCO) has outlined plans to enhance its contracted generation capacity by 21,188 MW by 2047. Notably, around 75% of this additional capacity will come from renewable energy sources, including round-the-clock renewable energy (RE RTC), floating solar, and advanced storage solutions (Exhibit 21.3).

This effort complements Odisha Power Generation Corporation Ltd.'s (OPGCL) ambitious INR 14,000 crore expansion plan to significantly boost its generation capacity. Together, these initiatives reflect Odisha's commitment to energy security, sustainability, and economic growth for the benefit of its people.

EXHIBIT 21.3

GRIDCO's capacity addition plan, MW



[1] PSP: Pumped Storage Projects; BESS: Battery Energy Storage System
[2] RE-RTC: Renewable energy, round-the-clock; F&D: Firm and dispatchable renewable energy

To support the rise in renewable energy, Odisha Hydro Power Corporation Limited (OHPC) aims to add 7,000 MW of pumped storage capacity, with an investment of INR 38,000 crores over the next 15 years - helping integrate intermittent sources like solar and wind into the grid:

EXHIBIT 21.4

Project details	Expected year of completion	Investment amount (INR cr.)
Upper Indravati Pumped Storage Project (600 MW)	FY 2030-31	3,470
Upper Kolab Pumped Storage Project (600 MW)	FY 2031-32	3,470
Balimela Pumped Storage Project (500 MW)	FY 2031-32	3,110
Prahadipanga Pumped Storage Project (2300 MW)	FY 2035-36	11,000
Tumudibandha Pumped Storage Project (3000 MW)	FY 2037-38	16,000

Grid expansion will be critical to accommodate this increase. For this, OPTCL plans to add 21,440 MVA in transformation capacity and 11,000 km of transmission lines by 2036 to ensure grid reliability and facilitate integration of new renewable energy capacity, as detailed below:

EXHIBIT 21.5

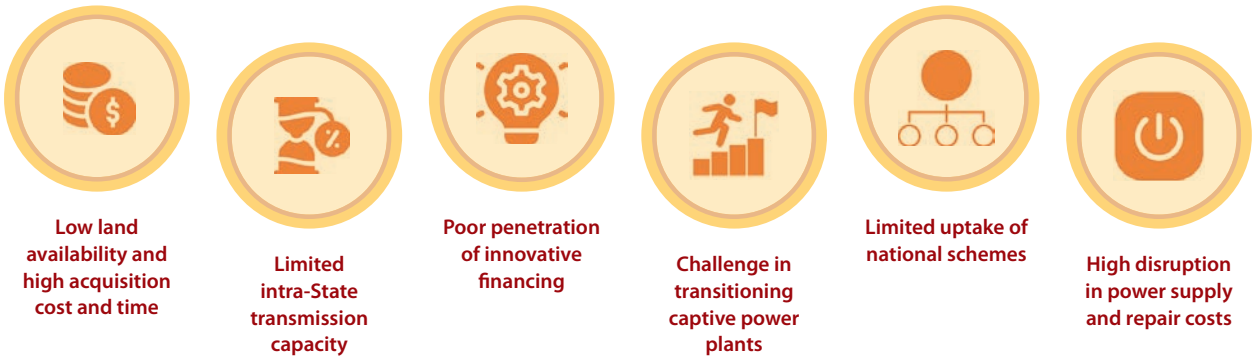
Voltage (Kv)	MVA addition	Total MVA	Additionof grids	Total grids	Addition of line (km)	Total CKT km
765	9,000	9,000	3	3	202	202
400	7,000	14,835	7	16	955	3,088
220	3,840	19,258	12	77	4,567	12,698
132	1,600	26,939	10	168	5,310	15,415
Total	21,440	70,032	32	264	11,033	31,201

Corporate involvement is crucial to develop energy infrastructure adequately meeting the rising energy demand across sectors, including manufacturing, agriculture, and services. To optimise these investments and ensure timely implementation, Odisha will conduct a study covering proactive planning, refining energy demand estimates, and ensuring the development of a well-coordinated ecosystem. This is discussed further in the chapter (Sections 3.1 and 3.2).

1.2 Key challenges

While Odisha has been taking significant strides towards becoming an energy hub, it must address the following key challenges to fully unlock on its energy potential and ensure sustainable growth:

EXHIBIT 21.6



- **Low land availability and high acquisition cost and time**, hindering corporate participation
  - Around 30% of the land in Odisha is forest land, with no dedicated land banks for energy
  - High cost of land acquisition due to low availability of barren lands
- **Limited intra-State transmission capacity** hindering the development of renewable energy projects
- **Poor penetration of innovative financing** with a need to focus on sustainable financing and public-private partnership, e.g., TBCB[3] for transmission projects
- **Challenge to transition captive power plants** due to the need for RTC[4] power and high existing investment in thermal
  - 60% of the State consumption under captive generation
  - 90+% of captive under non-renewable energy sources
- **Limited uptake of national schemes**, e.g.:
  - PM KUSUM due to heavy cross-subsidisation for agriculture consumers[5]
  - PM Suryaghar[6] due to high price variation of solar rooftops in the market (ranging from INR 70–80k per kW) and limited consumer awareness
- Being a coastal State, Odisha suffers **high disruption in power supply and repair costs** during the frequent natural disasters

[3] Tariff-based competitive bidding
[4] Round-the-clock
[5] Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyaan; Very low tariffs of INR 1.5-1.6 per unit (lower than INR 2.5-3 for solar) against a cost of supply at INR 5-5.5 per unit
[6] Pradhan Mantri Surya Ghar Muft Bijli Yojana

1.3 Key trends

Key global and India-level trends are reshaping the energy landscape, influencing Odisha's approach to sustainability, innovation, and energy diversification. These are outlined below:

EXHIBIT 21.7

Rapid RE[1] growth with improving economics driven by scale and innovation: 15-20% decrease in solar and RE hybrid cost, and 50% in BESS[2] tender prices over the last few years

Energy security for India: More than 80% of India's oil is imported making it vulnerable to global price fluctuations; RE[1] can be vital for import substitution

Net Zero commitment:

- India's commitment for 2070; To fulfill **50% of energy required via RE[1] by 2030**
- **Leading corporates** committed for 2050 (e.g., Unilever, ExxonMobil; CBAM[3])

Renewed focus on thermal for resource adequacy, ensuring reliability and grid stability, including **retro-fitting to reduce emissions and improve flexibility** (e.g., Advanced Ultra Supercritical plants, Small Modular Reactors)

Shift to new energy generation sources:

- RTC[4] and hybrid RE[1] accounted for 56% of Q1, 2024 tenders due to **increased demand of storage**; expected to account for **30–40% of new capacity addition by 2030**
- GoI[5] announced plans to increase nuclear capacity to ~22.5 GW by 2031, accounting for **~9% of India's electricity by 2047**

Evolving energy markets: **Higher RE[1] volumes** (~14% of generation in 2022–23), **short-term trade** (grew at 9% in 2022–23 vs. 2% in generation volume growth), **greater RE[1] adoption** (e.g., GTAM, GDAM[6]), **market-based ancillary services**

[1] Renewable energy
[2] Battery Energy Storage System
[3] Carbon Border Adjustment Mechanism
[4] Round-the Clock
[5] The Government of India
[6] GTAM: Green Term Ahead Market | GDAM: Green Day Ahead Market

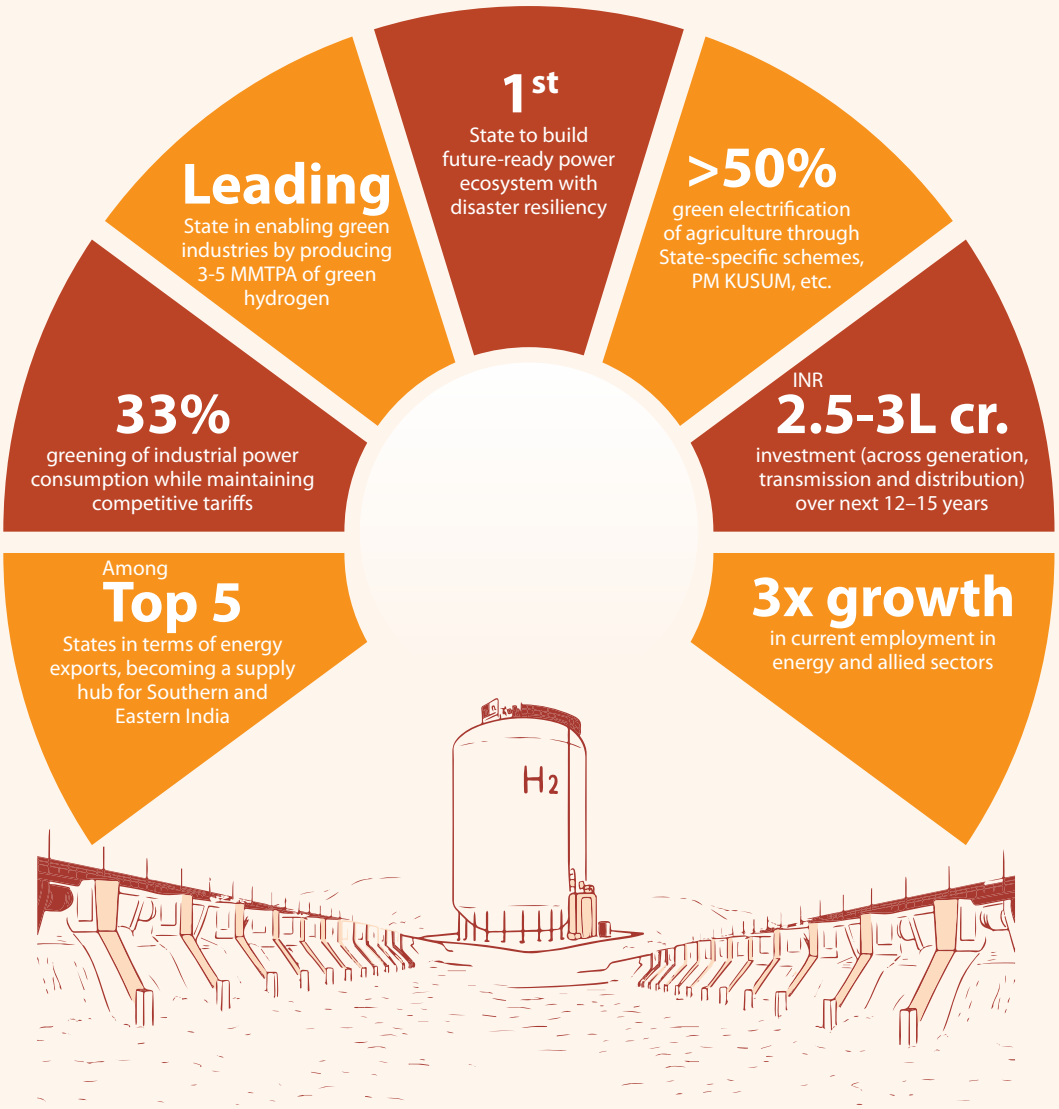
2. Vision and outcomes

Odisha, with its abundant natural resources, is strategically positioned to play a key role in powering national growth and decarbonisation goals. The State aims to meet rising industrial energy demands while advancing sustainability through renewable energy, energy storage, and green technologies.

EXHIBIT 21.8

VISION 2047

Be a pivotal force in India's energy story, becoming a self-sufficient energy hub and a major exporter, ensuring balanced and sustainable future



To achieve these goals, the State will track the following key outcomes:

EXHIBIT 21.9

Key outcomes	Unit	Current status	2029	2036	2047
Per capita domestic consuption of electricity	kWh/person	223	248	360	430
Installed renewable energy capacity[2]	% of total installed capacity	18	36	60	70
Renewable energy generation	% of total generation	10	20	45	55
Emissions reduction from thermal power plant (against 2024 level)	%	0	10	25	40
Aggregate technical and commercial (AT&C) losses[4]	%	22	15	10	7
Installed pumped storage (PSP) capacity	% of India's PSP capaciy	0	5	15	30
Installed green hydrogen capacity	MMTPA	0	1	3	5
Transmission to generation capacity ratio	MVA/ MW	3.2	4	5	6

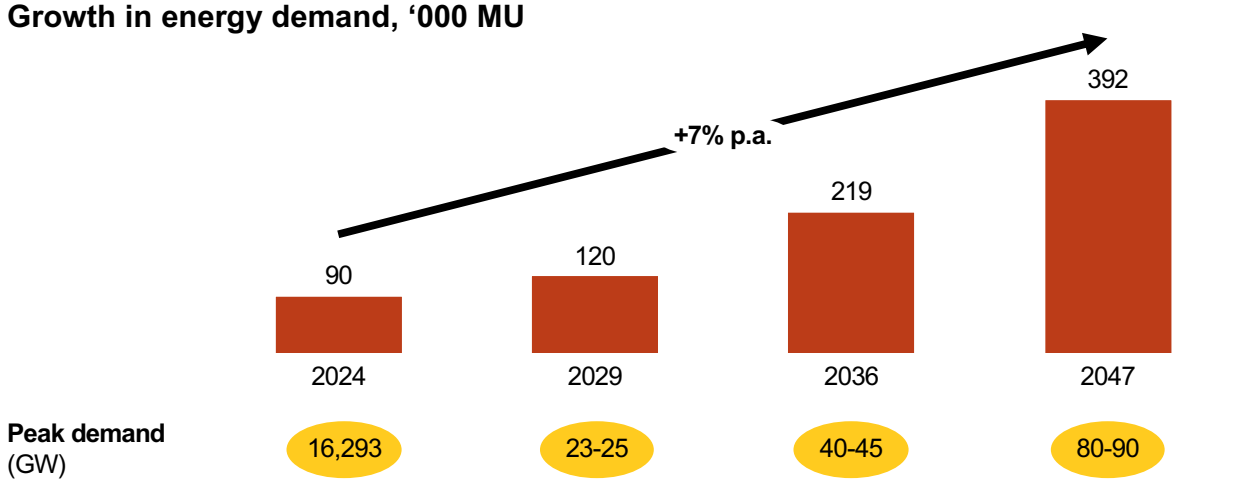
Source: Odisha Economic Survey Report 2023-24, PFC Report, CEEW, IEA

2.1 Energy demand projections

Odisha's energy demand, driven by the State's robust economic expansion, is expected to experience significant growth in the coming decades. With an anticipated 9.5% real GSDP growth until 2047, energy consumption is projected to rise at a minimum 7% CAGR over the long term, outpacing the national average. This translates into 4.5 times increase in energy demand, from about 90,000 MUs in 2024 to 400,000 MUs by 2047. Similarly, peak demand is expected to rise from 16,293 MW in 2024 to a staggering 85,000-90,000 MW by 2047, reflecting the growing industrial and commercial needs of the State. This is illustrated below:

EXHIBIT 21.10

Growth in energy demand, '000 MU



This increase would be more pronounced if Odisha scales its power exports to neighbouring Southern and Eastern States. The key drivers of this growth are:

- **Expansion of manufacturing industries**, particularly in metal downstream, chemical manufacturing, etc., will significantly drive energy demand. For example, metal downstream processes like smelting, refining, and rolling consume at least 4-5 times more energy than basic mining operations such as extraction
- **Scale-up of energy-intensive commercial infrastructure** with the growth of services to 50% of the State's GSVA on the back of energy-intensive sectors like data centres, Information technology (IT) or IT-enabled services (ITeS), etc.
- **Rise in food processing**, especially shrimp exports, which are known to have high electricity consumption. For instance, shrimp farming can consume up to 10-15 times more energy per kilogram of output than traditional fish farming
- **Increase in urbanisation rate** from 17% (as per Census 2011) to 60% by 2047, contributing significantly to higher energy demand from residential, commercial, and infrastructure sectors
- **Surge in electric vehicle (EV) adoption rates** expected to reach 80% penetration, in terms of registration, by 2047

However, factors such as improvements in energy efficiency, a transition to decentralised solar power, and crop diversification away from water-intensive crops like paddy are anticipated to moderate the overall growth in energy demand to some extent.

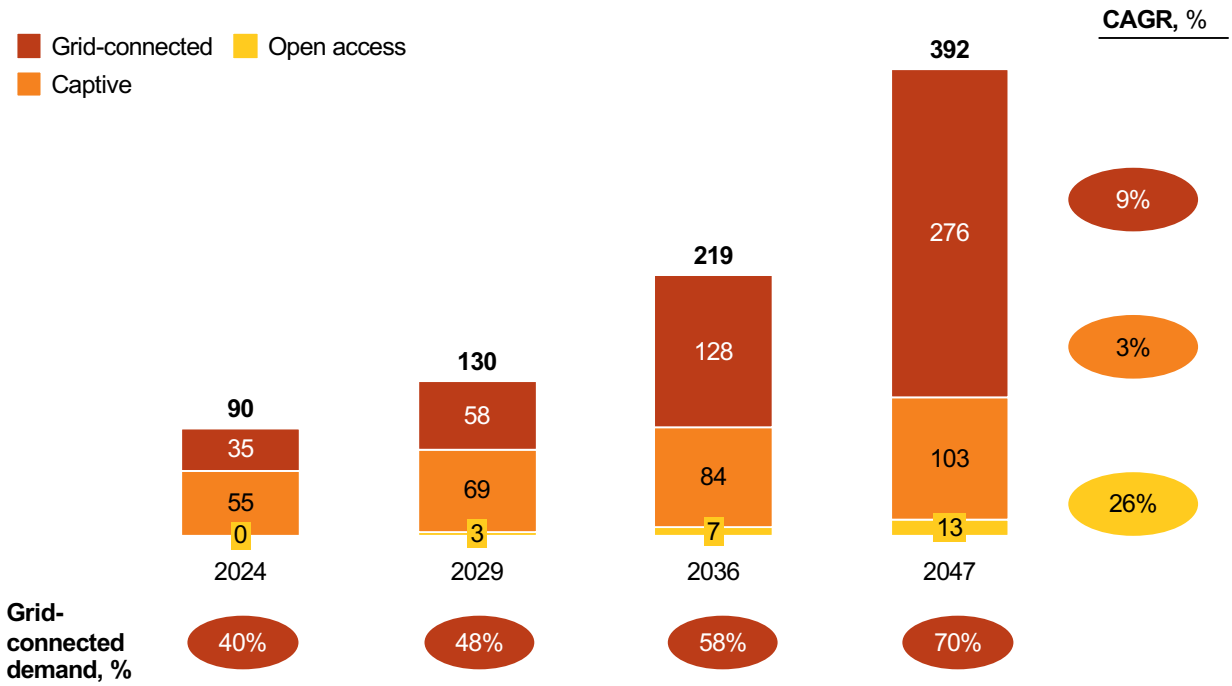
OREDA (Odisha Renewable Energy Development Agency) is spearheading several decentralisation initiatives to ensure renewable energy access, particularly in the domestic and agricultural sectors. The installation of 28.3 MW of rooftop solar capacity across Government buildings is a significant step toward meeting all Government electricity demand with renewable energy by 2036. In the agricultural sector, OREDA has already installed nearly 5,000 solar pumps under the PM KUSUM scheme, aiming to reach one lakh solar installations by 2036. These efforts reduce the State's reliance on traditional power sources, provide sustainable energy solutions that support rural livelihoods, while contributing to energy efficiency improvements. OREDA's initiatives underscore Odisha's commitment to fostering sustainable development and addressing the State's growing energy needs in an environmentally responsible manner.

The energy mix is also set to shift. The commercial sector's share of total energy consumption is expected to rise from 3% to 5-7%, driven by growth in the services sector. This will push its demand to grow at 8-9% CAGR, faster than overall energy demand. Additionally, industries are increasingly expected to shift from captive power to grid-connected energy to meet renewable purchase obligations (RPOs) and other green energy requirements, driving grid-connected energy demand at a 9-10% CAGR, compared to 3-4% for captive power.

This evolving energy landscape reflects Odisha's growing industrial base, the expansion of its energy-intensive sectors, and the State's transition to cleaner energy sources to meet both economic and environmental goals. This shift is illustrated below:

EXHIBIT 21.11

Energy demand mix, '000 MUs



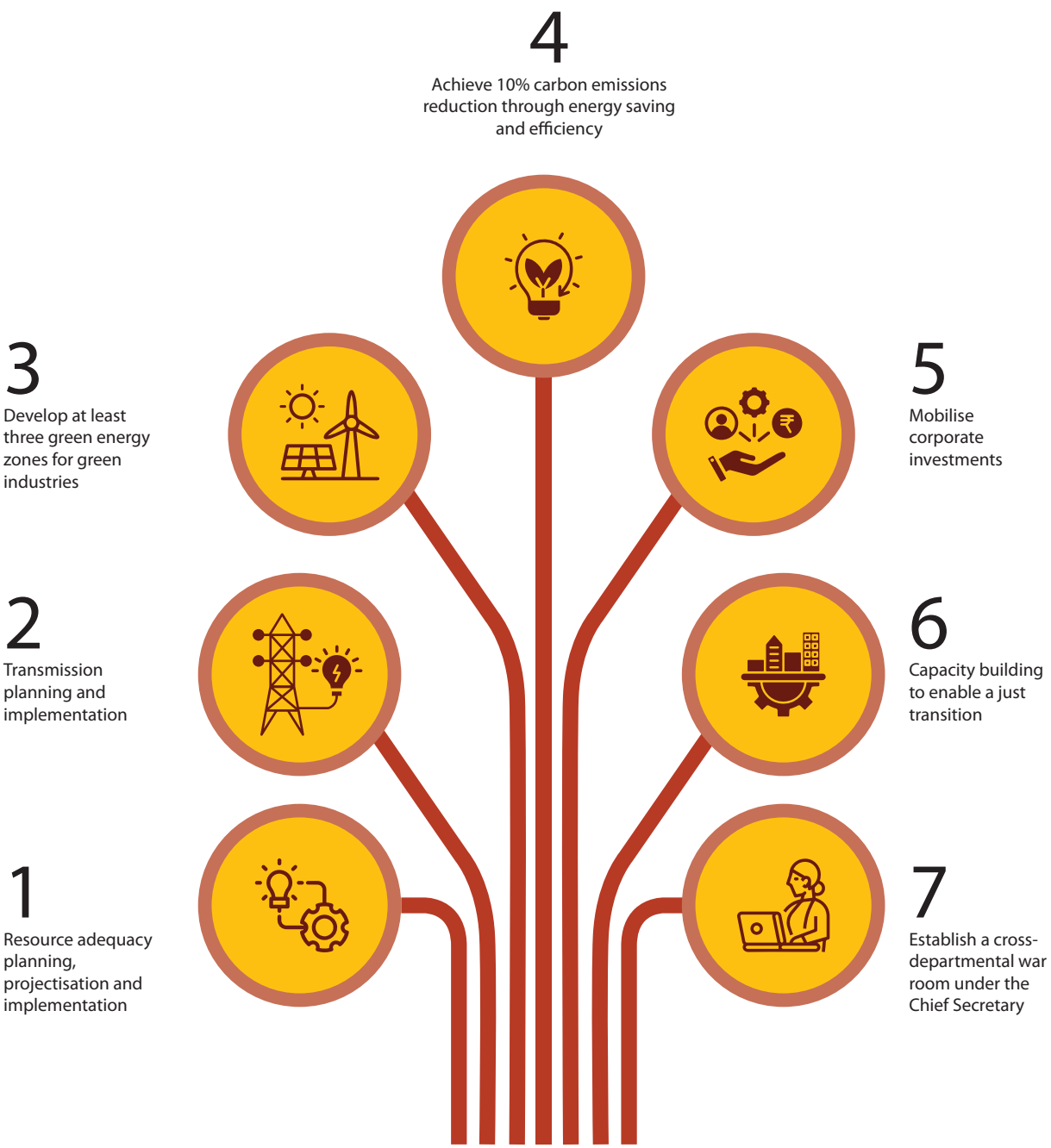
Odisha is well poised to achieve these ambitious goals through targeted programmes aimed at energy transition and by fostering strong collaborations with the corporate sector. With ongoing investments in infrastructure, policy support, and a favourable business climate, the State is already creating a robust framework to drive innovation and attract corporate players to accelerate its energy transformation.

[7]Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyaan

3. Key initiatives

To achieve its energy ambitions, Odisha will initiate seven key interventions. The following targeted actions aimed to strengthen the energy infrastructure, drive sustainable growth, and ensure efficient integration of renewable resources, in a planned and timely manner:

EXHIBIT 21.12



3.1 Resource adequacy planning, projectisation and implementation

Odisha's growing energy demand calls for proactive resource planning and targeted project implementation to ensure a balanced, reliable supply. For this, the State plans to undertake a detailed resource adequacy planning for Odisha basis updated outcomes outlined for 2036 and 2047, including:

3.1.1 Institutionalising a five-year rolling demand forecast, focusing on key demand centres like Bhubaneswar-Cuttack-Puri-Paradip quad-city, industrial areas like Rourkela, and Jharsuguda, etc.; forecasting energy mix will be done at a block level to ensure a seamless shift towards renewable energy while addressing the State's future storage needs

3.1.2 Geo-spatial mapping of potential energy zones (e.g., Balangir for solar, and Koraput for pumped storage projects) to optimise resource deployment

3.1.3 Launching targeted policies that promote a diversified energy mix, including floating solar, renewable round-the-clock (RTC) power, nuclear, and flexible thermal solutions

3.1.4 Setting up a task force for quickly implementing pumped storage projects (PSP), such as the planned 1.7 GW PSP by OHPC, streamlining feasibility studies and approvals. This will also include policy benchmarking to enable interventions such as allowing corporate players to draw RE from outside the State or providing viability gap funding (VGF) for pilot projects to increase their investments

3.1.5 Exploring flexibility of existing thermal plants, conducting feasibility studies (e.g., Talcher and Odisha Power Generation Corporation Ltd. (OPGC) IB plants) to assess efficiency improvements

Additionally, the State, through GRIDCO, will establish bilateral agreements with both domestic and international partners. Domestically, this includes power-deficit States like Tamil Nadu and Karnataka for long term energy exports. Internationally, GRIDCO can help facilitate partnerships with stakeholders from regions like Japan, South Korea, and the European Union, positioning Odisha as a central hub for green hydrogen exports.

3.2 Transmission planning and implementation

Strengthening and expanding Odisha's grid is critical for accommodating rising demand and integrating renewable energy sources effectively. For this, the State will:

3.2.1 Conduct a study on existing infrastructure gaps and identify technologies for disaster resiliency, with a focus on vulnerable coastal areas within 30 km of the shoreline

3.2.2 Develop a detailed grid strengthening and expansion plan, integrating smart grid technologies for efficient energy management; achieve near 100% digitalisation in the distribution sector by 2047

3.2.3 Expand inter-State transmission system (ISTS) connectivity to the Southern and Eastern States, especially focusing on RE-rich districts like Koraput

3.2.4 Design a tendering strategy under the tariff-based competitive bidding (TBCB) route to facilitate corporate investments

3.2.5 Launch a pilot smart grid initiative in the Bhubaneswar-Cuttack-Puri-Paradip belt to enhance real-time monitoring and grid automation through smart meters, IoT integration, etc.

3.2.6 Identify high-priority, high-volume corridors to convert them into high-voltage direct current (HVDC) lines

3.3 Develop at least three green energy zones exclusively for green industries

3.3.1 Land identification and zone development

- Identify green industries that require majority power from green sources, e.g., green hydrogen, green steel, and green data centres
- Acquire land for and develop three geographically strategic locations based on proximity to renewable energy sources, industrial demand centres, and infrastructure connectivity
- Estimate aggregate and peak energy demand and install large-scale renewable power plants (solar, wind, and hybrid, etc.) in partnership with corporate developers, ensuring adequate spare capacity in case of shortage
- Provide subsidies or soft loans for retrofitting energy-efficient technologies (boilers, furnaces, motors) for players with captive energy sources
- For industries consuming energy from outside the district or State, develop green energy transmission corridors
- Develop 7-8% capacity in energy storage systems (ESS) like batteries and pumped hydro storage for round-the-clock supply

3.3.2. Regulatory support

- Provide tax exemptions, reduced land costs, and priority clearances for green manufacturing units. For instance, Poland's Special Economic Zones offer tax exemptions up to 15 years for eco-friendly industries
- Monitor and certify industries within the zone as 'Green-only' or 'Green factory' to enhance investor trust, especially for export-oriented industries

3.4 Achieve 10% carbon emissions reduction through energy saving and efficiency

3.4.1 Enable energy savings in high-emissions sectors

- Identify top sectors contributing to energy emissions, like industries and transportation, etc.
- Develop de-carbonisation pathways for each sector, in alignment with national and State goal of emission reduction
- For industries, expand the 'Perform, achieve and trade (PAT) scheme' to major and high-growth sectors like mining and sea-food processing. Additionally, provide incentives to companies to adopt energy efficient machinery and practices
- Launch an 'Energy efficient buildings mission' to ensure compliance to the 'Energy Conservation Building Code (ECBC), 2022' and replacement of all the inefficient appliances in public buildings, followed by commercial and domestic buildings (in a phased manner)
- Increase the penetration of electric vehicles across the State (detailed in ' 'Logistics, infrastructure and connectivity' chapter) and increase ethanol blending in fuel for internal combustion engine (ICE) vehicles
- Enable accelerated adoption of PM KUSUM component 'C' across all major agriculture districts

3.4.2 Ensure financing and robust monitoring

- Form a task force under the Principal Secretary to detail strategy and monitor execution
- Apply for Central Government grants, green bonds, climate funds and concessional loans from multi-lateral institutions and partner with corporate to ensure adequate funding

3.5 Mobilise corporate investments

Leveraging corporate collaboration is vital in attracting investment and accelerating development in the State's energy sector, especially in new technologies like storage, floating solar, and small modular reactors for nuclear energy. The State will assess the funding requirements for the projects identified through resource adequacy plan and target a public-private split for the major investments. To achieve this, it will:

3.5.1 Set up a 'State green energy transition fund' to provide initial investments to support energy transition, acting as anchor for attractive corporate investments

3.5.2 Establish a task force to identify and promote innovative financing tools like a Fund-of-funds (FoF) through investment roadshows targeting energy sector growth

3.5.3 Collaborate with IDCO to build plug-and-play infrastructure in potential RE zones and ports like Paradip and Gopalpur, offering a streamlined set up for a end-to-end manufacturing and export of renewable energy and green hydrogen

3.5.4 Release a draft policy on green hydrogen production with incentives for corporate RE RTC or hybrid parks (e.g., Avaada's solar park) and electrolyser manufacturing (e.g., Waree's upcoming plant in Khordha)

3.5.5 Launch a policy, based on the best practices, to promote corporate investments in pumped hydro storage and floating solar projects across the State

3.6 Capacity building to enable a just transition

The transition to a clean energy future requires a skilled workforce proficient in emerging technologies like floating solar, nuclear, and smart grid management. Some of the interventions to enable this include:

3.6.1 Establish a Centre of Excellence (CoE) at Indian Institute of Technology (IIT) Bhubaneswar, collaborating with global experts and international energy institutions for R&D and advanced curriculum development in emerging technologies like floating solar, nuclear, and grid management

3.6.2 Launch a pilot programme for comprehensive workforce skill assessments to transition existing workers to new energy roles, including partnerships with global energy firms and industry-specific certificate programmes to upskill in sectors like rooftop solar installation, electric vehicle (EV) maintenance, etc.

3.6.3 Establish an energy-trading cell within GRIDCO to maximise revenue through active trading of excess generation on the Indian Energy Exchange (IEX)

3.7 Establish a cross-departmental task force

The war room will bring together key departments such as Industries, Forest, Environment and Climate Change and Water Resources. This task force will act as the central body responsible for monitoring and fast-tracking energy projects, identifying potential bottlenecks, and ensuring alignment across State-level agencies to drive energy transitions effectively. The task force will:

- **Form a high-level advisory committee** of experts to regularly evaluate advancements in energy technologies and assess their potential adoption in Odisha's energy systems
- **Appoint experts** for building and executing strategic roadmaps, such as resource adequacy planning for the State
- **Collaborate with departments** like the Department of Revenue and Disaster Management to establish a roadmap for disaster resiliency, particularly for the areas within 30 km to the coast, focusing on improving response systems for natural calamities affecting critical infrastructure
- **Implement a monitoring and feedback system** with an interface between corporate investors and State entities, ensuring continuous progress and quick resolution of bottlenecks across projects
- **Assess and address emerging sector needs** through research and policy advocacy, like the development of policies on cybersecurity, grid management, energy storage, and other technologies that can enhance energy security and system efficiency
- **Develop a performance dashboard for the Chief Secretary** to monitor progress of priority projects and set up a regular cadence for sharing updates
- **Identify and track the role of emerging technologies** and sources like biofuels, carbon sink, carbon capture and storage, and coal gasification, etc., and work with the respective departments to ensure timely implementation to support energy transition initiatives

CHAPTER

22

HARNESSING MINERAL WEALTH: LEADING IN SUSTAINABLE MINING AND METALS

Summary

Odisha is richly endowed with a significant share of India's conventional and critical mineral resources, contributing 41% of the nation's minerals by value and over 40% to the State's GST revenues. This robust mineral production underpins the growth of key downstream industries such as power, steel, and aluminium, strengthening Odisha's manufacturing base and driving infrastructure development.

The mining and metals sector is a cornerstone of Odisha's economy, **serving as a vital driver of employment, innovation, and regional development**. By fostering rapid growth in resource-rich areas, embracing modern exploration and production technologies, adhering to sustainable practices, and prioritising workforce well-being, Odisha's mining and metals industry is poised to transform the State into a developed, industrialised economy.

With a potential to attract significant investments, boost export capabilities, and secure its place on the global minerals map, **Odisha envisions becoming Asia's premier hub for mining and metals. By setting benchmarks for sustainable production and building a future-ready workforce, the State will lead India's industrial journey**.

By 2047, the State envisions the following outcomes

- **Leadership in mineral production**: Odisha will retain its position as India's top State in mineral production, with a target mining GSVA of INR 4.8 lakh crore. This will be driven by increased iron ore production of 320 MMTPA and bauxite production of 32 MMTPA, alongside coal production catering to the growing power demands of the nation
- **Dominance in metal manufacturing**: Odisha will strengthen its global position as a leader in basic metal production, with steel production growing to 165 MMTPA and aluminium production to 32 MMTPA
- **Energising downstream ecosystems**: The State will attract incremental capital investment of INR 2 lakh crore to establish mega metal parks and energise the downstream metal-processing industry
- **Sustainable growth and decarbonisation**: Odisha will champion sustainable mining practices and work towards achieving net-zero emissions by aligning with India's national decarbonisation goals

Key initiatives to achieve the outcomes

Accelerating mineral exploration

Odisha will develop a roadmap to unlock its full mineral potential by:

- Identifying and prioritising high-potential mineral zones through advanced geological surveys and data analytics
- Collaborating with international experts and technology providers to adopt cutting-edge exploration techniques and global best practices
- Establishing streamlined regulatory frameworks and offering attractive incentives to encourage domestic and foreign investments in mineral exploration

Streamlining mine operationalisation

The State aims to reduce the average time for mine operationalisation from 4.5 years to three years by 2036 through:

- Digitising permits and approval processes via single-window platforms to ensure faster clearances
- Encouraging public-private partnerships (PPPs) to leverage expertise and resources for rapid project development
- Implementing robust project management and monitoring systems to ensure timely execution and address bottlenecks efficiently

Expanding multi-modal mineral evacuation infrastructure

Odisha will modernise its transportation systems to ensure efficient mineral evacuation by:

- Increasing the share of railways, slurry pipelines, ports, and inland waterways to 80% of the transportation mix
- Developing an integrated multi-modal network to support the growing output of major mining clusters

Fostering downstream metal processing

To build a thriving downstream ecosystem, Odisha will:

- Establish state-of-the-art mega metal parks to support value-added metal processing
- Provide financial incentives, technical assistance, and skill development programmes tailored to the needs of MSMEs
- Promote innovation and technology adoption through dedicated R&D centres and collaborations between academia and industry

Odisha will focous on three key enablers

- **Preparing a future-ready workforce**: Odisha will develop a world-class workforce through dedicated skilling hubs, educational institutions, and research centres, enabling its citizens to take on roles in emerging technology-driven sectors
- **Prioritising Environmental, Social, and Governance (ESG) practices**
  - Promote sustainable land use and conservation practices
  - Enhance resource efficiency by achieving higher conversion rates of 55–60% iron ore grades to pellets, and reducing waste and rejection
  - Ensure worker safety and well-being through targeted welfare programmes and community partnerships
- **Advancing decarbonisation goals**: Odisha will lead efforts in the decarbonisation of the mining and metals sector, aligning with India's goal of net-zero emissions by 2070

Over the next 24 months, the State will

- **Collaborate with the Central Government** to amend policies for boosting mineral exploration, including excluding exploration from the definition of 'Non-forest activity'
- **Establish an inter-departmental committee** led by the Additional Chief Secretary, Steel and Mines Department, to streamline mine operationalisation timelines
- **Prepare a comprehensive action plan** for expanding multi-modal mineral evacuation networks in major mining clusters
- **Launch a skill-mapping initiative** to upskill the workforce in emerging technologies, including a roadmap for re-skilling existing workers

By 2047, Odisha's mining and metals sector will serve as a critical pillar of India's economic transformation, contributing significantly to the nation's Viksit Bharat Vision. Programmes like the **Odisha Mineral Exploration Policy** and the **Integrated Steel Plant Project** will drive resource efficiency and production capacities, while initiatives like the **Skill Development Mission** will empower local communities, creating jobs and fostering economic growth.

Through its strategic initiatives and a steadfast commitment to sustainable development, Odisha will emerge as a global leader in mining and metals, playing a pivotal role in India's journey towards a self-reliant and prosperous future.

1. Context

Odisha is India's leading producer of minerals, contributing 41% mineral production by value in India. The State is well-positioned for long-term growth with multiple endowments:

- Significant untapped resources: Less than 5% of Odisha's mineral reserves have been utilised; Odisha has India's largest resources of iron ore, coal, bauxite and chromite
- Large deposits of critical metals such as chromite (98% of India's deposits), platinum (68%) and nickel (93%)
- Access to three key ports (Paradip, Dhamra and Gopalpur) enabling the export of minerals and metals
- Advancements in process efficiency and ease of mining operations administration through integrated digital platforms such as the 'Integrated Mines and Minerals Management System (IMMMS)'
- A strong State-owned Odisha Mining Corporation (OMC), growing at 57% CAGR over the last five years with a massive turnover of INR 14.5k cr. in FY23

Given these, Odisha currently produces 41% of India's mineral by value with significant headroom for ramp-up (Exhibit 22.1). It has:

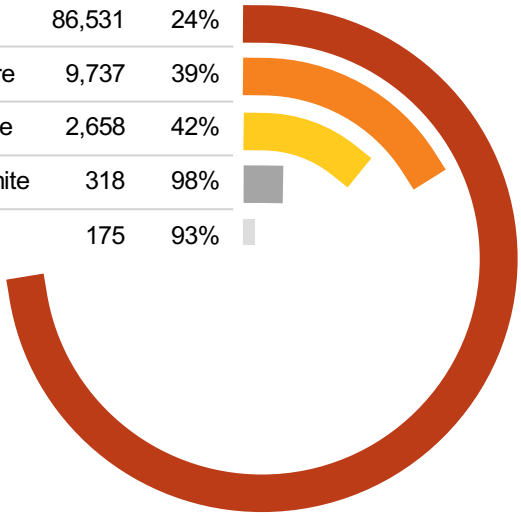
- Production of 25% of India's coal, 54% of iron ore, 74% of bauxite and all of India's chromite production in FY23
- Production of 4.8% of State's iron ore reserves and 4.7% of bauxite in FY23
- Large resources of nickel and platinum group of metals (production yet to start)
- Iron ore production growth at 7.8% CAGR in last 10 years vis-à-vis 6.4% growth at India-level

Source: Odisha Economic survey; Odisha Mining Corporation Limited (OMCL), Department of Steel and Mines, Government of Odisha

EXHIBIT 22.1

Mineral production profiles of Odisha, FY23

Mineral resources in Odisha MMTPA (FY23)		Share of Odisha in India's resources
Coal	86,531	24%
Iron ore	9,737	39%
Bauxite	2,658	42%
Chromite	318	98%
Nickel	175	93%



Economics highlights
MMTPA

INR 38k cr
revenue from mining sector in FY23

>40%
contribution to State GST

10.6%
share of mining in State GSVA[2] in FY24

12%
CAGR of mining GSVA[2] from FY18 to FY22

1.7 lakh
direct employees in mining

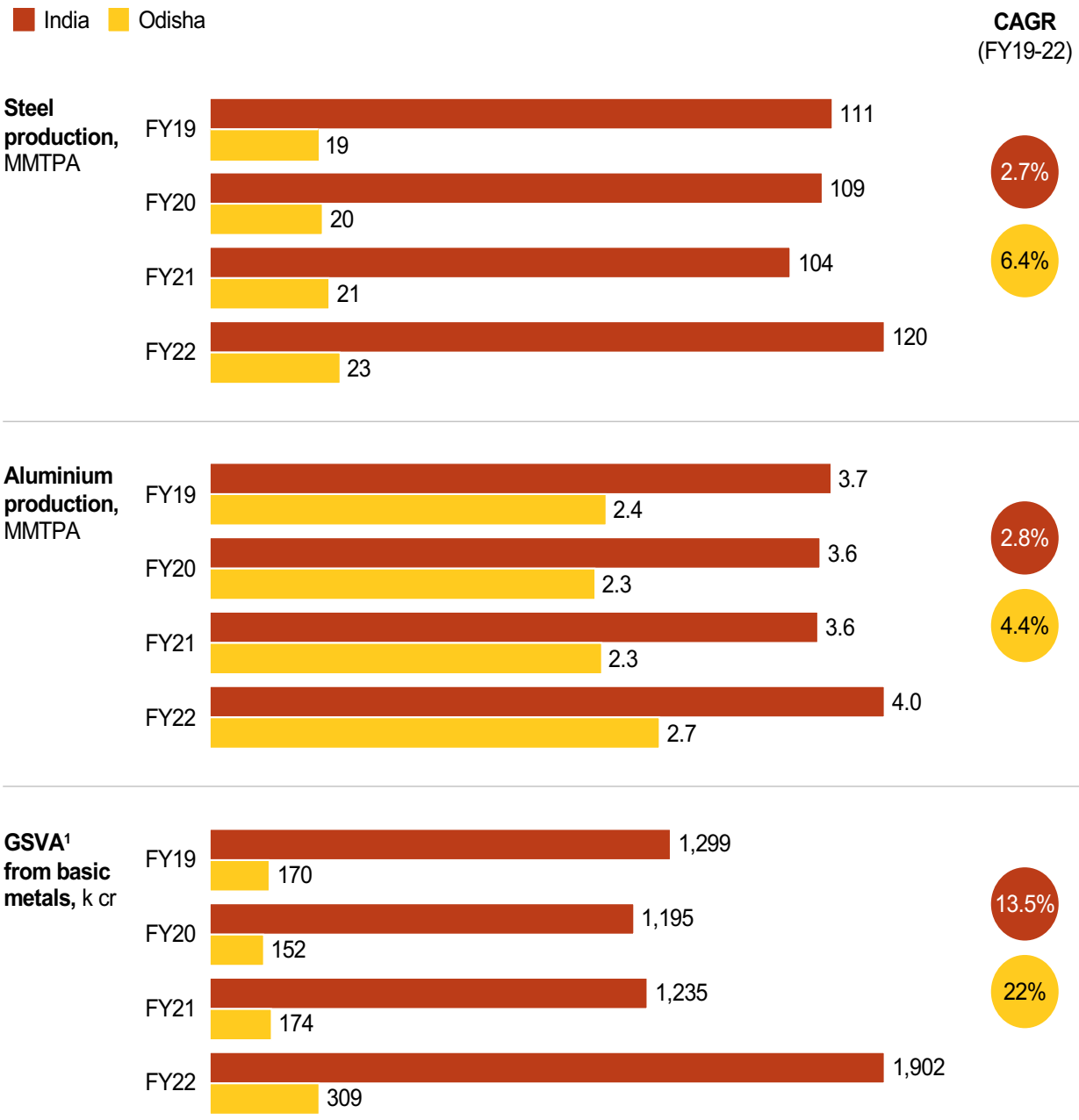
Mineral production in Odisha
MMTPA

	FY12	FY16	FY20	FY23	% share in India's production (FY23)
Total	190	242	312	404	**41%**
Coal	110	141	154	237	**24%**
Iron ore	67	83	142	155	**58%**
Bauxite	5	11	15	18	**73%**
Chromite	4	3	4	4	**100%**

Source: Directorate of Geology; Annual activity report by Department of Steel and Mines

Although Odisha produces 70% of India's primary aluminum and more than 50% of the nation's iron ore, it contributes only around 20% to the country's total steel production, as shown below:

EXHIBIT 22.2



[1] Gross State Value Addition

Source: Indian Bureau of Mines, Ministry of Steel, Ministry of Mines, Department of Steel and Mines

1.1 Key challenges

Despite being a dominant leader in mineral production in India and boasting a thriving basic metals industry, the State faces multiple challenges in mining and metal value addition, some of which are detailed below:

EXHIBIT 22.3

- **Long lead time for operationalisation**, with select sites taking up to four to five years to start operations post bid certificate award
- **Lack of advanced technology** and increase in processing cost as focus shifts to lower grade deposits and deep-seated resources
- **Increasing demand for adopting sustainable practices** providing opportunity for the State to help local companies achieve Environmental, Social and Governance (ESG) targets
- **Sub-optimal speed of ore evacuation** due to overburdened road network, coupled with limited rail line
- **Slow pace of exploration**: Limited area covered for gravity and magnetic analysis, and for sediment data collection compared to countries such as Australia where 100% covered for gravity and magnetic analysis, 91% for sediment data and 100% for seismic data
- **Small metal MSME industry** leads to value chain inefficiencies; e.g., crude metal from mills is dispatched outside Odisha even for building smaller metal fabricated products

1.2 Key trends

The following emerging trends in industry highlight an increasing emphasis on sustainable and cost-efficient extraction of low-grade conventional ores and critical minerals:

EXHIBIT 22.4

Advancements in technology are enabling the development of lower-grade ores, with the global head grade expected to decrease by 4% annually

Accelerated transition to low-emission technologies due to the imperatives for decarbonisation. Legislative measures such as the CBAM[2] could significantly impact metal exports to Europe by imposing additional carbon costs on imported good

Growing demand for metals in economies, fueled by rapid urbanisation, infrastructure development, and industrialisation. For example, India and Southeast Asia are driving increased demand for steel, copper, and aluminum, supported by expanding grid networks, renewable energy projects, and urban infrastructure growth

Increasing focus on self-reliance

- **Up to 33% of mining task-hours could be automated by 2030**, necessitating a just-transition for the labour force
- Increasing adoption of with **drones and artificial intelligence (AI)-based analytics** for mining surveillance

Expanding demand for critical metals, with global nickel demand projected to grow by 75% by 2040

New thermal power plant additions are expected to slow post-2035, while alternative uses for coal, such as coal-to-gas and coal-to-chemicals, emerge

[1] Head grade is the average grade of ore fed into a mill

[2] Carbon Border Adjusted Mechanism

Source: Global and Indian mining industry experts

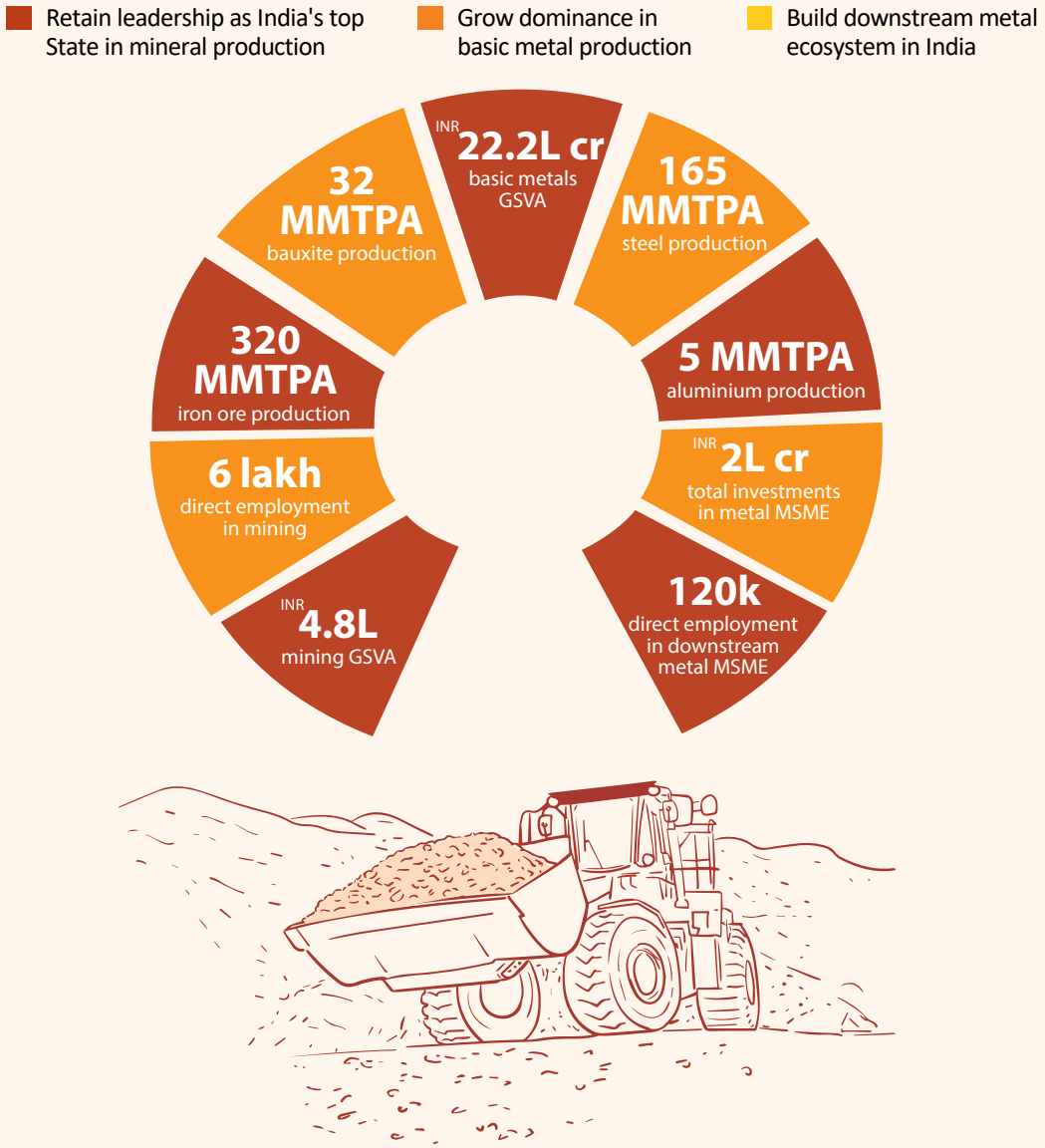
2. Vision and outcomes

Odisha's mining and metals sector will drive economic growth and innovation through sustainable practices and modern technologies, enabling the State to become a developed economy and a global minerals leader by 2047. This growth will boost employment, attract investments, and enhance export capabilities.

EXHIBIT12.5

VISION 2047

Become Asia's premier hub for mining and metals, leading India's industry through sustainable production practices and a future-ready workforce



2.1 Key outcomes

The State envisions achieving the following outcomes, as it embarks on the journey to emerge as Asia's hub for mining and metals industry:

EXHIBIT 22.6

Key outcomes	Unit	Current	2029	2036	2047
Mining GSVA	INR k cr.	68	101	250	480
Basic metals GSVA	INR k cr.	309	537	933	2220
Cumulative investments in metal MSME	INR k cr.	-	30	100	200
Employment in mining[1]	'000 nos.	200	200+	300+	600+
Employment in primary metals	'000 nos.	200	700+	1,300+	2,100+
Employment in metals MSME[1]	'000 nos.	4	30	75	125
Iron ore production	MMTPA	155	220	250	320
Steel production[2]	MMTPA	23	60	130	165
Bauxite production	MMTPA	18	22	25	32
Aluminium production[2]	MMTPA	3	4	4	5
Chromite ore production	MMTPA	3	4	5	7

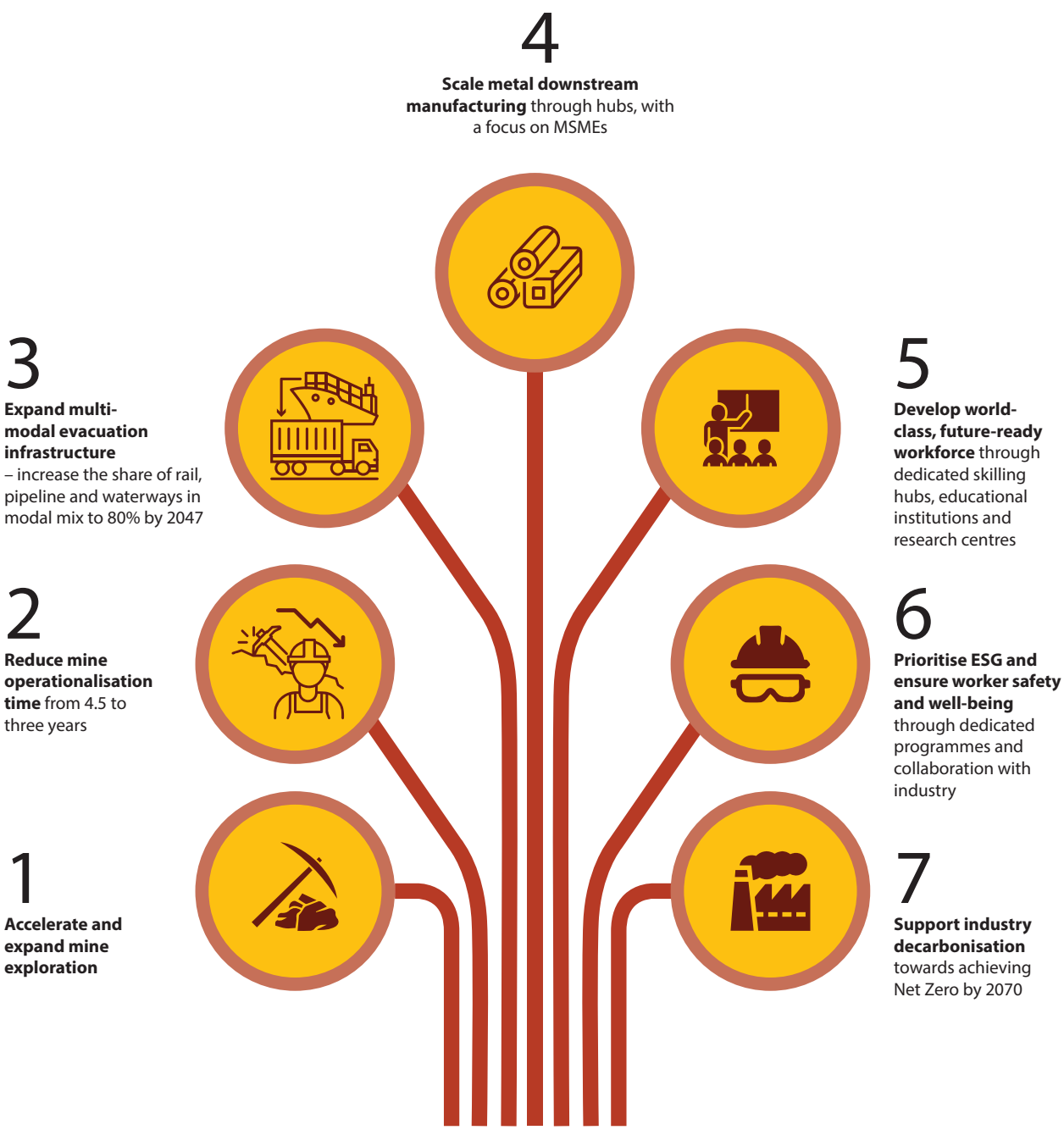
[1] Only direct employees estimated
[2] Includes supply from scrap metal

Source: Indian Bureau of Mines, Steel and Mines department

3. Key initiatives

The State plans to launch seven strategic initiatives and enablers across the value chain to ensure outcomes are delivered on time:

EXHIBIT 22.7



3.1 Accelerate and expand mine exploration

3.1.1 Invest in the acceleration of exploration to establish the extent of mineralisation and develop baseline data of conventional minerals (Iron, bauxite, chromite, and coal, etc.):

- Target covering G3 or G2 level exploration for all basins
- Expand baseline geo-physical and geo-chemical data generation of the State by expanding gravity and magnetic analysis, sediment and seismic data collection, etc.
- Create database and roadmap for auction based on exploration to engage potential investors

3.1.2 Launch targeted investment promotion programmes to attract corporate participation (juniors) and significantly ramp up exploration. For this, the State may also explore feasibility of composite bids

3.1.3 Leverage artificial intelligence (AI) and drones for mineral survey, reserve assessment and pilferage reduction

3.1.4 Collaborate with the Government of India to **consider excluding exploration from the definition of 'Non-forest activity'** and hence, enhance the number of bores permitted within one square kilometre without requiring forest clearance (with appropriate safeguards)

3.2 Reduce mine operationalisation time from 4.5 to three years

3.2.1 Set up an inter-departmental institutional mechanism such as high powered committee[1] to provide focused industry support and reduce lead time for awarding post bid-certificate to around three years

3.2.2 Set up a technical criterion in bid invitation notice incentivising operationalisation earlier than three years, post the bid certificate award

3.2.3 Work with MoEFCC[2] to simplify administrative processes involved in the verification and clearance of mine sites

3.2.4 Explore commissioning a baseline SIA and EIA study[3] via OMC[4] in parallel to bidding stage for priority assets, to reduce the lead time for operationalisation

[1] High empowered committee to consist the following and any other relevant departments - Forest, Environment and Climate Change, Revenue & Disaster Management, and Steel & Mines

[2] Ministry of Environment, Forest and Climate Change, Government of India (GoI)

[3] SIA: Social impact assessment; EIA: Environmental impact assessment

[4] Odisha Mining Corporation

3.3 Expand multi-modal evacuation infrastructure – increase the share of rail, pipeline, ports and waterways in modal mix to 80%

Constitute an inter-departmental committee including Steels & Mines Department, Commerce & Transport Department, and Forest, Environment and Climate Change Department, among others to:

- **Create a comprehensive five-year action plan** with specific milestones to enhance the mining sector's evacuation network, aiming for 65% mechanised evacuation by the early 2030s
- **Develop and issue guidelines for assessing ore grades transported** via slurry pipelines to prevent unfair practices and leakages
- **Create a budget allocation roadmap and corporate financing strategy** for evacuation infrastructure, aligned with the action plan estimates:
    - Action roadmap, facilitate land allocation on priority, conduct roadshows to attract investors for public-private partnership (PPP) projects, etc.
    - Collaborate with the Central Government to fast-track railway projects and sanction new projects in accordance with evacuation plan e.g., recent Jharsuguda to Raygada and Bargarh to Nuapada Line
    - Commerce & Transport Department to fast-track and implement inland waterway projects with target to complete all six National Waterways (NWs) in Odisha by 2047 as part of the roadmap
    - Evaluate the feasibility of using waterways for evacuation in key mining districts
    - Ensure sufficient port capacity to support coastal shipping
    - Perform a detailed assessment of slurry-pipeline feasibility, including socio-economic impacts

3.4 Scale up metal downstream manufacturing through hubs with focus on MSMEs

3.4.1 Develop and energise mega metal parks of 5,000 to 8,000 acres in plug-and-play model for metal value addition industries, with a special focus on the corridor created by Biju Expressway

3.4.2 Increase spending in skill development with dedicated hubs in the mega parks to create necessary talent pipeline for value-additive manufacturing

3.4.3 Launch an employment-linked incentive scheme offering both fiscal and non-fiscal benefits, ensuring that industry begins construction within one year of receiving a license or approval

3.4.4 Set up a special authority for management of the proposed 'Metal value-addition' parks to help fast-track clearances, conduct roadshows to attract investments, and ensure adequate skilling and supply of labour, etc.

3.5 Develop a world-class, future-ready workforce

3.5.1 Commission a detailed study within 12 months to prepare **a skilling roadmap for new jobs and competencies required** as the mining sector shifts towards automation and industrial artificial intelligence (AI)

3.5.2 Build skilling hubs in all key mining districts targeting both new workers and reskilling of current workforce

3.5.3 Establish education institutes to equip local workers for technical and leadership positions in the sector:

- Set up at least one world-class mining university in collaboration with a premier global institute by 2036, offering degree and diploma programmes in mining engineering, geology or geophysics, digital, automation, AI, sustainability, etc.
- Propose a campus of the Indian School of Mines in Odisha

3.5.4 Foster industry collaborations to develop curriculum and set up COEs[7] to promote R&D

3.5.5 Launch a scheme to **fund setting up of 'Mining innovation and incubation centres'** in at least 10 engineering colleges in Odisha

[7] Centre of Excellence

3.6 Increase focus on ESG by ensuring land conservation, worker safety and well-being

3.6.1 Work with the MoEFCC[8], Government of India for **strict enforcement of mine back-filling and land restoration**

3.6.2 Transform mining villages through the 'District mineral fund (DMF)': Utilise the DMF to restore degraded land and develop essential infrastructure in mining villages, while converting at least one inactive mine into a unique tourist destination to drive economic diversification and community engagement

3.6.3 Maximise resource efficiency in iron ore processing: Prioritise the higher conversion of 55-60% iron ore grades into pellets to minimise wastage, ensure optimal utilisation of resources, and enhance supply chain efficiency

3.6.4 Set a new benchmark in worker safety and welfare: Revise worker safety policies to incorporate world-class practices, including regular safety training, modern protective equipment, comprehensive accident compensation plans, affordable health coverage, and early-retirement schemes tailored for mine workers

3.6.5 Promote mechanisation and automation in hazardous operations: Develop an incentive programme to encourage mechanisation and automation of high-risk mining activities. Offer benefits such as access to low-cost capital and reduced taxes on advanced equipment to ensure safer, more efficient operations

3.6.6 Establish a 'Zero-accident' taskforce: Form a taskforce comprising leading industry players to craft a comprehensive roadmap for achieving zero-accident mining operations. This roadmap will include modernised healthcare and accommodation facilities for workers, aligned with the updated worker safety policy, ensuring their well-being and productivity

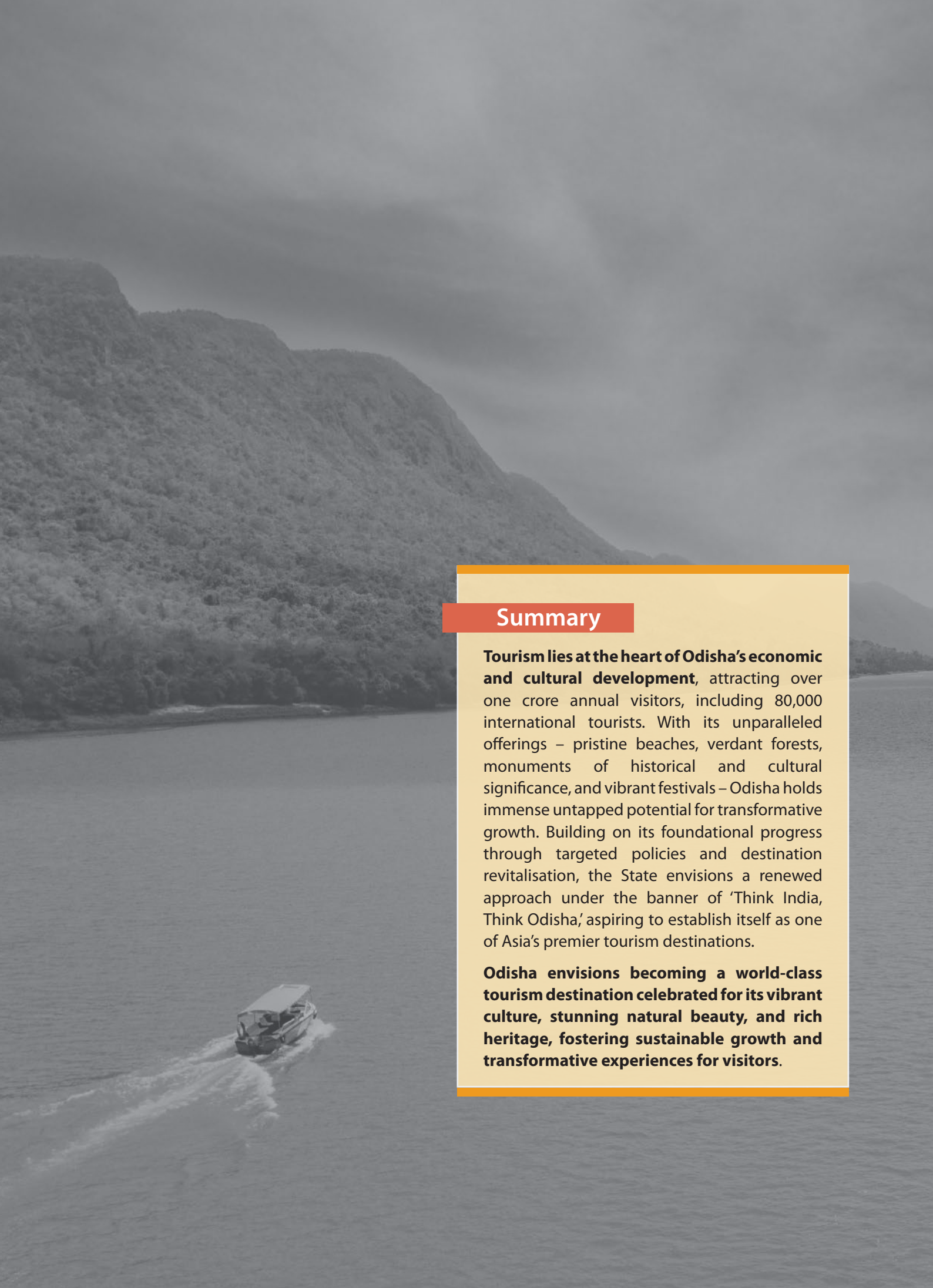
3.6.1 Advance decarbonisation goals (detailed further in other chapters)

[8] Ministry of Environment, Forest and Climate Change, Government of India (GoI)

CHAPTER

23

PREMIER TOURISM DESTINATION: THINK INDIA, THINK ODISHA



Summary

Tourism lies at the heart of Odisha's economic and cultural development, attracting over one crore annual visitors, including 80,000 international tourists. With its unparalleled offerings – pristine beaches, verdant forests, monuments of historical and cultural significance, and vibrant festivals – Odisha holds immense untapped potential for transformative growth. Building on its foundational progress through targeted policies and destination revitalisation, the State envisions a renewed approach under the banner of 'Think India, Think Odisha,' aspiring to establish itself as one of Asia's premier tourism destinations.

Odisha envisions becoming a world-class tourism destination celebrated for its vibrant culture, stunning natural beauty, and rich heritage, fostering sustainable growth and transformative experiences for visitors.

By 2047, the State envisions the following outcomes

- **Global eco-cultural tourism hub**: Rank among the top five eco-cultural tourism destinations in Asia by developing **15** world-class destinations that showcase Odisha's unique cultural and ecological assets
- **Tourist volume**: Achieve five crore Domestic Tourist Arrivals (DTA) and seven lakh Foreign Tourist Arrivals (FTA) annually
- **Hospitality infrastructure**: Expand star-category hotel room inventory to 25,000 keys, with an interim target of 15,000 by 2036
- **Employment generation**: Create over 25 lakh jobs by 2047 and foster a highly skilled tourism workforce through public-private partnerships (PPP) and the establishment of skilling centres at key destinations
- **Sustainable tourism**: Promote eco-friendly practices, inclusive development, and community-driven tourism initiatives to preserve Odisha's natural and cultural heritage

Key initiatives to achieve the outcomes

To achieve these outcomes, Odisha will initially prioritise the development of 10 high-potential destinations, selected based on their natural endowments, existing infrastructure, and potential for growth. This will serve as the foundation for broader sectoral transformation.

Odisha's tourism strategy is anchored on four core pillars, which will be implemented across each priority destination:

Destination development and management

- Develop unique identities for each destination through comprehensive master plans
- Enhance infrastructure, including transport connectivity, visitor amenities, and safety measures
- Implement sustainable practices to preserve the ecological balance and cultural authenticity of each site
- Establish mechanisms for efficient operations and maintenance to ensure long-term viability

Marketing, branding, promotion and digital initiatives

- Launch a global branding campaign to position Odisha as a premier tourism destination
- Organise high-profile events, such as cultural festivals and international tourism fairs, to attract attention to Odisha's offerings
- Develop digital platforms and mobile applications to provide seamless visitor experiences, including e-bookings, virtual tours, and digital payments
- Collaborate with travel influencers, film producers, and global media outlets to showcase Odisha's attractions to international audiences

Capability building and skill development

- Establish state-of-the-art training centres to upskill local communities in areas such as hospitality, food and beverage services, transportation, and guided tours
- Partner with global and national institutions to provide advanced training and certification programmes
- Encourage women and youth participation in tourism-related enterprises to promote inclusive growth
- Create a pool of multilingual guides and service providers to cater to international tourists

Investment promotion

- Engage with global and domestic investors to attract capital for destination development
- Introduce customised investment packages, including land allotments, tax incentives, and capital subsidies, to incentivise private sector participation
- Facilitate public-private partnership (PPP) models for the development and management of tourism infrastructure
- Benchmark successful tourism models from States like Kerala and Rajasthan to replicate best practices

Odisha will focus on the following initiatives over the next 24 months

- **Set up an institutional structure**
  - Form a high-powered committee to oversee the implementation of the tourism strategy
  - Establish State and cluster-level tourism councils for decentralised governance and monitoring
  - Set up Destination Management Organisations (DMOs) as special purpose vehicles to manage and coordinate the development of two priority destinations: Hirakud and Chilika
- **Master planning for 15 priority destinations**
  - Engage national and international experts to prepare detailed master plans for 15 high-priority destinations
  - Identify key infrastructure projects, such as roads, airports, and utilities, and map out investment requirements
  - Outline destination-specific strategies to enhance visitor experiences and promote unique selling propositions (USPs)
- **Finalising and roll out incentive packages**
  - Develop and roll out tailored incentive packages, including progressive land allotment policy, capital, subsidies, and training support schemes etc.
  - Create a single-window clearance mechanism to streamline approval processes for investors

- **Monetisation of Government-run tourism assets**
  - Transition all Government-managed tourism assets to PPP models to ensure professional management and efficient service delivery
  - Develop strategies for revenue generation, including leasing, ticketing, and merchandising

Odisha's ambitious tourism Vision aligns seamlessly with the broader goals of 'Viksit Bharat'. By leveraging its rich cultural heritage, breath-taking natural landscapes, and unique attractions, Odisha aims to emerge as a global tourism hotspot. The State's strategic focus on infrastructure development, skill enhancement, and integrated marketing will significantly contribute to:

- Increasing the tourism sector's contribution to Odisha's GSVA
- Boosting employment opportunities and fostering inclusive growth
- Showcasing India's rich cultural diversity and ecological treasures to the global community

1. Context

Odisha's tourism sector holds immense untapped potential, poised to serve as a transformative pillar of the State's socio-economic growth. With annual tourism spending nearing an impressive INR 9,870 crore, the sector already makes a substantial contribution to the State's economy. Complementing this is a robust allocation of INR 800 crore in the tourism development budget, demonstrating Odisha's unwavering commitment to elevating its tourism landscape. This financial dedication, combined with the sector's intrinsic potential, as detailed in Exhibit 23.1, provides a strong foundation for accelerated growth through strategic investments, enhanced infrastructure, and innovative initiatives aimed at attracting both domestic and international tourists. The combination of substantial tourist expenditure and strategic Government investments creates a fertile ground for unprecedented growth and innovation. Leveraging this potential through comprehensive policies, robust infrastructure development, and private sector engagement, Odisha is well-positioned to unlock a new era of sustainable tourism that benefits both visitors and local communities.

EXHIBIT 23.1

Economic highlights

~INR 5,000 cr.

Hotels sector GSVA (FY24[1])

Around 7% real CAGR (FY12-20) v/s arounc 7% Odisha GSDP

INR 9,870 cr.

tourism spending in Odisha in 2023

~12 lakh

direct jobs (2016[2])

~INR 800 cr.

tourism budget (FY25[4])
~23% CAGR (FY12–24)

Other highlights

Over **one crore**

total tourism footfalls

Equivalent to around 0.5% of domestic visitors in India

45,000

foreign visitors (’23) of which around 36% come from Asia

Equivalent to around 0.3% of foreign visitors in India

~8%

peak CAGR of total tourism visits (’13–’19)

Vis-à-vis approx. 12% growth in India’s total tourist visits during the period

INR 2,655

domestic tourist spending per day

Vis-à-vis **~INR 6,000** per day willingness to spend of domestic tourists in international markets

INR 4,275

foreign tourist spending per day

Vis-à-vis **~INR 8,000** spending by foreign tourist per day in Kerala

[1] Nominal Gross Value Added as reported under 'Hotels and restaurants' in GVA estimates published by MoSPI
[2] As estimated by National Council of Applied Economic Research (Tourism satellite accounts)
[3] Tourism statistics as reported by Tourism Departments of India, Odisha, Kerala, and study by Expedia

The State boasts an array of natural and cultural assets[1]:

- **Natural diversity**

Odisha offers a remarkable blend of natural beauty and ecological wealth. With a coastline stretching over 575 km, the State is blessed with 34% forest and tree cover, far exceeding the national average of 21.71%. It is home to Asia's largest saltwater lagoon - Chilika Lake, as well as India's second-largest mangrove forest and 12 major rivers, including the mighty Mahanadi. Together, these features create a landscape of extraordinary variety and immense natural value

- **A haven for biodiversity**

Odisha is a sanctuary for wildlife and biodiversity, hosting 18 wildlife sanctuaries, including two renowned tiger reserves. The State attracts over 230 species of migratory birds each year, while its beaches serve as a nesting ground for more than 10 lakh Olive Ridley Turtles. Odisha is also the only place in India where the rare and beautiful Irrawaddy dolphins can be found, underscoring its ecological significance

- **A treasure trove of culture and heritage**

Steeped in history, Odisha is a cultural and architectural marvel. The State is home to over 1,000 ancient temples, including the revered Lord Jagannath Temple in Puri and the awe-inspiring Konark Sun Temple, a UNESCO[1] World Heritage Site. Beyond its temples, Odisha also preserves over 100 Buddhist heritage sites, comprising ancient monasteries, cave complexes, and living Buddhist villages, each echoing the stories of its glorious past

- **A legacy of civilisation and wisdom**

Once the heartland of the powerful Kalinga dynasty (circa third century BCE), Odisha has a heritage that dates back more than two millennia. A pivotal centre of Buddhist learning and culture since the sixth century BCE, the State has played a vital role in shaping the spiritual and cultural fabric of India

- **Living traditions of art and craft**

Odisha's rich cultural tapestry is alive and thriving. The State is home to vibrant tribal communities that have preserved their unique traditions for generations. Odisha is renowned for its master craftsmen and artisans, with over 50 traditional crafts practised by more than 150,000 skilled individuals. Signature crafts include the exquisite 'Nuapatana' and 'Maniabandha' handloom textiles, intricate silver filigree, vibrant 'Batik work', and the world-famous 'Pattachitra' paintings. These living traditions not only reflect the State's creative brilliance but also contribute to the livelihoods of countless communities

Odisha is more than just a destination; it is a vibrant, living testament to nature's beauty, cultural richness, and human ingenuity. Whether through its breathtaking landscapes, extraordinary wildlife, or timeless heritage, Odisha continues to inspire and enchant all who visit or call it home.

[1] United Nations Educational, Scientific and Cultural Organisation

Leveraging these endowments, the Department of Tourism is advancing various initiatives for the sector growth:

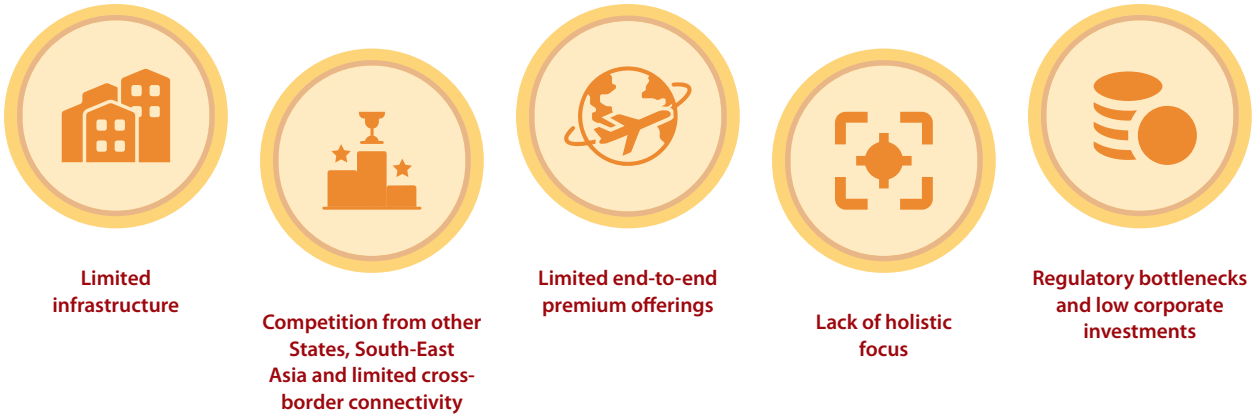
EXHIBIT 23.2

Key priority areas	Details
Destination development and management	• Integrated tourism masterplans for 15 major destinations • Tourism and eco-tourism roadmaps 2030 • Various special projects such as boat club, canal front, promenade, and eco cottages • Tourism infrastructure gap assessment for 30 smaller destinations
Investment facilitation	• Tourism Policy, 2022 released with targeted incentives and land bank allotment • 'GoSWIFT' portal for single window clearance
Marketing, promotion and digital initiatives	• Promotional campaigns, including influencer marketing • Marketing and branding campaigns, including hosting Odisha Travel Bazaar, and participation in travel trade marts • Digital initiatives • Mega events, e.g. 'Eco-Retreat Odisha', and National Chilika Birds Festival • Support to festivals e.g. Konark Festival, and sports events • Government-operated niche offerings, e.g., 'EcoTour' nature camps, and thematic 'Odisha Walks'
Capability building and skill development	Multiple training programmes conducted in last five years, including: • Eco-tourist guide training • Foreign language training programme • Workshops such as 'Green investment in tourism', and Residential Training Programme for Particularly Vulnerable Tribal Youth on Ethnic and Eco-tourism, etc.

1.1 Key challenges

While the tourism sector has experienced positive developments from these initiatives, it still encounters a few challenges:

EXHIBIT 23.3



- **Limited infrastructure for premium tourists**

The State faces a shortfall in high-end infrastructure to cater to discerning travellers. With approximately two thousand 3/4/5-star hotel keys, Odisha's ability to attract premium tourists remains constrained. Furthermore, cross-border air and rail connectivity is sub-optimal, skilled labour is in short supply, and the availability of high-quality healthcare services is limited. Enhancing these facilities could significantly improve the overall tourism experience

- **Stiff competition from other States and South-East Asia**

Odisha competes with other Indian states and South-East Asian countries that actively promote their destinations with attractive packages, incentives, and superior connectivity. These regions often benefit from stronger international awareness and infrastructure, making it challenging for Odisha to secure a larger share of the tourism market

- **Limited end-to-end premium offerings**

High-spending tourists seek seamless and exclusive experiences. Odisha currently lacks comprehensive premium offerings, especially for niche markets such as wellness and cultural tourism. Developing tailored experiences and improving service standards could help attract and retain these valuable tourists

- **Lack of a holistic approach to tourism development**

There is a need for a more strategic and unified focus on tourism:

- **Quality and niche products**: While Odisha boasts extraordinary natural and cultural assets, it lacks the development of high-quality niche tourism products
- **National and international presence**: Odisha's tourism sector requires stronger representation on global platforms to enhance its visibility and attract interest from international travellers and investors
- **Skilled workforce**: A lack of adequately trained hospitality professionals limits the State's ability to deliver high-quality services consistently

- **Regulatory and investment challenges**

Certain regulatory frameworks and budgetary constraints pose challenges to tourism development:

- **Eco-sensitive and regulated zones**: While Odisha's commitment to environmental sustainability is commendable, development restrictions under the 'Eco-sensitive zones', 'Coastal regulation zones', and 'Wetland rules' often result in delays or constraints for tourism projects
- **Capital investments**: Limited corporate investment and budget allocations for capital expenditure make it difficult to build and upgrade critical tourism infrastructure. Expanding targeted incentives, and strengthening private sector facilitation could help attract investment and accelerate development

By addressing these challenges with thoughtful, sustainable, and inclusive solutions, the State envisages that it can further elevate its tourism industry, create more employment opportunities, and position itself as a global tourism destination while preserving its unique cultural and natural heritage.

1.2 Key trends

To tackle these challenges and become a premier tourism destination, it is critical to learn and adopt key trends driving progress in other geographies, as detailed below:

EXHIBIT 23.4

Changing destination preferences: Domestic and intra-regional travel projected to account for ~90% of tourist spending by 2030

Evolving Gen Z, millennials'[1] travel preferences: Most keen to travel internationally, spend on experiences to unique, undiscovered destinations; driven by social media for sharing travel inspiration

New emerging source markets in South-East Asia (SEA): Expected spending of ~USD 370 bn by SEA travelers by 2030; new markets include Malaysia, and Korea, among others

Emerging segments: Experiential travel focused on authentic, unique, personalised and local experiences; digital nomadism and long-term stays, events, 'bleisure', adventure, wellness, staycation, and MICE[2] tourism; hobbies and communities-based trips

India emerging as a global source market with more than two crore outbound in 2022; significant share (~12%) of Indians amongst tourist footfalls within the SEA

'Off-beaten path' messaging: Used successfully in promotions by less discovered destinations, e.g., Saudi Arabia's '#WhereInTheWorld' campaign

[1] Gen Z - age 18 to 25 years; Millennial - age 26 to 41 years
[2] MICE - Meeting, Incentive, Conferences, Events

Source: United Nations World Tourism Organisation (UNWTO) statistics, India Tourism Statistics as published by the Department of Tourism (DoT)

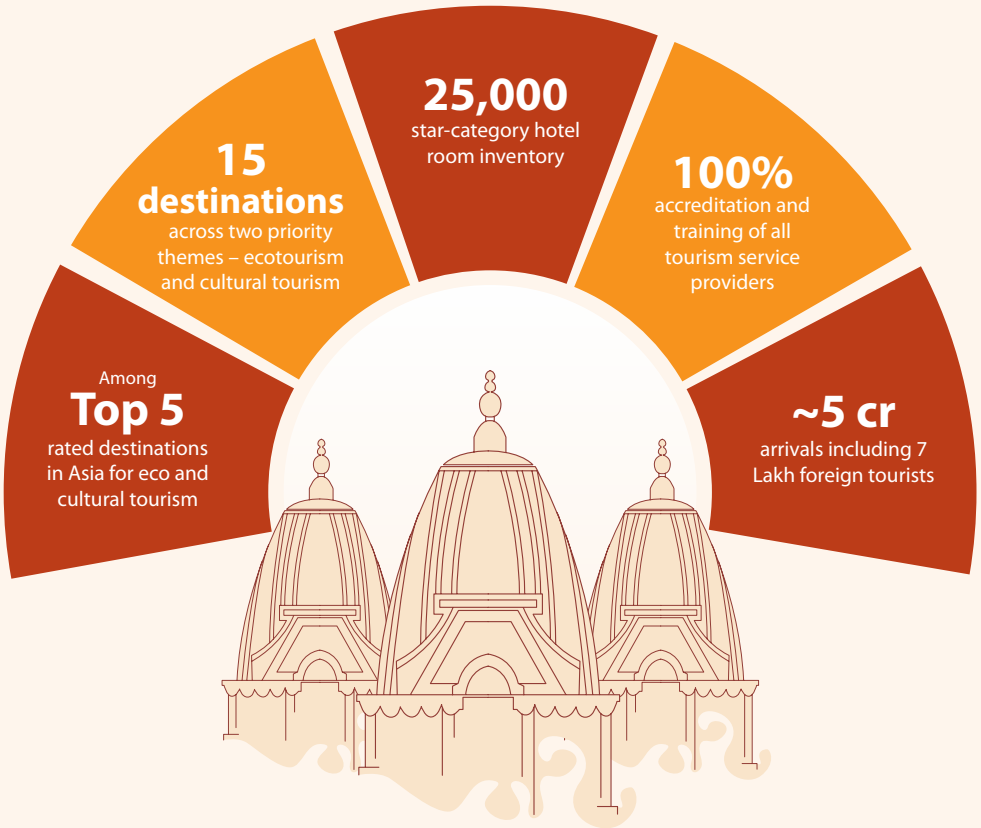
2. Vision and outcomes

Under the Vision of 'Think India, Think Odisha', the State aims to establish itself as a premier destination for eco-tourism and cultural tourism in Asia. Odisha seeks to attract global travellers by offering unique experiences that showcase its rich heritage, diverse culture, and unspoiled natural landscapes. The emphasis will be on promoting sustainable tourism practices, ensuring the conservation of its natural and cultural assets while driving economic opportunities for local communities. Through strategic investments, innovative tourism initiatives, and enhanced infrastructure, Odisha is committed to creating unforgettable visitor experiences. The State aspires to secure its place on the international tourism map while delivering lasting benefits to its people and preserving its environment for future generations.

EXHIBIT 23.5

VISION 2047

Think India, Think Odisha: To become a world-class tourism destination celebrated for its vibrant culture, stunning natural beauty, and rich heritage, fostering sustainable growth and transformative experiences for visitors

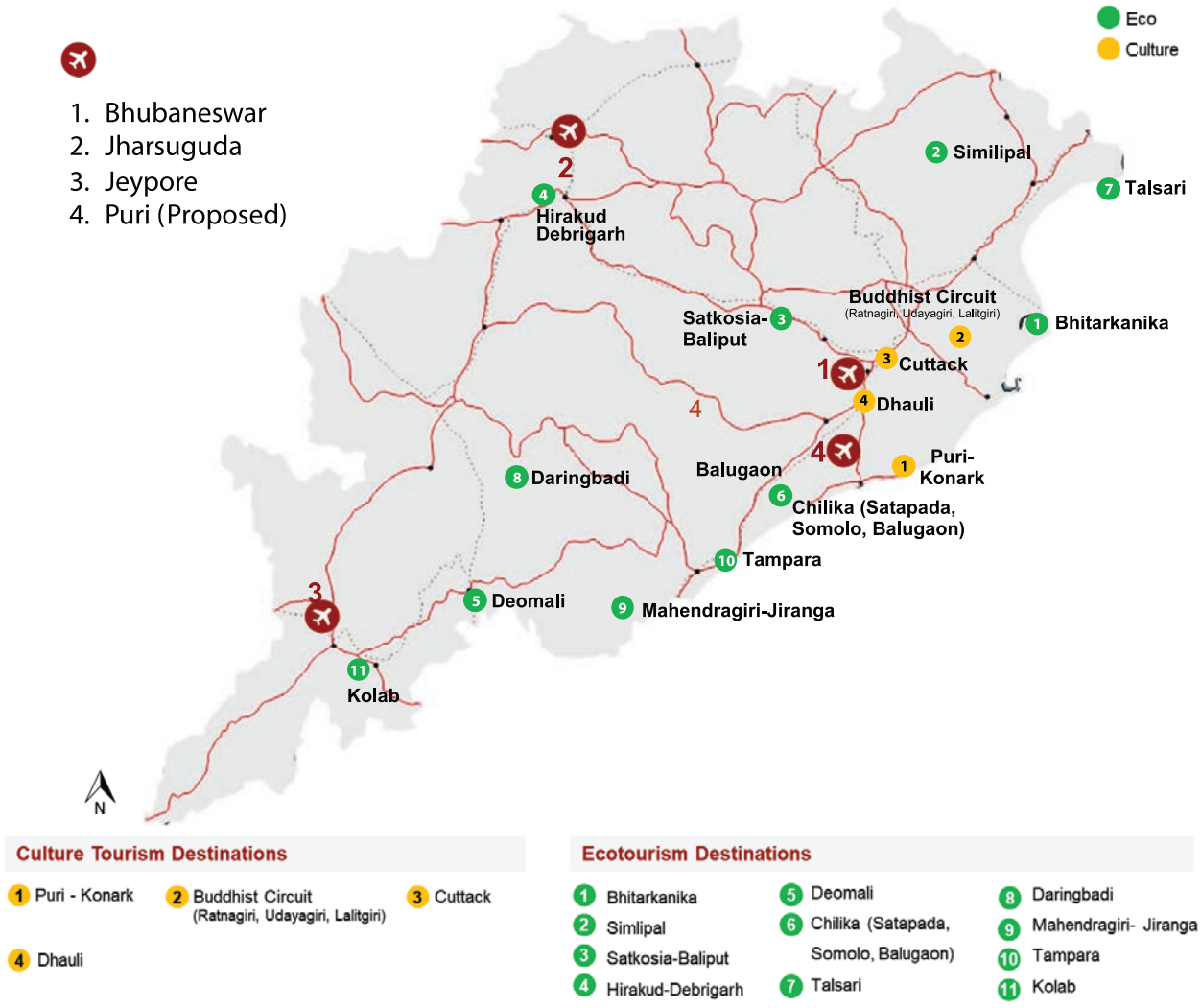


Odisha envisions transforming the State into a leading global destination for eco-tourism and cultural tourism by 2047. This Vision is deeply rooted in the State's unparalleled natural beauty, rich cultural heritage, and its commitment to sustainable development. Through strategic planning and targeted investments, Odisha aims to enhance visitor experiences, strengthen the local economy, and position itself as a preferred destination for travellers from around the world.

2.1 Development of 15 key destinations

By 2047, Odisha aims to develop around 15 iconic destinations, transforming them into vibrant hubs of tourism and cultural heritage. These locations include both eco-tourism and cultural tourism hotspots that showcase the State's unique blend of natural and cultural treasures, show below:

EXHIBIT 23.6



2.1.1. Eco-tourism destinations

Odisha boasts pristine landscapes, lush greenery, and diverse wildlife, making it a haven for nature enthusiasts. Key eco-tourism sites earmarked for development include:

- **Bhitarkanika**: Famed for its dense mangrove forests and thriving population of estuarine crocodiles, Bhitarkanika is one of India's most significant coastal ecosystems and a designated Ramsar site
- **Similipal**: A UNESCO-designated Biosphere Reserve, Similipal is home to diverse flora and fauna, including tigers, elephants, and rare medicinal plants, set amidst rolling hills and dense forests
- **Satkosia–Baliput**: Celebrated for its tiger reserve and the majestic Satkosia Gorge carved by the Mahanadi River, this region offers striking natural beauty and rich biodiversity
- **Hirakud–Debrigarh**: The site of the world's longest earthen dam, Hirakud is framed by the pristine Debrigarh Wildlife Sanctuary and the vast Hirakud Reservoir—an ideal destination for nature lovers and eco-tourists
- **Deomali**: Odisha's highest peak, Deomali is a popular destination for trekking, paragliding, and adventure tourism, offering panoramic views of the Eastern Ghats
- **Chilika (Satapada, Somolo, Balugaon)**: Asia's largest brackish water lagoon, Chilika is a Ramsar-listed wetland and biodiversity hotspot, attracting millions of migratory birds and supporting vibrant fishing communities

- **Talsari**: A serene coastal retreat known for its calm waters, red crabs, and picturesque estuarine charm—perfect for peaceful beachside getaways
- **Daringbadi**: Often referred to as the "Kashmir of Odisha," Daringbadi is a hill station known for its cool climate, pine forests, coffee plantations, and seasonal snowfall
- **Mahendragiri–Jiranga**: Mahendragiri, steeped in mythological significance and linked to the Ramayana, offers lush landscapes and spiritual tranquility. Nearby Jiranga is known for its vibrant Tibetan settlement and monastery
- **Tampara**: A scenic freshwater lake near Chatrapur, Tampara offers boating, picnicking, and leisure amid tranquil natural surroundings
- **Kolab**: Nestled in the hills of Koraput, the Kolab Reservoir is encircled by forests and gardens—an idyllic escape for nature enthusiasts and photographers

2.1.2. Cultural tourism destinations

Odisha's cultural landscape is equally captivating, with ancient temples, historic monuments, and vibrant traditions. Key cultural tourism sites include:

- **Puri-Konark**: Puri is renowned for the sacred Jagannath Temple, one of the four revered Char Dham pilgrimage sites in India. Konark is famous for the UNESCO World Heritage–listed Sun Temple, an architectural marvel and symbol of Odisha's artistic heritage
- **Buddhist Circuit (Ratnagiri, Udaygiri, Lalitgiri)**: These ancient sites reflect Odisha's rich Buddhist heritage, featuring historic monasteries, stupas, and archaeological treasures that date back to the early centuries of the Common Era
- **Cuttack**: A historic city celebrated for its exquisite silver filigree craftsmanship and vibrant cultural traditions, Cuttack has long served as a cultural and commercial hub of the region
- **Dhauli**: A symbol of peace and spiritual transformation, Dhauli is the site where Emperor Ashoka embraced Buddhism following the Kalinga War. The area is marked by rock edicts and a prominent Shanti Stupa

2.1.3. Infrastructure development

The Government is committed to enhancing infrastructure at these key destinations to ensure seamless connectivity and world-class facilities for visitors. This includes:

- **Upgrading airports** in Bhubaneswar, Jharsuguda, and Jeypore, with a new airport proposed in Puri to enhance accessibility
- **Strengthening road and rail networks** for better connectivity to remote locations
- **Expanding premium accommodation options** to cater to both domestic and international tourists

2.1.4. Preserving natural and cultural heritage

Odisha's development plan places a strong emphasis on preserving its natural ecosystems and protecting its cultural heritage. This involves sustainable tourism practices to minimise environmental impact and ensure that local communities benefit directly from tourism activities

2.1.5. Promoting Odisha on national and global platforms

Odisha aims to enhance its visibility and presence on national and international tourism platforms. Targeted marketing campaigns, participation in global tourism fairs, and partnerships with private stakeholders will showcase Odisha's unique offerings to a global audience

2.1.6. Empowering local communities

Tourism development will focus on creating economic opportunities for local communities, particularly in rural areas. This includes:

- Promoting traditional crafts and handlooms
- Providing skill development and employment opportunities in the hospitality and tourism sectors

2.2 Key outcomes

To achieve this Vision, the State will track the following measurable outcomes:

EXHIBIT 23.7

Key outcomes	Unit	Current status	2029	2036	2047
Category 1: Outcome-oriented					
GSVA contribution by hotels and restaurants	INR k cr.	~5[3]	8	40	100
Total tourist footfall	Lakh	123	256	319	547
Foreign tourist footfall	Lakh	0.8	1.6	3.0	7.0
Average length of stay – foreign tourists	Days	9[4]	10	11	12
Average length of stay – domestic tourists	Days	3[4]	3.5	4	5
High-spending tourist footfalls[5]	Lakh	7	12	30	50
Direct tourism jobs	Lakh	~12[6]	~14.5	~20	~25
Over-crowding intensity[7] at selected key destinations	Tourism footfalls / Carrying capacity	NA	<0.8	<0.9	<1

EXHIBIT 23.7 (continued)

Key outcomes	Unit	Current status	2029	2036	2047
Category 2: Input-oriented					
Air passenger traffic	'000/million	86	120	240	448
Density of national and State highways[8]	km/'000 sq km	64	80+	100+	150+
Destinations with at least one operational helipad	Nos.	2	10+ (3 clusters)	20+ (5 clusters)	40+
Wayside amenity centres[9] operational along national and key State highways	per km	-	70	60	50
Premium keys (3,4,5 star)	'000 nos	~2.8	5	15	25

[3] GSVA contribution under head 'Trade, repair, hotels and restaurants' in nominal terms

[4] As reported per 2019 Survey by Department of Tourism and 2022 tourism statistics report

[5] High-spending tourists defined as foreign tourists spending minimum of INR 10k, inter-State tourists spending minimum of INR 6k per day by 2029

[6] As reported by National Council of Applied Economic Research (NCAER), 2016

[7] Tourism carrying capacity is the maximum number of people that may visit a destination at the same time, without destroying its physical, economic socio-cultural, and environmental resources (United Nations World Tourism Organisation (UNWTO), 1999), to be established by an independent assessment at each destination

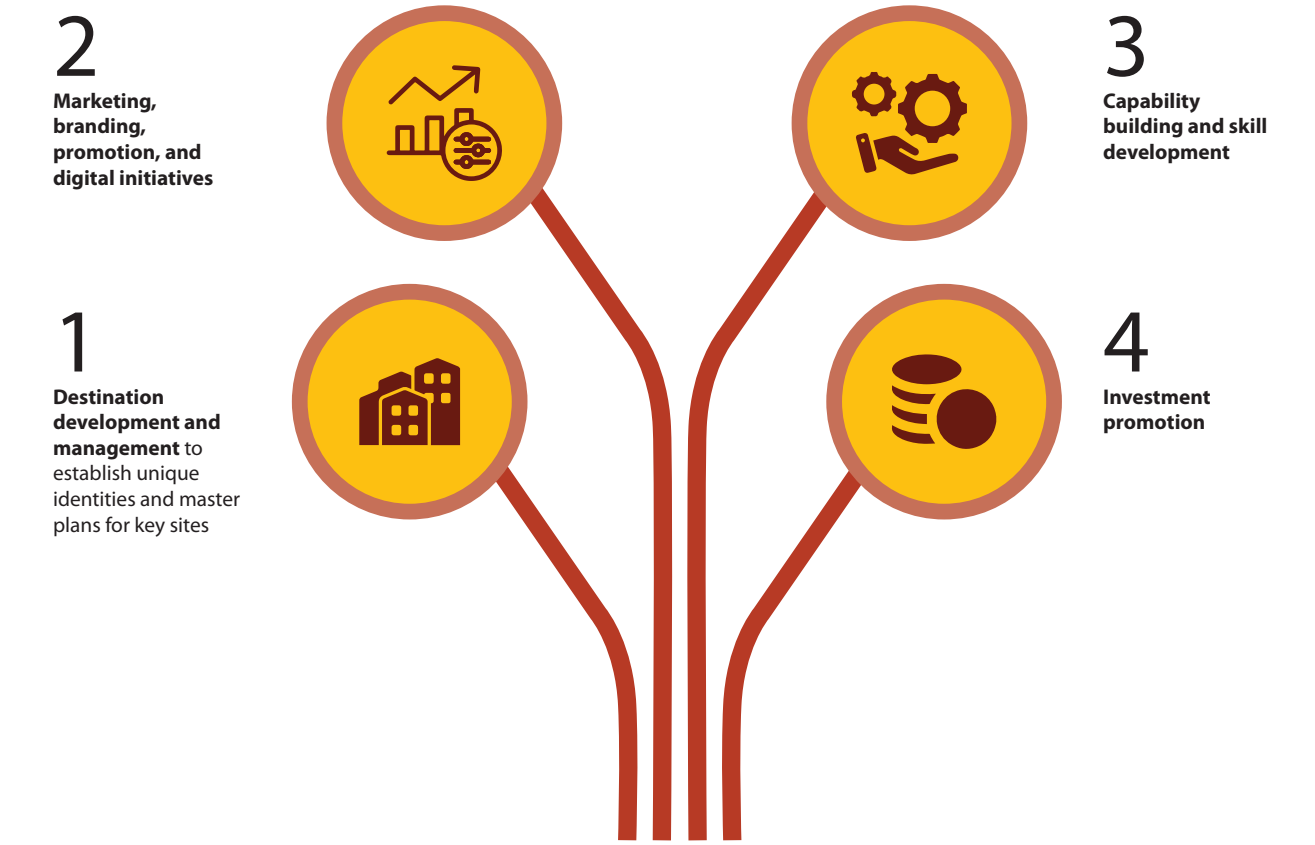
[8] As reported by UNWTO

[9] A typical wayside amenity centres could house fuel stations, food outlets, restrooms, ATM, etc. on a ~4 ha site. Additional facilities could include specialty retail, auto repairs, hotel, event spaces, etc.

3. Key initiatives

Odisha has outlined a forward-looking approach to revolutionise the tourism sector through four strategic programmes aimed at achieving its ambitious Vision for 2036 and 2047. These programmes form the cornerstone of Odisha's tourism development roadmap, with a focus on creating sustainable, inclusive, and globally competitive destinations.

EXHIBIT 23.8



3.1 Destination development and management

To establish unique identities for Odisha's iconic destinations, the State is developing master plans tailored to key sites. These plans will focus on creating world-class facilities, conserving heritage and ecological sites, and ensuring seamless visitor experiences. By adopting a comprehensive destination management approach, Odisha aims to enhance its appeal as a leading tourism destination while balancing growth with sustainability

3.2 Marketing, branding, promotion, and digital initiatives

Odisha recognises the importance of strong marketing and digital presence in attracting global tourists and investors. The State is committed to:

- Crafting a compelling brand identity for Odisha as a must-visit destination
- Undertaking robust promotional campaigns on national and international platforms
- Leveraging digital tools and technologies to improve the discoverability and accessibility of Odisha's tourism offerings, including through interactive platforms, virtual tours, and personalised visitor engagement strategies

3.3 Capability building and skill development

A thriving tourism sector requires skilled manpower and empowered communities. Odisha's focus on capability building includes:

- Training and upskilling the workforce in hospitality, tourism management, and customer service to deliver exceptional visitor experiences
- Promoting community-based tourism initiatives to involve local populations directly in the tourism value chain
- Empowering artisans and craftspersons to preserve and promote Odisha's rich tradition of handicrafts and handlooms, thereby creating more livelihood opportunities

3.4 Investment promotion

To realise its ambitious goals, Odisha is prioritising the attraction of private investments in tourism infrastructure and services. Key initiatives include:

- Offering attractive incentives and streamlined processes to encourage corporate and international investments
- Partnering with corporate sector to develop premium accommodations, eco-tourism resorts, and cultural hubs
- Facilitating public-private partnerships to ensure sustainable and inclusive growth

By implementing these four strategic programmes, Odisha is charting a path towards becoming a global leader in tourism. The focus on sustainable practices, technological innovation, and community empowerment ensures that the growth of tourism will benefit not just the visitors but also the environment and local communities, creating a win-win scenario for all stakeholders. The detailed interventions under these programmes are outlines across Exhibits 10.9.

EXHIBIT 23.9

Programmatic interventions | Institutional interventions | Policies and regulations

3.1 Destination development and management

- **Build place-making masterplan** for key tourism sites
  - **Carrying capacity** assessment of each site
  - **Recategorisation of destination-tier** (Silver, Platinum, etc.) determined by footfall, importance, international arrivals, quality of accommodation facilities, safety etc.
  - **Basic facilities and amenities available in international- level standards** for prioritised destionations (including specialised infrastructure for eco-tourism destinations)
- **Develop tourism precinct** masterplan
  - **De-lineating precinct** around site or tourist route
  - **Upgradation of existing facilities and amenities,** including façade controls, street furniture[1], paved walkways, de-lineated vendor area, etc.
  - **Ecosystem activation** through themed retail, guided-tours, activities, AR/VR[2] experiences etc.
- **Ensure last-mile utilities and connectivity** for each tourism site (paved road, electricity, water connection)
- **Activate tourism site through service contracts for softer story-telling** e.g., Walking tours, segway tours, and street markets
- **Develop marquee projects** in each destination. E.g., luxury eco-observatory in Debrigarh reserve, and stilted glass cottages in Chilika, among others
- **Establish 12-month long all-season tourism programme** by offering, for e.g., off-season activities, outdoor and indoor activities, and discount packages, etc.
- **Provide approvals and support to private operators to curate unique tourism products.** E.g. – Caravan hubs, and balloon festivals, etc.
- **Co-ordinate between concerned departments for destination-wise trunk infrastructure connectivity** (airport, highways, railway station, bus depot, and ferry terminals); **tech-enabled multi-modal connectivity** with seamless international and domestic passenger transitions
- **Develop inclusive infrastructure** for key tourism sites E.g. – disabled access, women-friendly toilets, childcare rooms, and Braille signage, etc.
- **Ensure effective operations** for all tourist sites and supporting infrastructure through PPP[3]
- **Collaborate with the Centre for regulatory easing** to develop marquee products in eco-sensitive zones, as required (detailed ahead)

3.2 Marketing, promotion and digital initiatives

- **Engage professional agencies** for:
  - Updating Odisha tourism brand messaging
  - Rolling out omni-channel promotional campaigns
  - Launching targeted influencer and content marketing campaigns
- **Build a 365-day 'Visit Odisha' event calendar,** with 4-5 marquee events or festivals targeting 3-5 lakh outstation visitors
- Invite investors to create **film, TV series or documentary in Odisha** – target at least 10 by 2029
- **Boost cultural exports** to target tourist markets E.g., 'Roots of Buddhism in Odisha' exhibit across SE Asia, or 'Odissi dance festival' in Tokyo, etc.
- **Increase tourism marketing and promotion budget** to INR 500 Cr per annum from INR 279 Cr in FY24 in next 2 years
- **On-board technology partner(s)** to operationalise:
  - **Destination-wise tourism statistics** (Arrivals, duration, spending, feedback, and live crowding status)
  - Database of registered service providers

  Update single window clearance mechanism to promote easy investments, certifications and/ or registrations
- **Integrate the Odisha Tourism website and mobile application** for information, event bookings, live crowd management information, and emergencies
- **Build monitoring system for tourist feedback and reviews** to provide relevant tourism services
- **Personalise tourist offerings,** with virtual assistant, AR/VR[2] offerings, and automated services
- **Establish a 'Digital and analytics wing'** under the Department of Tourism, to monitor and analyse data, and periodically publish insights and sectoral recommendations

1 Streetlights, signage, seating, dustbins, planting, urban art
2 Augmented reality/ Virtual reality
3 Public-private partnership

EXHIBIT 23.9 (continued) | Programmatic interventions | Institutional interventions | Policies and regulations

3.3 Capability building and skilling

- **Establish mega destination-level 'Tourism Skills Centre'** a in hub-and-spoke model for tour operators, tribal community hosts, guides, and lifeguards, etc. along with **a State-level 'Centre of International Standards'** (as hub)
- Introduce a State-backed **apprenticeship programme** for tourism students, guides and operators
- Launch training and sensitisation programmes **for the State police**
- **Sensitise community through** awareness campaigns on benefits of tourism; include exposure tour for community leaders
- **Create 'Tribal community outreach cells[1]'** under the Tourism Department for partnering with stakeholders across the nine tribal-dominated districts
- **Set up a 'Licensing and certification wing'** in the Department of Tourism for service providers
- **Mandate licensing and certification** of key tourism service providers, e.g., adventure tours, guides, and lifeguards
- **Regulate** (Registration, tiering), launch host training programmes and develop of common platform to **expand the homestay ecosystem**

3.4 Investment promotion

- **Accelerate exploratory outreach** to anchor investors across categories (e.g., hospitality players, adventure operators, and activity service providers)
- Conduct **investor roadshows** across national and international locations
- Aggregate **land banks** in key destinations
- Offer tailored incentives to attract the **first 20% anchor investors** in priority tourism clusters
- **Collaborate with the Government of India** to expedite approvals and to ease restrictions in 'Coastal regulation zones', and eco-sensitive zones, and with the Archaeological Survey of India (ASI) for 'Heritage zones'
- **Create a master list of projects** along with templatised public-private partnership models

4. Regulatory and policy framework

To transform Odisha into a global tourism hub, the State Government is committed to creating an enabling regulatory and policy framework. Incremental shifts in policies and regulations are crucial to attract targeted investments, improve services, and foster a conducive environment for sustainable tourism development. The following initiatives outline key focus areas for policy transformation:

4.1. Incentives for target investments and services

To encourage large-scale tourism investments and improve service quality, the State will introduce a range of customised incentives, including:

- **Land allotment policy**: Dedicated policy for anchor tourism investors (lease rent subsidy, and infrastructure creation etc).
- **Capital subsidies**: Financial support for capital-intensive projects such as luxury resorts, convention centres, oceanariums, museums, and amusement parks
- **SGST reimbursement**: Targeted reimbursement for projects and services catering to high-value tourists, encouraging premium tourism offerings
- **Incremental training subsidy**: Financial assistance for training service providers to deliver exceptional experiences to high-value tourists

4.2. Collaboration with the Government of India

To unlock the full potential of Odisha's coastal and forest-based tourism, the State seeks collaboration with the Government of India in the following areas:

- **Relaxation of Coastal Regulation Zone (CRZ) guidelines**: Identification of two or three coastal stretches (~10 km) for appropriate relaxation of CRZ regulations, recognising Odisha's relatively low coastal population density. This will enable the development of world-class tourism infrastructure while ensuring environmental sustainability
- **Easing of forest and wildlife regulations**: Streamlined regulations and faster approvals to develop tourism infrastructure within ESZ, FC clearance and scale forest and wildlife tourism offerings

4.3 Framework for accreditation and regulation of tourism services

To ensure the highest quality standards and safety in tourism services, the State will establish a robust accreditation and regulatory framework, including:

- **Creation of an empowered body**: A dedicated body will oversee the accreditation and monitoring of key tourism services, such as boat tours, adventure activities, and eco-tourism operations
- **Standard Operating Procedures (SOPs)**: Updated guidelines for tourism services, developed in consultation with industry stakeholders, to standardise operations and enhance visitor safety and satisfaction

5. Governance

Effective governance is critical to the success of Odisha's tourism development initiatives. A multi-level but streamlined governance structure will be established to ensure seamless coordination across departments while maintaining clear roles and responsibilities. This framework will focus on:

- **Inter-departmental collaboration**: Strengthening coordination between tourism, environment, forest, and other relevant departments to streamline project implementation
- **Lean governance model**: Adopting a lean and efficient structure to ensure agility in decision-making and responsiveness to stakeholder needs
- **Strategic oversight**: Establishing a high-level committee to monitor progress, resolve bottlenecks, and drive alignment with the State's long-term tourism Vision

The governance framework outlined in Exhibit 23.11 serves as a guiding model for the Department of Tourism, ensuring that Odisha's ambitious plans for tourism growth are executed effectively and sustainably.

EXHIBIT 23.10

Newly formed

Chief Minister

- **Frequency:** Bi-Annually
- **Role:** De-bottlenecking, especially for marquee investments; periodic reviews and support

Chief Secretary

- **Frequency:** Quarterly
- **Role:** Progress review of key projects; Inter-departmental stakeholder alignment etc.

Tourism department
(Headed by Commissioner-cum-Secretary - Monthly Meeting)

Cluster-wise Destination Management Organisations (DMO) or Destination Specific Special Purpose Vehicles (SPV)

OTDC[1]

SPV[2] (Destinations Specific)

- **Strengthen with a new structure**, with outsourced or on-rolls employees for better monitoring of projects
- **To be headed by Chief General Manager (CGM)** with General Managers for:
  - Marketing
  - Promotion
  - Events and festivals
  - Infrastructure (with GMs for key categories)
  - Transport
  - Finance
- **Focus areas include**: Tourism policy-making, marketing and promotion, development of tourism projects including hospitality and infrastructure in PPP mode, facilitating events and enabling human capital development

[1] OTDC – Odisha Tourism Development Corporation
[2] Special Purpose Vehicle

CHAPTER 24

RESEARCH & KNOWLEDGE BASED ECONOMY

Summary

Research and knowledge creation are cornerstones of economic growth and societal advancement. In the modern era, transformative domains such as artificial intelligence (AI), machine learning (ML), climate technology, and biotechnology have become critical areas of focus. Odisha seeks to establish a world-class research ecosystem that leverages its natural endowments and expertise in sectors such as mining, aerospace, clean energy, food processing, and the blue economy, positioning the State as a global leader in innovation and knowledge creation

Odisha envisions transforming itself into a hub of innovation, promoting sustainable economic growth, fostering inclusive social development, and enhancing global competitiveness.

By 2047, the State envisions the following outcomes

- Rank among the **Top 5 States in the National Innovation Index** published by NITI Aayog
- Increase **R&D expenditure** (public and private investments) to **3.5% of Odisha's GSDP** by 2047, reaching an interim milestone of 2.5% by 2036
- Achieve over **4,000 publications in tier-one journals per million population** by 2047, with a goal of 2,000 by 2036
- Facilitate the filing of over **50,000 patents annually** by 2047

Key initiatives to achieve the outcomes

Nurture a culture of innovation at Higher Education Institutions (HEIs), establishing them as Centres of Excellence (CoE) and knowledge hubs; focus on producing skilled researchers who can contribute to a robust knowledge economy and address real-world challenges

Promote industry-driven R&D:

- Accelerate innovation by fostering collaboration between academia and industry
- Enhance industrial competitiveness by supporting R&D initiatives that drive technological advancement and efficiency

Attract premier research institutions:

- Position Odisha as a preferred destination for leading research institutions by offering competitive incentives and creating a conducive research environment
- Facilitate advanced innovation and knowledge creation by fostering partnerships with nationally and globally recognised organisations

Launch the Odisha Research and Innovation Fund (ORIF):

- Establish ORIF as a dedicated fund to support groundbreaking research across diverse sectors
- Provide financial and infrastructural support for cutting-edge innovation to address local and global challenges

Build a thriving startup and venture investment ecosystem:

- Strengthen Odisha's entrepreneurial landscape by fostering a dynamic ecosystem for startups and venture investments
- Drive technology-led growth and position Odisha as a hub for entrepreneurial innovation

Over the next 24 months, the State will

- **Launch Odisha Research and Innovation Fund (ORIF)**: Begin with an initial allocation of INR 300 crore, formulate operational guidelines, and announce the first call for proposals
- **Transform universities into research-intensive institutions**: Identify two universities for a comprehensive transformation into research-focused institutions, equipping them with the resources to excel
- **Establish 'Model Centre of Excellence (CoE)'**: Partner with a global or national institute of eminence to create a CoE focused on advanced research in priority sectors
- **Support corporate innovation**: Introduce a scheme to incentivise corporate-led innovation through fiscal and non-fiscal benefits, encouraging collaboration and knowledge sharing
- **Build and Notify key Science and Innovation Policies**: Introduce the Odisha State Policy on Intellectual Property Rights (IPR) to safeguard and commercialise local innovations, and the Science, Technology, and Innovation (STI) Policy to strengthen the State's research, technology development, and innovation ecosystem.

Odisha's commitment to fostering a vibrant research and knowledge economy will position the State as a global leader in innovation and sustainability. By building a world-class ecosystem for research, development, and entrepreneurship, Odisha will drive economic growth, create opportunities for its people, and strengthen its standing on the national and international stage. Through these efforts, the Government of Odisha underscores its dedication to empowering its citizens and shaping a prosperous and inclusive future.

1. Context

Odisha has initiated significant efforts towards advancing research and innovation. The State is home to premier institutions such as the Odisha Space Applications Centre (OSAC), Institute of Life Sciences (ILS), Institute of Mathematics and Applications (IMA), Institute of Minerals and Materials Technology (IMMT), and the National Rice Research Institute (NRRI), which houses the M.S. Swaminathan Genome Editing Laboratory. To popularise science and nurture a culture of scientific temper, the State has also invested in district-level science centres and planetariums.

Building on this strong foundation, the State has recently launched a series of strategic initiatives to further accelerate scientific research, innovation, and institutional capacity.

For scientists and researchers

- Research and development (R&D) grants are being provided to support eligible projects focused on scientific innovation and high-impact developmental priorities
- The State is providing a monthly stipend to eligible PhD students under the operational Mukhyamantri Research and Innovation Fellowship Programme
- Industry-aligned support and readiness infrastructure: Operationalise Patient Facilitation Centres, Centres of Excellence, and Finishing Schools to enhance industry readiness, promote applied research, and support innovation-driven collaboration between academia, industry, and healthcar
- Grants for researchers and faculty to attend national and international seminars and conferences, enabling greater exposure, collaboration, and research on global platforms
- Financial support for patent filing in biotech space

For schools

- Training and capability building of teachers in collaboration with Indian Institute of Science (IISc), Bangalore
- District Science Centres and Innovation Hubs are being established across government schools to foster scientific curiosity, hands-on learning, and early-stage innovation among students
- Young Astronomer Talent Search (YATS) programme to foster and promote space science among school students

For Industry

- Odisha is fast emerging as a destination for innovation-led industrial development, particularly in biotechnology and advanced manufacturing.

- Key initiatives include:
  - **Odisha Biotechnology Policy 2024**: Offers targeted fiscal incentives, infrastructure support, and regulatory facilitation, going beyond the provisions of the State's Industrial Policy Resolution (IPR) 2022
  - **Sectoral focus**: Encompasses pharmaceuticals, agricultural biotechnology, environmental technologies, and bio-based manufacturing
  - **Dedicated clusters and biotech parks**: Planned to attract anchor companies, foster collaboration, and create a supportive ecosystem for both large and small enterprises

For Startups

- The State is fostering a thriving startup ecosystem aligned with the vision of Viksit Odisha, aimed at youth, innovation, and inclusive growth
- Key enablers include:
  - **Incubation centres**: Strengthened across universities and research institutions to provide mentorship, prototyping facilities, and investor access
  - **Startup Odisha ecosystem support**: Offers seed funding, policy incentives, and streamlined regulatory approvals
  - **Finishing schools and innovation hubs**: Designed to improve industry readiness and cultivate entrepreneurship among students and early-career professionals

For Governance

- The **Odisha Space Applications Centre** (OSAC) is leveraging next-generation technologies—remote sensing, geospatial analytics, and AI/ML—to deliver digital solutions for public service delivery and decision-making
- Flagship initiatives include:
  - **Shree Sampatti**: A geospatial land asset management system for the Shree Jagannath Temple Administration to monitor and protect temple lands
  - **Digital Paddy Procurement Monitoring**: Enhances transparency and efficiency through automated systems and geotagging of procurement centres
  - **Odisha 4K GeoPortal**: Provides cadastral-level (1:4000 scale) land-use and infrastructure maps for departments to support planning and monitoring
  - **AI/ML-based GIS Feature Extraction**: Automates mapping of physical assets and natural resources using high-resolution satellite imagery
  - **Climate-Resilient Agriculture Monitoring**: Uses satellite and mobile technologies to manage irrigation systems and improve farming practices
  - **Disaster Risk and Environmental Monitoring**: Supports early warning systems, vulnerability mapping, and predictive analytics for floods, droughts, and cyclones

1.1 Key challenges

The State faces several challenges in developing a research ecosystem related to funding, general awareness, student motivation levels and incentives for meritorious students etc., as shown below:

EXHIBIT 24.1

- **Intense competition and smaller market size** forces local companies to prioritise short-term actions over long-term innovation
- **Low R&D activity in academic institutions and industries** leading to reduced number of patent applications
- **Inadequate awareness** regarding intellectual property (IP) creation and certification
- **Inadequate financial support** for research activities, exchange programmes, exposure visits and conferences, etc.
- **Lack of comprehensive assessment**, mapping of research institutions and research alignment with local industry needs
- **Insufficient incentives and scholarships for students** pursuing research opportunities
- Untapped potential in frontier research domains such as **biotechnology, marine biotechnology, space technology, medical technology, agricultural innovation**, and **deep tech**-offering new pathways for scientific leadership and economic growth

1.2 Key trends

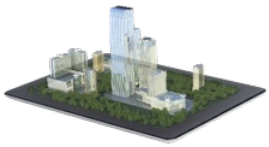
Exhibit 24.2 highlights the key technologies attracting significant investments from leading economies. These trends provide valuable insights for the State to assess future demand and strategically allocate funding.

EXHIBIT 24.2

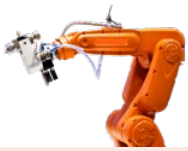
Top technologies that attracted R&D funding

(USD xx bn): Global R&D funding in 2022

Digital technologies



Advanced connectivity
USD 200+ bn



Applied and generative artificial intelligence (AI)
USD 200+ bn

Industrialising machine learning (ML)
USD 15+ bn

Quantum technologies
USD 10+ bn

Cloud and edge computing
USD 150+ bn

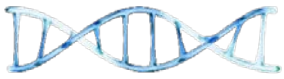
Immersive reality technologies
USD 30+ bn

Technologies creating industries of tomorrow

Future of clean energy
USD 300+ bn

Future of mobility
USD 300+ bn

Sustainable consumption
(e.g., new materials, and fuels)
USD 150+ bn



Bio-engineering
USD 100+ bn

Space technology
USD 25+ bn

Source: Organisation for Economic Co-operation and Development and World Bank Report 2023

Additionally, the State will leverage learnings from global experiences in building R&D and innovation ecosystem:

- **Focus on key sectors**: Effective innovation strategies start by prioritising a few critical sectors and enablers. Singapore exemplifies this approach[1] - in the early 1990s, it concentrated on developing its IT and manufacturing industries, laying the foundation for sustained economic growth
- **Robust progress tracking**: Defining and measuring the right input and output key performance indicators (KPIs) is essential for success. Denmark's innovation strategy[2] focuses on three key indicators - Enterprise innovation index, corporate R&D investment, and the share of graduates employed in the corporate sector
- **R&D resiliency**: Research and innovation require consistent, long-term investment, even during economic downturns. During the 2008 global financial crisis, South Korea increased its R&D spending and incentivised the development of priority products through Government procurement[3]
- **Comprehensive approach**: Achieving excellence in innovation demands a holistic approach, integrating academia, corporates, and startups. Israel's thriving research ecosystem[4], a result of significant Government investment in the 1990s, has attracted multinational companies to establish research centres, creating a global hub of innovation
- **Align funding with ambition**: To become a global leader, substantial financial investments are essential. The United Kingdom identified big data as a key sector in its industrial strategy and allocated GBP 789 million for its development[5]
- **Corporate partnerships**: Governments can boost innovation by incentivising corporate R&D investments. Norway, for example, funds over 9% of corporate R&D costs[6]
- **Foster global collaboration**: The most advanced R&D and innovation efforts are increasingly achieved through international partnerships. For instance, the patent for Bluetooth 3.0 is jointly held by over 30,000 entities worldwide, including more than 200 universities[7]

[1] Singapore Economic Development Board reports
[2] Denmark's Innovation Strategy, Ministry of Higher Education and Science
[3] OECD Science, Technology, and Industry Outlook
[4] Startup Nation: The Story of Israel's Economic Miracle
[5] UK Industrial Strategy, Department for Business, Energy & Industrial Strategy
[6] Research Council of Norway
[7] World Intellectual Property Organisation (WIPO)

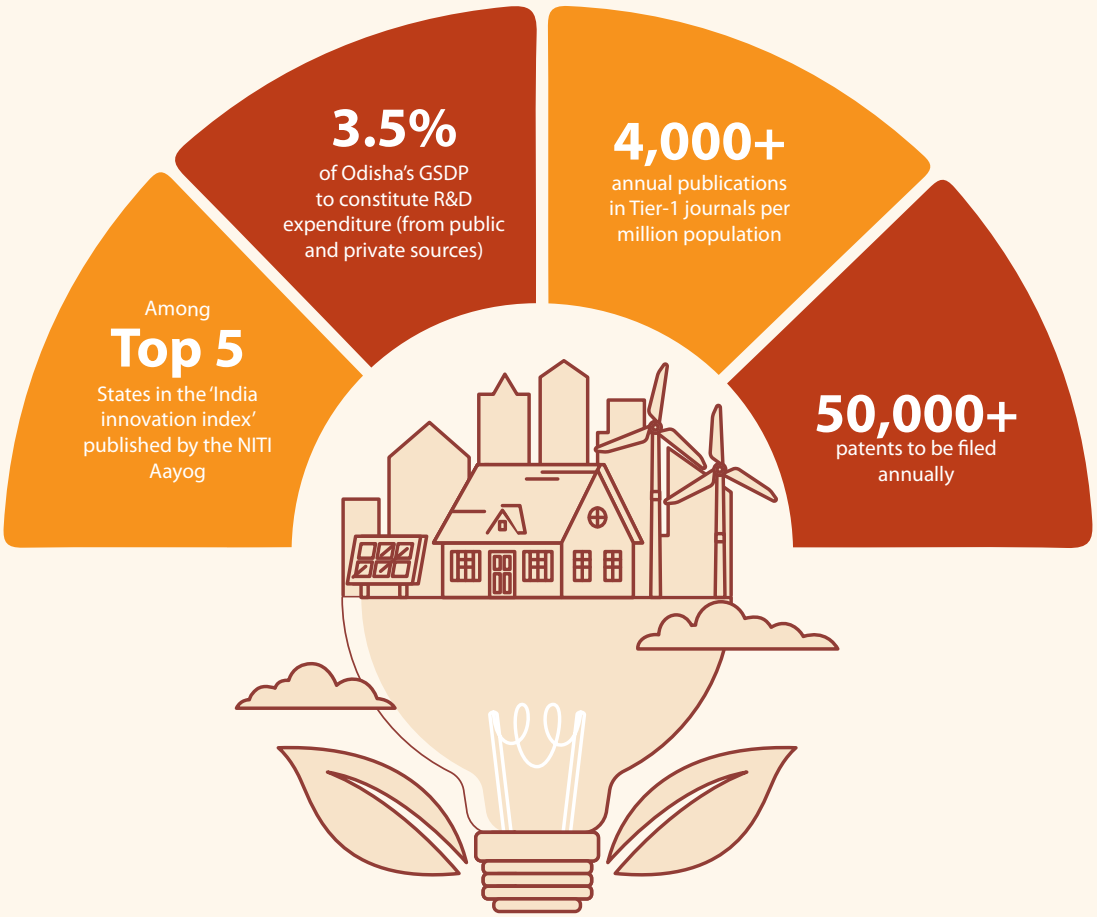
2. Vision and outcomes

Odisha seeks to establish a robust research ecosystem to build expertise in emerging research areas for future growth, while prioritising sectors with existing endowments such as mining, aerospace, clean energy, bio tech food processing and blue economy.

EXHIBIT 24.3

VISION 2047

Odisha aspires to transform itself into a leading hub of innovation, fostering sustainable economic growth, inclusive social development, and global competitiveness through robust research ecosystem and dynamic industry-academia partnerships



Complementing this vision, the Department of Science and Technology will create innovation-driven corridors across the education value chain. Through mentorship networks and scientific mapping of Odisha's natural endowments, the Department will foster sustainable innovation ecosystems that connect learning, research, and application for long-term ecological and societal benefit.

Odisha plans to develop a comprehensive ecosystem across the research lifecycle, ensuring a robust, end-to-end structure that creates market-ready solutions and drives economic growth, talent development, and industry support within the State. This is detailed below:

EXHIBIT 24.4

	R	r	D	d
	Basic research	**Applied research**	**Experimental development**	**Incremental development**
Focus	Discovery of new knowledge or techniques within science or engineering	Science or engineering advancements to apply technologies to new applications	Incorporation of new technologies into marketable products and services	Incremental improvement to existing products or services to better meet customer needs
Essential question	Is the knowledge or technique replicable?	Is the innovation viable in this new application?	Can we develop a solution with this innovation?	Does this version work better than the previous?
Probability of success	**0-5%**	**20-50%**	**75-90%**	**90%+**
Trail for tracking	Academic publications with many citations	Academic publications with more niche citations	Patents, application filings	Facilitating the commercialisation of patent

2.1 Key outcomes

Odisha has set certain targets to ensure accountability among all stakeholders and easy tracking of progress:

EXHIBIT 24.5

Key outcomes	Unit	Current status	2029	2036	2047
R&D expenditure	% of GSDP	-	0.5%	2.5%	3.5%
Number of researchers	per '000 population	-	-	1	3
Intellectual property (IP) receipts	% of total trade	-	0.2%	0.6%	1%
Publications in Tier-1 journals	Number per million population	-	500	2,000	4,000
Annual patents filed	Number	567	1,500	15,000	50,000
India Innovation Index (NITI Aayog)	Rank	16th	Top 12	Top 8	Top 5

3. Key initiatives

The State will build and scale its innovation ecosystem through five key initiatives:

EXHIBIT 24.6

3

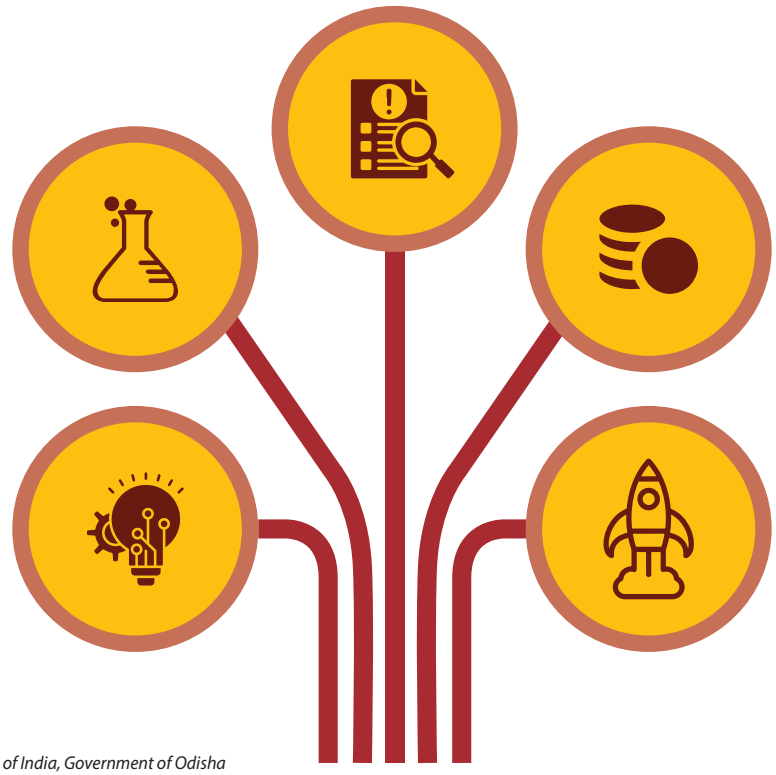
Attract premier research institutions to Odisha by positioning it as a preferred destination, catalysing advanced innovation and knowledge creation

2

Promote industry-driven R&D to accelerate innovation and enhance industrial competitiveness in Odisha

4

Launch the Odisha Research and Innovation Fund (ORIF) to support groundbreaking research and innovation across sectors



1

Nurture a culture of innovation at Odisha's Higher Education Institutions (HEIs) to establish them as knowledge hubs, producing skilled researchers to drive the knowledge economy

5

Develop a robust startup and venture investment landscape to drive entrepreneurship and technology-led growth in the State

Source: UNESCO, Government of India, Government of Odisha

3.1 Nurture a culture of innovation at Odisha's Higher Education Institutions (HEIs)

3.1.1 Develop at least five research-intensive universities by 2036, with two universities to be announced as model institutions in next 24 months through a comprehensive transformation plan

3.1.2 Establish a 'Centre of Excellence (CoE)' in each university and technical institution, tailored to the institutional strength and emerging priority areas. Additionally,

- Collaborate with prominent national and international institutions for knowledge-sharing and faculty exchange
- Explore public-private partnership (PPP) models with corporate players, leveraging their expertise and funding in exchange for 'First right of refusal' for purchase of the intellectual property (IP) generated
- Align with key priority areas for the State (outlined in chapter 'Startup Odisha'; retain brackets) as well as those prioritised by the Government of India such as AI, semiconductors BioE3, green energy, precision agriculture, and defence and space, etc.

3.1.3 Forge national and international partnerships to enhance capabilities

- Launch formal exchange programmes with scholarship support, in partnership with global institutions across Europe, and North America, etc. This will help attract international scholars while creating global exposure for local researchers
- Develop mentoring initiatives, pairing high potential student researchers with experienced researchers from top Indian and global institutions

3.1.4 Support research-minded faculty in devoting more time to innovation

- Increase stipend support for researchers and PhD students
- Launch an 'Innovation track', enabling universities to provide dedicated 'Release time' for faculty to focus on research, innovation, and entrepreneurial activities

3.1.5 Create a supporting ecosystem in HEIs for commercialisation of research

- Organise intellectual property (IP) workshops for faculty and students on patenting, and commercialisation of research and IP infringement, amongst others
- Empanel legal professionals to provide support in patent applications and commercial contracts
- Create a dedicated cell to engage with companies for sponsored research projects

3.2 Promote industry-driven R&D to accelerate innovation and enhance industrial competitiveness in Odisha

The corporate sector holds significant potential to accelerate research and innovation, particularly in commercialising basic research and pilot technologies. Recognising this, the State will introduce a comprehensive scheme to encourage corporate investment in R&D and innovation. Key components of the initiative will include:

3.2.1 Incentives for corporate innovation: The Scheme will provide fiscal and non-fiscal incentives, such as monetary grants, tax benefits, and streamlined regulatory processes, to encourage companies to establish R&D centers and innovation hubs in Odisha

3.2.2 Clear eligibility and compliance framework: Transparent eligibility criteria will be established for corporate investments, with provisions for periodic disclosures, compliance requirements, and an effective monitoring mechanism to track outcomes and ensure alignment with the State's innovation goals

3.2.3 Focus on commercialisation and collaboration: Special incentives will be offered for projects that successfully commercialise pilot technologies or establish partnerships with academic institutions, startups, and local enterprises to build an ecosystem of collaborative innovation

3.3 Attract premier research institutions to Odisha

3.3.1 Launch a Scheme with dedicated fiscal and non-fiscal support from the State for such institutions. This will include benefits such as expedited land approvals, co-investment from the State, and tax refunds, etc.; the State will prioritise and ensure fast-track establishment of such institutions as a strategic priority

3.3.2 Establish a task force headed by the Principal Secretary, Higher Education Department, to work with Government of India and ensure new institutions or campuses of existing premier research institutions come to Odisha

3.4 Launch the Odisha Research and Innovation Fund (ORIF)

The Odisha Research and Innovation Fund (ORIF) will be established to provide targeted financial support for high-impact research and innovation projects across key sectors. This Fund will enable both public and corporate entities to collaborate on cutting-edge technologies, fostering a robust research ecosystem and driving economic growth in the State. The salient features of the Fund are illustrated in the Exhibit 24.7.

EXHIBIT 24.7

Illustrative features of the Odisha Research and Innovation Fund (ORIF)

A Key objectives

- Provide fiscal and non-fiscal incentives, including grants and tax benefits, to attract companies to establish R&D centres and innovation hubs in Odisha
- Define transparent eligibility criteria for beneficiaries with robust monitoring, ensuring compliance and tracking of outcomes for corporate innovation projects
- Facilitate partnerships between corporates, academia, and startups to accelerate the commercialisation of pilot technologies and build a collaborative innovation ecosystem

B Target beneficiaries

- Individuals or groups of researchers based in Odisha
- Centres of Excellence at HEIs and research institutions and universities in Odisha
- Consortia of academia and industry
- MSMEs and startups

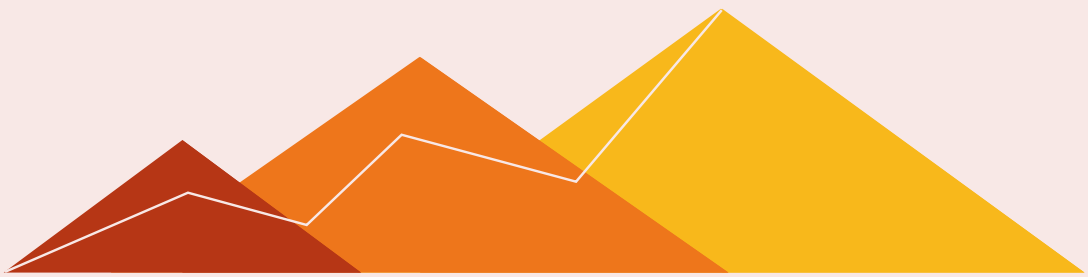
C Contributing donors

- Government of Odisha (anchor)
- Central Government through the Anusandhan National Research Foundation (ANRF)
- Corporates
- High net-worth individuals (HNIs)
- Muli-lateral institutions
- Global foundations, etc.

D Other capabilities

- Dedicated patent processing facility in collaboration with National Law University (NLU), Cuttack etc.
- Technology marketplace to promote patents for commercialisation

E Stage-gated activation strategy



	Phase 1:	Phase 2:	Phase 3:
Focus areas	Assess landscape and build the institution	Invite proposals	Continue building strengths
	Time		
Indicative timeline (in years)	0.6–1	1–3	3+
Goals	• Assess current research landscape in the State across leading domains and priority sectors • Engage with HEIs, corporate sector and other stakeholders to build awareness about the Fund • Build institutional capability, operating model and governance	• Build a competitive advantage by boosting existing research strengths across sectors, domains and technologies	• Bridge gaps in local research capabilities for emerging global priority areas • Identify new priority areas to focus on and drop the ones that have achieved maturity or lost relevance

EXHIBIT 24.8

F Assessment and monitoring set up

Illustrative criteria for application evaluation

Idea and workplan

- Intellectual merit and societal impact of the problem statement
- Veracity of approach and research methodology
- Commercialisation plan and potential
- Clear workplan with milestones

Applicant

- Credentials of the applicants and past success
- Time commitment from principal investigators and researcher team

Funding plan

- Clear rationale for funding ask
- Feasible plan for expenditure under the specified funding, timing and resource constraints etc.

Illustrative assessment and monitoring approach

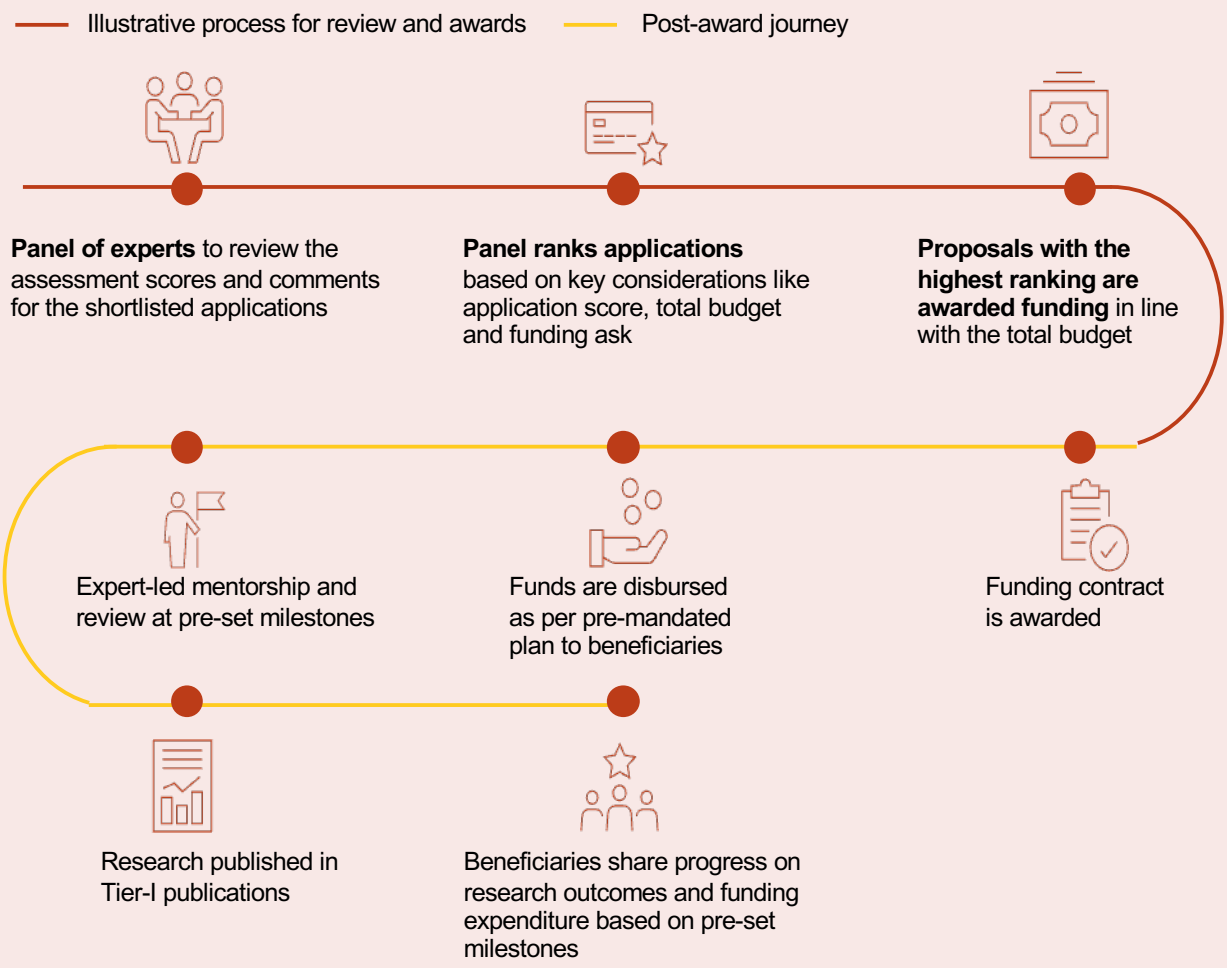


EXHIBIT 24.9

G Illustrative key performance indicators (KPIs) to monitor the fund's performance

Strategic KPIs

- Number of publications
- Number of commercialised projects
- Number of patents granted
- Number of citations

Operating KPIs

- **Funding** – e.g., number of applications, and number of grants
- **Functional** - e.g., application processing time and project milestones achieved
- **Partnerships -** e.g., number of partners
- **Others -** e.g., instances of other research impact

Three levels of governance to ensure effective operation of the Fund

Supervisory council with representation from key State leadership, top CEOs, and experts, to maintain oversight over the Fund's performance and ensure strategic goals are achieved

Expert panel with academia and industry to identifying priority areas, desired outcomes and evaluate proposals for funding

Audit and risk committee to ensure time-bound submission and accuracy of financial statements and other mandatory documents

3.5 Develop a robust startup and venture investment landscape

Startups are at the forefront of economic transformation, serving as critical contributors to innovation, job creation, and economic diversification. Recognising their pivotal role, the Government of Odisha launched Startup Odisha in 2016, a landmark initiative aimed at fostering a robust startup ecosystem within the State. Over the years, this programme has empowered numerous entrepreneurs, provided them with essential support, and laid a strong foundation for an entrepreneurial culture in Odisha.

As Odisha charts its ambitious path toward Vision 2047, the Government remains steadfast in its commitment to strengthening this dynamic sector. **Building on the success of Startup Odisha, the State is poised to implement innovative and forward-looking strategies to position itself as a leading hub for startups and innovation in India**.

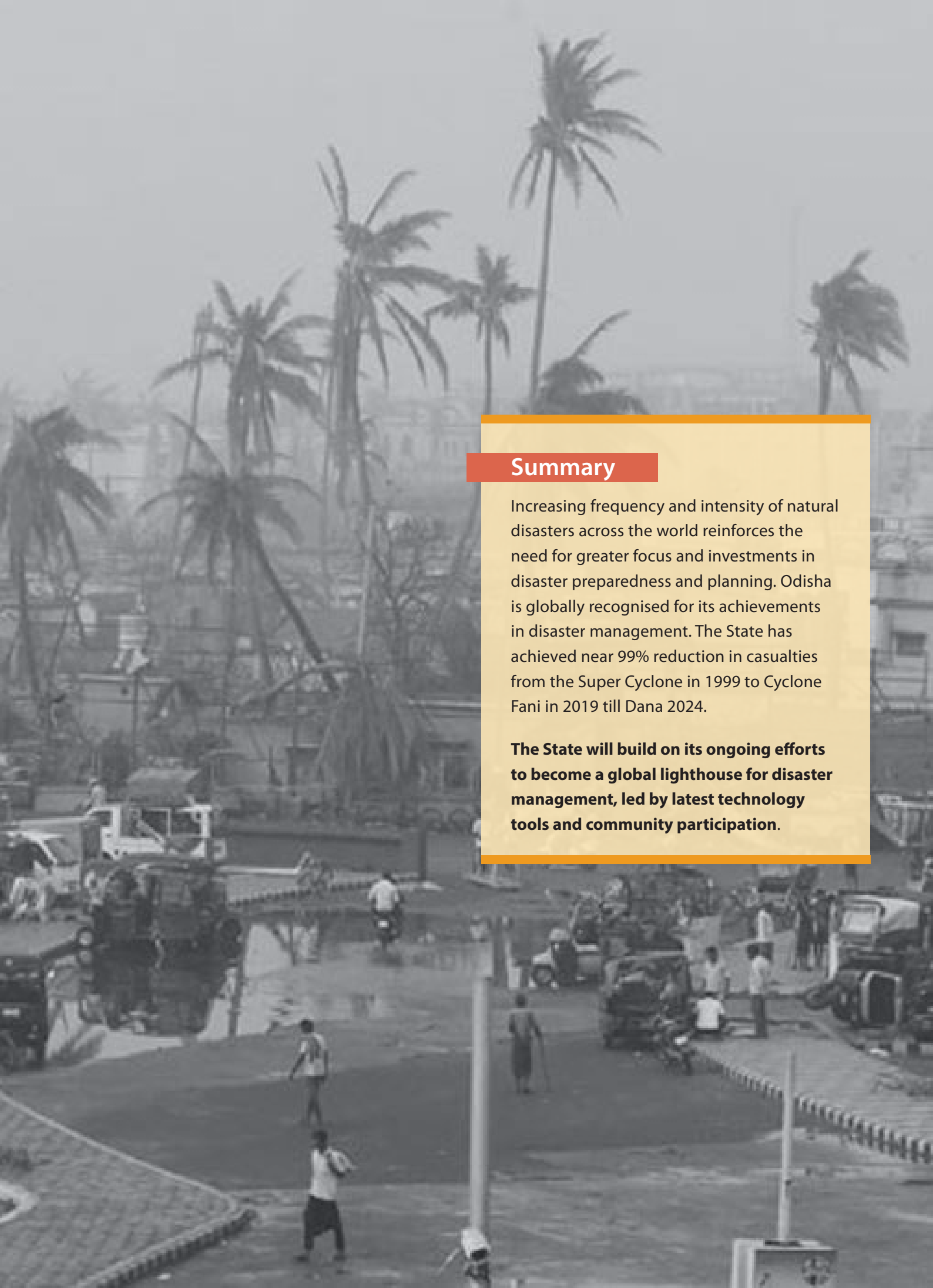
A key initiative under Vision 2047 is the establishment of 'Super innovation clusters'. These clusters will focus on research and development (R&D) within priority sectors, catalysing breakthroughs and fostering collaboration between academia, industry, and entrepreneurs. By aligning with the State's natural and industrial strengths, these clusters will drive high-impact innovations, enhance Odisha's competitiveness, and contribute to the achievement of sustainable economic growth.

Further details about the initiatives planned under Startup Odisha and the establishment of Super Innovation Clusters are comprehensively outlined in the chapter on **'Startup Odisha'**.

CHAPTER

25

DISASTER MANAGEMENT: SAFEGUARDING LIVES AND BUILDING RESILIENT INFRASTRUCTURE



Summary

Increasing frequency and intensity of natural disasters across the world reinforces the need for greater focus and investments in disaster preparedness and planning. Odisha is globally recognised for its achievements in disaster management. The State has achieved near 99% reduction in casualties from the Super Cyclone in 1999 to Cyclone Fani in 2019 till Dana 2024.

The State will build on its ongoing efforts to become a global lighthouse for disaster management, led by latest technology tools and community participation.

By 2047, the State envisions the following outcomes

- Achieve zero casualties from natural disasters
- Ensure zero adverse impact from disaster on livelihood, especially for vulnerable communities
- Attain zero fatalities from avoidable disasters such as snakebites, drowning and lightning

Key initiatives to achieve the outcomes

Augment and modernise disaster response forces equipped with best-in-class technology, equipment and standard operating procedure (SOP)

Build a disaster-resilient community and public infrastructure

Ensure **last-mile connectivity** for early-warning signals

Facilitate alternate livelihood opportunities in disaster-prone communities

Build disaster resilient public infrastructure in accordance with vulnerability profile of the area

Strengthen the existing 'State emergency operations centre (SEOC)' by developing a 'Unified command and control system (UCCS)'

Create a knowledge hub for research and dissemination of best practices

Strengthen the institutional mechanism for effective disaster management

Over the next 24 months, the State will

- **Establish a Center of Excellence (CoE)** in collaboration with a local higher education institution, incorporating the following features:
  - Suite of climate transition analytics solutions
  - Technology stack for enhancing early warning capabilities leveraging AI/ML
  - Standards and taxonomy-setting for disaster-resilient infrastructure
  - Hazard assessment and resilience-mapping of existing critical infrastructure
  - Integrated database of essential infrastructure requiring disaster resilience enhancement
- **Develop and implement the 'Snake rescue and protection application (SARPA)'** – a GIS-based application that will take the coordinates of the victim and map it to the nearest health centre with anti-venom serum

1. Context

Odisha has endured multiple natural disasters over the years. Between 1891 to 2024, the State was hit by over 100 cyclones. The Odisha State Disaster Management Authority (OSDMA), established in 1999, has played a crucial role in making the State a global exemplar in disaster management. The State has achieved near 99% reduction in casualties from the Super Cyclone in 1999, Cyclone Fani in 2019 till Dana in 2024. It was the first State in India to form a specialised force in 2001 - the Odisha Disaster Rapid Action Force (ODRAF). For these feats, **the Government of India awarded the prestigious Subhash Chandra Bose Aapda Prabandhan Puraskar to OSDMA in 2023**.

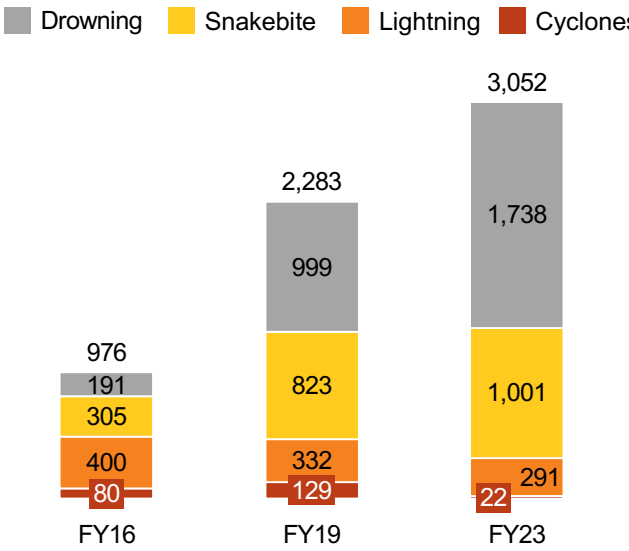
Key efforts undertaken by the State:

- Constituted 20 units of ODRAF with over 1,000 personnel, with plans to increase the strength to 30 units by 2025
- Enrolled over 92,000 volunteers and established over 900 shelters
- Built over 17,000 disaster-resilient houses within five km of the high-tideline
- Developed the Odisha Disaster Resource Network (ODRN), a web-GIS application for preparation of disaster management plan at all administrative levels
- Launched digital platforms such as Statistical Analysis, Monitoring and Assessment of Resources in Training and Handholding (SAMARTH), a database of all volunteers trained in disaster management and System for Assessing, Tracking, and Alerting Disaster Risk Information based on Dynamic Risk Knowledge (SATARK), a mobile application to provide actionable early-warning information

These efforts have led to significant reduction in fatalities from natural disasters. However, fatalities from avoidable disasters like drowning and snakebites have been rising:

EXHIBIT 25.1

Human casualty from disasters in Odisha (nos.)



99% decrease in casualties from Super Cyclone (1999) to Fani (2019) till Dana (2024), due to advance preparedness of the State

90% casualties from drowning and snakebite – OSDMA is implementing Snake Bite Death Reduction Programme in 10 snakebite prone blocks in a mission-mode

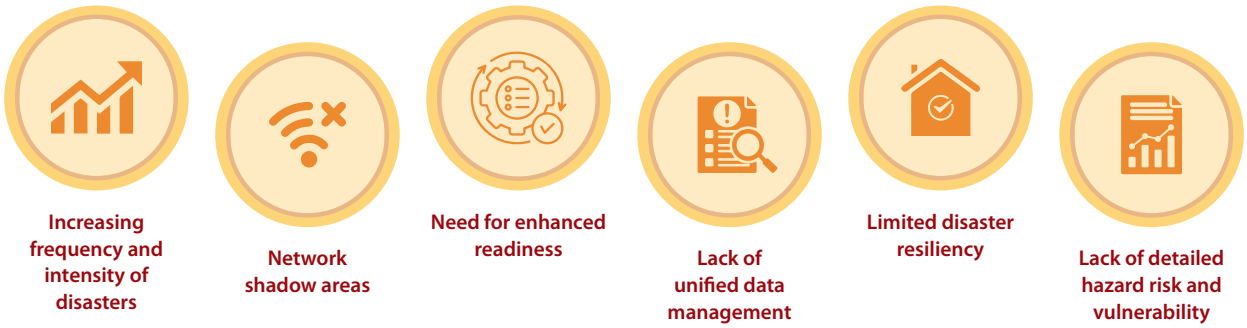
Casualties from lightning are decreasing due to increased awareness

Source: The Odisha State Disaster Management Authority

1.1 Key challenges

Despite remarkable progress in disaster management, several challenges remain:

EXHIBIT 25.2



- **Increasing frequency and intensity of disasters** due to climate change – e.g., severe cyclones, floods, and droughts, putting additional strain on the existing disaster infrastructure
- **Network shadow areas**: Early warning communication and delivery of essential supplies to remote and inaccessible areas remain challenging due to inadequate telecommunication and transport connectivity
- **Need for enhanced readiness**: Intensifying community preparedness and awareness consistently, prioritising the protection of vulnerable groups; incorporating proactive planning for the restoration of livelihoods post-disaster
- **Lack of unified data management**: Multiple interdependencies across departments impede efficient collection, analysis, and dissemination of data
- **Limited disaster resiliency** across critical Government and private infrastructure leads to extensive damage
- **Lack of detailed hazard risk and vulnerability assessment**, hindering targeted communication, rescue and evacuation strategy during disasters

1.2 Key trends

Emerging trends in disaster management highlight the need for stronger focus on technology, public-private partnerships, and community collaborations, as shown below:

EXHIBIT 25.3

Use of technology: Focus on use of drone technology to send help to previously inaccessible locations;

Use of IoT, Gen AI and big data to improve prediction and early warning systems

Higher R&D investment: Increase investments in research and innovative solutions to predict physical climate risks and prepare for better adaptation

Public-private partnerships: More collaborative partnerships, such as combined war-rooms, with public and corporate agencies, businesses, voluntary organisations, etc.

Collaborative approach: Governments are sharing their best practices and learnings through common platforms and joint workshops with global agencies

Robust infrastructure development: Promote disaster-resilient construction practices to withstand extreme weather events;

Ensure proactive planning to protect critical infrastructure, while building community resilience

Reduced economic burden through insurance: Governments worldwide are engaging in risk-pooling through various insurance mechanisms, enabling swift mobilisation of funds during the times of need

Source: United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

Technology is playing a crucial role in disaster management, equipping teams with tools to reduce response time, carry out risk assessment, and strengthen coordination:

EXHIBIT 25.4

Technology tools for disaster management

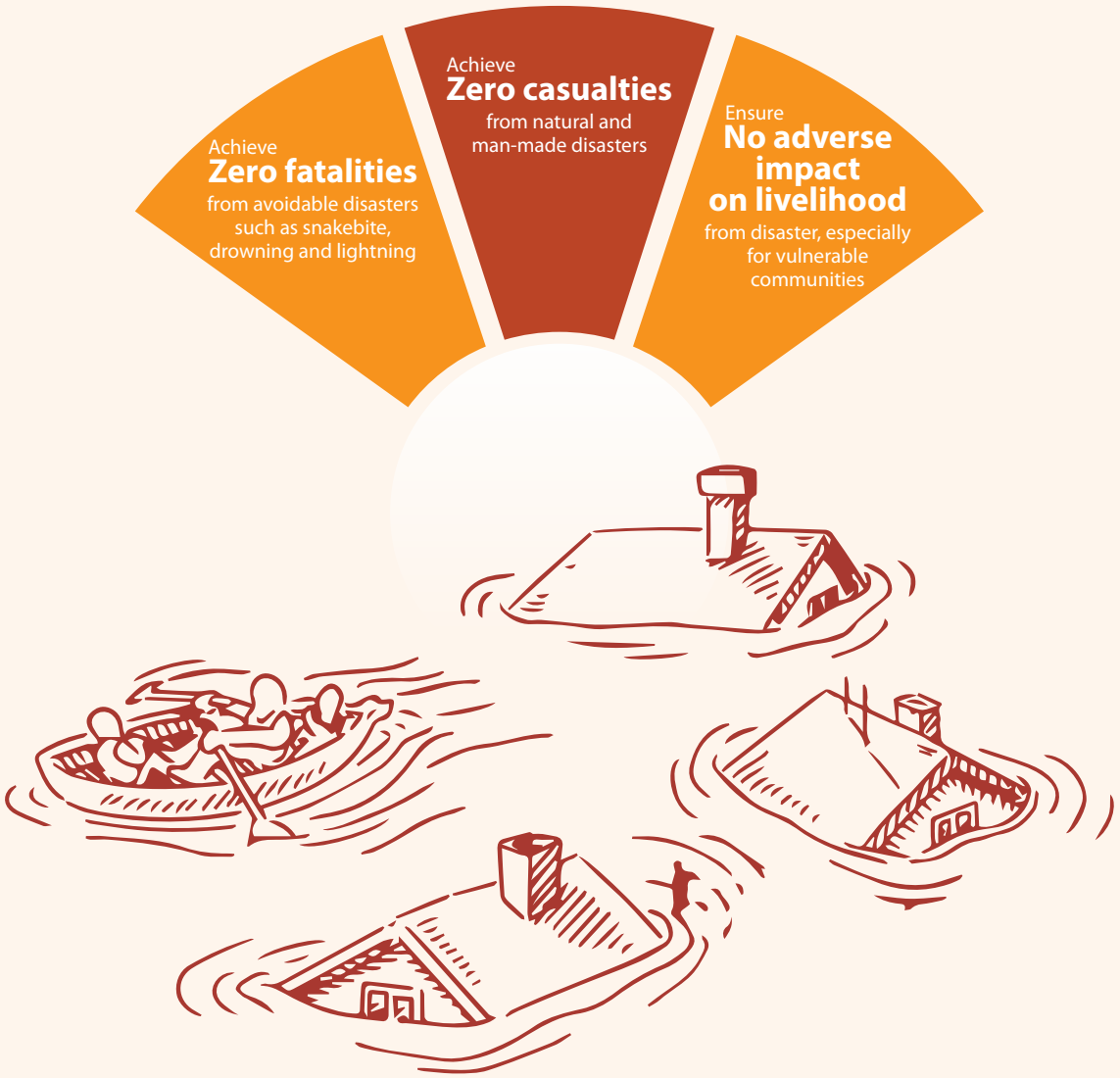
Technology	Projects
Augmented and virtual reality (AR/ VR)	AR/ VR-based solutions are used for education and training purposes, especially for simulations of disaster-inflicted zones
Artificial intelligence (AI)	AI-based solutions leverage historical data and machine learning algorithms to improve disaster response and targeted aid by analysing data, predicting severity, etc.
Remote sensing	It is used for disaster forecasting, tracking storms, and remote data collection especially for inaccessible locations
Drone	Drones assist in damage assessment and delivering supplies to remote and inaccessible areas after the disaster has occurred
Internet of Things (IoT)	IoT-based solutions such as early warning systems, and smart streetlamps with sensors, etc. help in early warning detection, mobilisation, and damage assessment

2. Vision and outcomes

EXHIBIT 25.5

VISION 2047

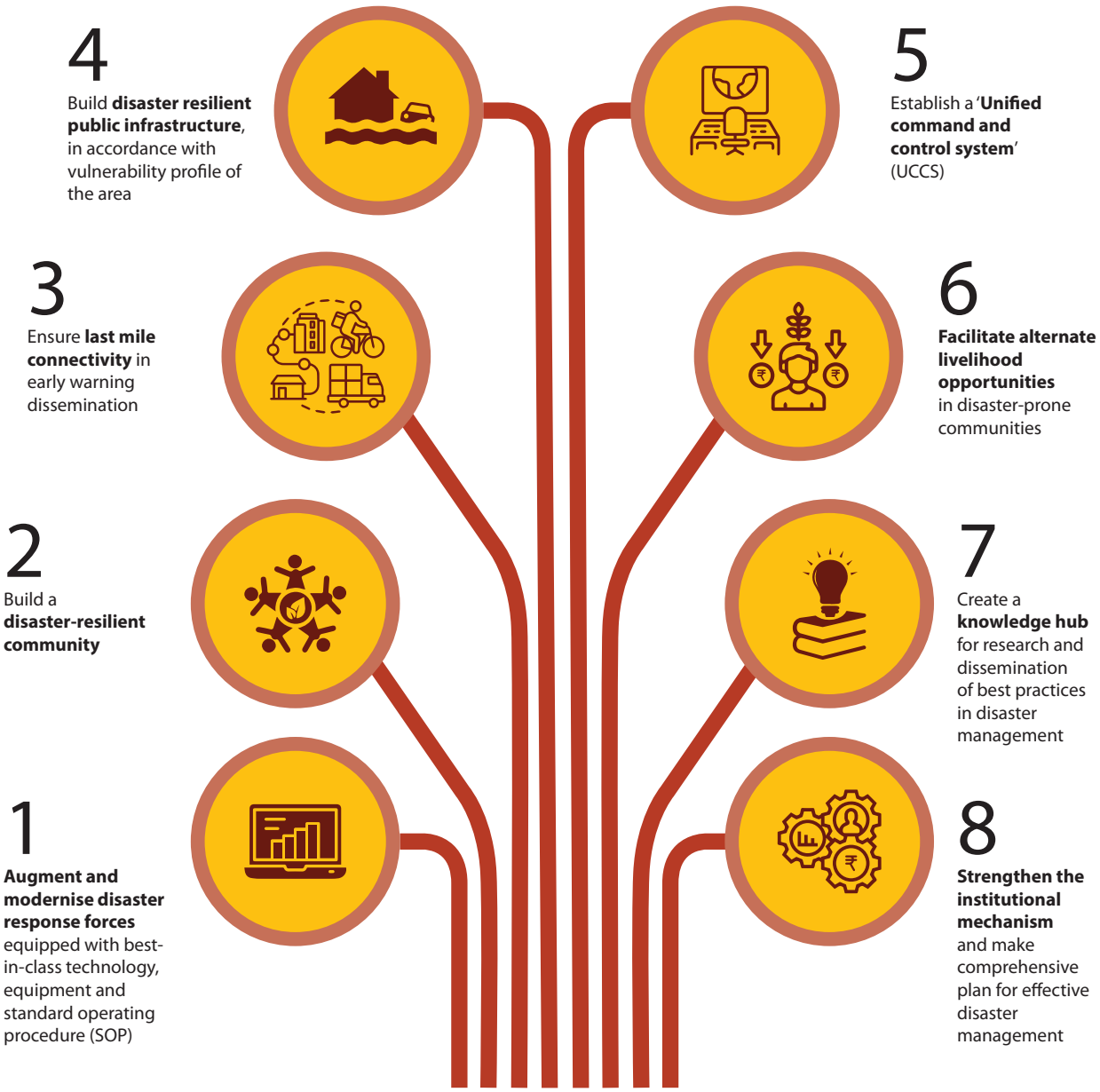
Become a global lighthouse for disaster management, leading by technology adoption, resilient infrastructure and community participation



3. Key initiatives

The State will undertake the following key initiatives to ensure zero casualties from natural, human-induced and avoidable disasters:

EXHIBIT 25.6



3.1 Augment and modernise disaster response forces equipped with best-in-class technology, equipment and standard operating procetdure (SOP)

3.1.1 Strengthen ODRAF, fire service units and civil defence volunteers to develop structured response to disaster exigencies

3.1.2 Develop an **integrated deployment system** of response forces for seamless response during disasters

3.1.3 Create and augment **community-based volunteer base** as first responders

3.1.4 Build state-of-the-art centres in every district for regular training and capability building of response forces and volunteers, leveraging live simulations through AR/VR

3.1.5 Equip ODRAF with a **drone fleet for impact assessment**, and delivery of medical aid, etc.

3.1.6 Install **sensor-based disaster surveillance systems** for risk detection at strategic locations such as lamps, color-coded lights, and loudspeakers

3.2 Build a disaster-resilient community

3.2.1 Scale up awareness and training workshops on best practices in disaster evacuation and relief in all schools, village communities and blocks; conduct regular awareness programmes targeting farmers, Anganwadi and ASHA workers, Aapda Mitras, NGOs, and students, etc.

3.2.2 Build hazard resistance relief centres in every district with regular maintenance and upgradation

3.2.3 Expand volunteer enrolment on the SAMARTH app and ensure that the volunteers undergo periodic training and upskilling

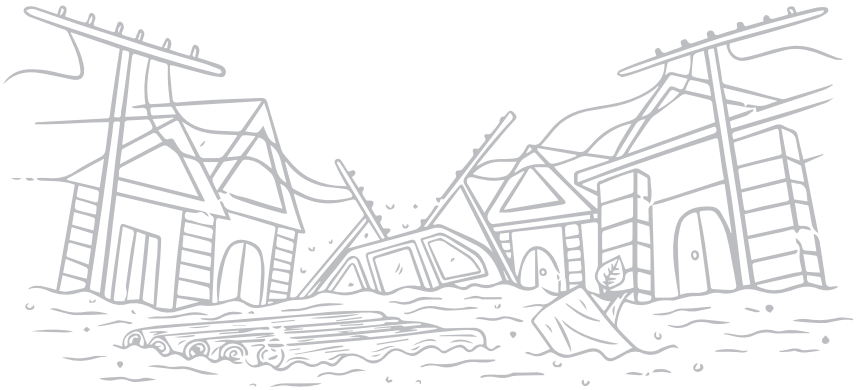
3.2.4 Develop and implement the '**Snake rescue and protection application**'

3.3 Ensure last mile connectivity in early warning dissemination

3.3.1 Ensure 100% mobile and internet connectivity in all disaster-prone areas

3.3.2 Build **inter-operable database** for disaster-resiliency

3.3.3 Deepen penetration of the SATARK app that provides real-time update on disasters; enable text and automated call-based alerts for those who do not have access to the application



3.4 Build disaster resilient public infrastructure, in accordance with vulnerability profile of the area

3.4.1 Work with the relevant departments like Public Works, Rural Development, Panchayati Raj & Drinking Water, Housing and Urban Development, and Energy, etc. to develop **uniform taxonomy and specifications** for disaster-resilient infrastructure

3.4.2 Map resilience of existing infrastructure especially roads, bridges, embankments, dams, telecommunication, healthcare facilities, school buildings and relief centres, etc.

3.4.3 Plan and develop 100% disaster-resilient critical infrastructure, e.g. shelter buildings, schools, hospitals, roads, power, telecom, warehouses and water supply etc.

3.5 Establish a 'Unified command and control system' (UCCS)

3.5.1 Establish UCCS ensuring integration at all levels, that is, State emergency operations centre (SEOC), District emergency operations centre (DEOC) and Block emergency operations centre (BEOC)

3.5.2 Establish a dedicated technology hub in UCCS to integrate AI/ ML for early-detection capabilities and build digital twins to simulate effects of natural disasters

3.5.3 Set up an array of **automated rain-gauges and weather stations**, etc.; integrate the real-time weather data from different sources to make weather forecasting future-ready

3.5.4 Develop a **unified database of critical infrastructure** for seamless public access during disasters

3.6 Facilitate alternate livelihood opportunities in disaster-prone communities

3.6.1 Build a comprehensive **database of vulnerable groups** in disaster-prone areas for livelihood training

3.6.2 Establish skilling centres in these areas for training all eligible workers in alternate skills, ensuring income generation during disasters

3.6.3 Create industry linkages for off-take of products from vulnerable communities

3.7 Create a knowledge hub for research and dissemination of best practices in disaster management

3.7.1 Establish a **central hub** for information repository, resources and research on disaster management

3.7.2 Create a **virtual network of institution**s at global scale to share knowledge and best practices

3.7.3 Develop customised training courses on disaster management; make courses for volunteers under the SAMARTH app

3.7.4 Establish a centre of excellence (CoE) for proactively planning for future disasters, working on climate risk analytics and building disaster resilient infrastructure (detailed in Exhibit 25.7)

EXHIBIT 25.7

Illustrative structure for Centre of Excellence (CoE)

EXHIBIT 25.7 (continued)

Climate risk analytics: Proposed roles and key outcomes

Key role	Description
Build risk analytics solution	• Identify a range of potential natural hazards and climate change scenarios for risk analysis • Build modularity in the scenarios to analyse exposure to any combination of physical hazards and transition risks • Combine physical climate data with additional geo-spatial layers • Allow for real-time update of analytics models with evolving natural hazards • Build a heat-map of all districts and blocks, ULBS for the risk of major hazards in each • Enhance early warning systems with AII/ML-led analytics
Map adaptation levers	• Overlay economic and population models to better understand important socio-economic impacts, including changes in GSDP, jobs, migration, and impact on vulnerable populations due to risks, etc.
Provide recommendations to the department	• Improve early warning alerts for preparedness for all stakeholders • Enable integration of climate adaptation into Government decision making • Curate a list of potential supply chain disruptions and damages to critical infrastructure (e.g., roads, ports, and power grids) • Prioritise across many potential adaptation solutions based on difficult trade-offs (e.g., cost, adaptive capacity, and lead time), and optimise investments and options for 'Blended financing' to improve the risk-return profile of adaptation investments

Disaster resilience: Proposed roles and key outcomes

Key role of the wing	Description
Conduct geo-technical study of the State to understand land nature and mechanics	• Establish advanced infrastructure • Optimise material specification and building architecture
Define taxonomy, specifications and code of compliance for disaster-resilient infrastructure	• Map transmission lines to be buried underground and areas which need raised roads • Provide recommendations to erect seawalls and barriers • Share recommendation on location selection for new critical infrastructure like hospitals, schools, and shelters
Map resiliency of existing infrastructure, especially critical public infrastructure such as roads, grids, and public buildings, etc.	• Estimate inventory for food, medical supplies ahead of high-risk periods • Build a unified, interoperable database covering all important metrics for disaster preparedness and response such as volunteers, shelters, vulnerable persons, and infrastructure like thatched houses requiring disaster proofing, etc.
Build interoperable database for disaster-resiliency	• Advanced warning systems and sensors on critical infrastructure

3.8 Strengthen the institutional mechanism and make comprehensive plan for effective disaster management

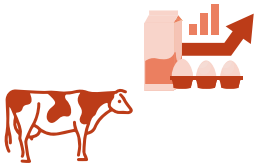
OSDMA, the nodal agency for disaster management in the State will:

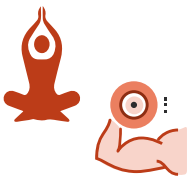
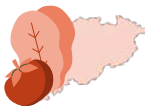
- Coordinate across State departments, GoI, NDMA emergency operation centres, the meteorological department to other stakeholders build an effective strategy and long-term plan for disaster management in the State
- Develop a robust escalation mechanism for issue resolution
- Onboard national and international experts for developing strategy and effective response mechanism on climate change induced natural disasters
- Develop an integrated dashboard displaying key metrics for vulnerable communities, response forces and volunteers, relief centres and weather analytics, etc.

APPENDIX A

36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047

36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047

S.No	Flagship Program name	Focused Impact Areas
1	**Prosperous Farmers –** From Value Chains to Income Security	■ **Launch the Odisha Agriculture Transformation Mission**, targeting 4–5 high-impact value chains (e.g., pulses, oilseeds, horticulture) to contribute ₹25,000–30,000 crore to GVA by 2036 through productivity gains and post-harvest value addition. ■ **Establish end-to-end agri value chains** with at least 100 model mandis with cold storage, warehouses, grading, and logistics infrastructure in key production zones, improving farmer price realisation and reducing post-harvest losses. ■ **Improve farmer incomes** through a sharpened focus on extensively covering animal husbandry and fisheries sector
2	**Irrigation for All –** Unlocking Odisha's Productive Potential	■ **Expand irrigation coverage to at least 80% of cultivable feasible areas by 2036**, ensuring equitable access across regions through major, medium, and minor systems. ■ **Complete at least 5 major, 20 medium, and 100 minor irrigation projects by 2036**, focusing on drought-prone and tribal-dominated regions to stabilise cropping cycles and enhance water-use efficiency. ■ **Increase crop intensity from 1.6 to at least 2.2**, through improved irrigation scheduling, water harvesting, and convergence with farm mechanisation and real-time agri-advisory systems.
3	**Thrust on allied agricultural activities –** Scaling-up production of Milk, Eggs and horticultural products 	■ **Quadruple milk production to 165 lakh litres/day and triple egg production to 1,360 crore eggs annually by 2036**, through breed improvement, expanded fodder cultivation, advanced hatchery networks, and scientific livestock management. ■ **Build a robust livestock infrastructure ecosystem**, including 60 lakh litres/day dairy processing capacity, universal milk and egg collection centres, cold chain networks, and modern IVF, poultry breeder farms, and feed mills—enhancing food security and value chain efficiency. ■ **Create over 10 lakh jobs across dairy and poultry value chains**, by promoting livestock enterprises, scaling cooperative networks, and integrating nutrition-focused entrepreneurship into rural development strategies
4	**Aarogya Odisha 2036 –** Advancing Accessible, Affordable, and Aspirational Healthcare	■ **Ensure universal access to primary and preventive healthcare across all Gram Panchayats by 2036**, through the transformation of Ayushman Aarogya Mandirs into fully equipped wellness centres—offering promotive care, Non-Communicable Disease (NCD) management, anaemia control, and AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) services . ■ **Raise Odisha's doctor-to-population ratio from 0.2 to 0.6 per 1,000 by 2036**, by scaling up government and private medical colleges, expanding skilling for allied health professionals, and implementing team-based care delivery, especially in rural and tribal areas . ■ **Establish world-class Medi-Cities in Bhubaneswar, Cuttack, and the Bhubaneswar–Cuttack–Puri corridor**, supported by telemedicine hubs and tertiary care centres—positioning Odisha as a national leader in medical tourism, with healthcare targeted to contribute 15–20% of the State's total tourist footfall by 2036 .

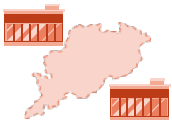
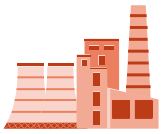
36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047		
S.No	**Flagship Program name**	**Focused Impact Areas**
5	**Fit Odisha –** Active Bodies, Resilient Minds 	■ **Ensure 100% coverage of integrated sports and wellness infrastructure at the block level by 2036**, including playgrounds, indoor stadiums, yoga centers, and open gyms—creating inclusive access for youth, elderly, and marginalized groups in both urban and rural settings. ■ **Empower 80% of school children to achieve age-appropriate fitness and wellness outcomes by 2036**, through structured physical education, compulsory yoga, fitness assessments, and sport-integrated curricula across all government and private schools. ■ **Elevate Odisha into the top 3 sporting states in India by 2036**, with a strong talent pipeline from grassroots to podium, supported by AI-driven scouting, para-sport inclusion, digital coaching, and international-standard training hubs.
6	**Nutrition for All –** Building a Nourished and Resilient Odisha 	■ **Achieve 100% coverage of transformative nutrition interventions by 2036**, with a special thrust on tribal, remote, and underserved areas. This includes fortified meals in schools, targeted feeding for vulnerable groups, kitchen gardens linked to Anganwadis, and diversified, locally sourced nutrition solutions. ■ **Eliminate severe acute malnutrition and undernutrition, and reduce anaemia prevalence among women and children by at least 90%**, through comprehensive micronutrient supplementation, maternal and adolescent health-nutrition convergence, and sustained behaviour change efforts. ■ **Operationalise a next-generation governance model for nutrition**, anchored in the Odisha Pushti Mission, with real-time data systems, skilled frontline workers, community dashboards, and district convergence platforms—ensuring outcomes that are measurable, equitable, and resilient
7	**NIPUN Odisha –** Laying Strong Foundations for Lifelong Success	■ **Achieve 100% foundational literacy and numeracy among children in Grades 1–3 by 2036**, through structured daily learning time, activity-based pedagogy, and continuous assessments under the NIPUN framework—unlocking every child's potential from the start. ■ **Embed mother tongue-based multilingual education in all early learning environments**, enabling better comprehension, confidence, and cultural relevance—supported by locally contextualised materials and teacher training. ■ **Modernise over 75,000 Anganwadi centres by 2036 and link them seamlessly to schools**, ensuring quality early childhood care and education (ECCE) for every 0–6-year-old, with upgraded classrooms, age-appropriate play-based learning to ensure readiness for Grade 1.
8	**Education Hub of the East –** Advancing Knowledge, Empowering Generations	■ **Operationalise at least two world-class Edu-Cities in Bhubaneswar and Sambalpur by 2029**, serving as anchors for Odisha's goal to emerge as the Education Hub of Eastern India by 2036. These cities will host multidisciplinary universities, global research institutions, and advanced vocational hubs, contributing ₹40,000–50,000 crore to the State's GSVA. ■ **Attract at least 25,000 international and out-of-state students annually by 2036**, through dual-degree programs, international partnerships, and high-quality residential and digital learning infrastructure—transforming Odisha into a global education destination. ■ **Create at least 1 lakh new jobs in education, EdTech, and research services by 2036**, supported by institutional expansion, faculty development, and investment in education innovation and entrepreneurship.

36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047

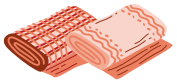
S.No	Flagship Program name	Focused Impact Areas
9	**Skilled in Odisha –** Skilling for the World	■ **Establish at least three new World Skill Centre campuses by 2036** in priority sectors such as IT/ITeS, aerospace, semiconductors, and marine engineering—creating a network of innovation-driven skilling hubs across Odisha. ■ **Place at least 100,000 youth annually in overseas employment**, supported by industry-integrated skilling, foreign language training, and career support, while simultaneously strengthening domestic employability pipelines. ■ **Upgrade existing Industrial Training Institutes (ITIs) into Centres of Excellence**, co-designed with industry and linked to global standards, ensuring high employability and future-readiness. ■ **Expand the 'Skilled in Odisha' brand into a global identity**, backed by international partnerships, cutting-edge digital skilling infrastructure, and aspirational impact stories of Odisha's youth success, making Odisha a preferred source of skilled global talent.
10	**Women Led development -** SUBHADRA PLUS & Lakhpati Didi	■ **Empower at least 36 lakh women to become 'Lakhpati Didis' by 2036**, Earning ₹1 lakh or more annually through dignified, diverse livelihood opportunities in rural and urban sectors—turning household enterprises into economic engines. ■ **Ensure 90% financial inclusion for women by 2036**, with universal access to bank accounts, affordable credit, insurance, pensions, and digital payments. ■ Implement **SUBHADRA PLUS** as a state-wide initiative to empower women.
11	**Digital Sushasan –** Odisha's People-First Governance Engine	■ **Establish an end-to-end feedback and service delivery loop**, integrating **Jana Sunani, Odisha One,** and **Ama Sarkar** into a unified digital governance stack—covering over **650 G2C services**, enabling **real-time grievance tracking**, auto-escalation, and paperless approvals in 100% of departments. ■ **Re-engineer internal government processes across all major departments**, automating 80%+ approvals, eliminating legacy bottlenecks, and cutting grievance resolution times from **2–3 months to under 30 days**—powered by AI-enabled dashboards and chatbots. ■ Leverage **Odisha AI Mission** as a state-wide initiative to **embed artificial intelligence** into **citizen service delivery, predictive governance, and real-time decision support systems**, ensuring a leap in responsiveness, efficiency, and transparency. ■ **Empower every citizen through decentralised digital feedback**, scaling *Ama Sarkar* to **all Panchayats and urban wards** for participatory monitoring, with **live issue maps, crowdsourced ratings**, and accountability metrics made visible to communities and leadership alike.
12	**Citizen-Centric Law & Order –** Smart, Sensitive, and Seamless Policing	■ **Redesign Odisha's policing framework by segregating investigation and enforcement wings** in all districts, improving focus, efficiency, and transparency in criminal justice delivery. Dedicated cyber units and digital surveillance for modernise operations statewide. ■ **Scale citizen-facing policing solutions, including universal rollout of the Sahayata App**, digital FIRs, real-time complaint status tracking, and video-enabled evidence submission-creating a frictionless experience rooted in public trust. ■ Establish **gender-responsive police stations, mobile response units**, and **digital monitoring tools** to make Odisha a national leader in inclusive and community-oriented policing.

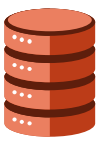
36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047		
S.No	**Flagship Program name**	**Focused Impact Areas**
13	**Next Gen Infrastructure for Viksit Odisha**	■ **Transform over 75,000 km of roads and bridges** into a modern, high-speed network connecting every district and economic hub. ■ **Triple airport capacity** with at least nine regional airports enabling faster travel, emergency access, and expanded tourism circuits. ■ **Lay an additional 3,000 km of new railway lines**, doubling the State's network to fuel mineral evacuation, urban mobility, and economic growth.
14	**Gramya Shakti –** Enabling Dignified Livelihoods	■ **Create 60 lakh new non-farm jobs by 2036** across rural and tribal areas, by scaling up agro-processing, rural construction, crafts, and service-based industries-ensuring inclusive employment for youth and women in high-migration districts. ■ **Develop 5,000 Gram Panchayats as vibrant economic clusters by 2036**, with co-located skilling centres, common facility hubs, digital services, and aggregation units to generate local income opportunities and anchor populations in their communities. ■ **Ensure zero distress migration by establishing a state-wide migrant support system, ensuring portable social entitlements**, access to seasonal livelihood options, and reintegration schemes-so that mobility is driven by aspiration, not distress.
15	**Urbanization as an Engine of Growth**	■ Develop at least two major economic regions-**Bhubaneswar-Cuttack-Puri-Paradeep and Jharsuguda-Sambalpur**-Bargarh-into fully integrated urban corridors with world-class infrastructure, employment hubs, and service delivery. ■ **Double Odisha's urbanisation rate from 17% to nearly 40% by 2036**, enabling more than 1.5 crore people to access better housing, mobility, and quality of life. ■ **Position urban clusters to contribute over 50% of the State's GSDP**, transforming cities into engines of inclusive growth, entrepreneurship, and modern public services.
16	**Liveable Cities for All –** Raising Urban Quality of Life	■ **Improve living standards for over 50 lakh urban residents** through targeted upgrades in housing, water, sanitation, mobility, and public spaces. ■ **Launch a performance-linked Liveable Cities Index**, with **at least 45 cities** benchmarked annually on quality-of-life metrics. ■ **Establish a centralised Urban Planning and Design Authority** to ensure every city grows with clear zoning, green infrastructure, and citizen-centric development.

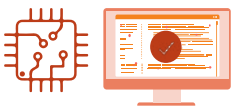
36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047		
S.No	**Flagship Program name**	**Focused Impact Areas**
17	**Odia Asmita –** Celebrating the Eternal Soul of Odisha	■ **Establish Odisha as the global epicentre of the Lord Jagannath consciousness**, by promoting the timeless spiritual, cultural, and civilisational significance of Lord Jagannath through global forums, cultural exchanges, research centres, and curated heritage content. Develop unified documentation and interpretation of rituals, symbols, and philosophies that shape the Jagannath tradition. ■ Build **Sanskruti Bhavans in each of Odisha's 30 districts** as district-level hubs for classical and folk arts, archival preservation, Odia language promotion, and regional cultural programming. ■ Develop **Asmita Bhavans** in major Indian metros and international cities with significant Odia diaspora presence, serving as cultural outreach platforms for Odia literature, cuisine, festivals, and heritage diplomacy. ■ Operationalise the **O-Sampark Policy** as a formal institutional mechanism to engage 1 million+ global Odias through structured diaspora networks, annual summits, Odia Parbas, and digital heritage platforms. ■ Commemorate Odisha's **freedom fighters and cultural icons** by developing **memorials, cultural circuits, and heritage villages** anchored in their birthplaces and contributions.
18	**Inclusive Odisha –** Addressing socioeconomic and regional inequities	■ **Ensure 90%+ saturation of villages with core infrastructure by 2036**, including roads, schools, sanitation, healthcare, electricity, and piped drinking water-delivered with special focus on tribal, SC and other underserved habitations. ■ **Achieve universal coverage of key welfare schemes for all eligible vulnerable households**, including social protection, nutrition, housing, and education benefits, through convergence-based delivery and strengthened last-mile capacity. ■ **Elevate health, education, and livelihood outcomes for marginalised groups**, by scaling targeted investments in model schools, community health services, and livelihood generation for over 2.5 lakh vulnerable households-ensuring no community is left behind
19	**Yuva Shakti Odisha –** Youth Powering Inclusive Development	■ **Mainstream youth leadership in governance and service delivery**, by embedding young citizens in data collection, grievance redressal, village monitoring, and civic innovation initiatives across all Gram Panchayats and Urban Wards-aligned with Odisha's Digital Sushasan and AI governance missions ■ **Enable every youth to become future-ready**, through universal access to foundational education, digital literacy, skill-linked career pathways, and mental-physical wellness programs-anchored in *Skilled in Odisha, Fit Odisha Mission,* and *World Skill Centres* ■ **Transform villages and towns into youth-led innovation zones**, by supporting youth in designing local solutions-whether it's building digital tools for school tracking, piloting rural microenterprises, or launching community fitness challenges-fueling a culture of experimentation and entrepreneurship across Odisha.

36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047		
S.No	**Flagship Program name**	**Focused Impact Areas**
20	**Udyog Odisha –** Fueling the State's Industrial Ascent 	■ **Establish at least 3–5 mega industrial parks** across priority sectors like aerospace, defence, textiles, and electronics, aiming to attract **INR 3 lakh crore in cumulative investments by 2036**. ■ **Create over 30 lakh industry-linked jobs by 2036**, supported through targeted skilling, plug-and-play infrastructure, and investor facilitation across manufacturing zones
21	**Thrust on Employment –** Generating Industries 	■ **Accelerate investments** in labour-intensive sectors such as **non-leather footwear, food processing, and textiles**, supported by integrated infrastructure, policy incentives, and land-readied clusters-**positioning Odisha among the top three states** in apparel and processed food exports by 2036. ■ **Drive large-scale employment creation** through MSME-led manufacturing ecosystems, **anchor investor partnerships,** and **industry-aligned skilling programs**, ensuring that local talent is equipped and absorbed across priority sectors. ■ **Develop specialised industrial parks and common facility centres** for light manufacturing-featuring plug-and-play spaces, export logistics, and worker housing-especially in aspirational districts, to unlock equitable industrial growth across the state.
22	**Ama Udyog –** 20 Lakh Strong MSME Base for Odisha	■ **Empower and formalise 20 lakh MSMEs** across Odisha by 2036-doubling the current base-through structured credit, market access, skilling, and digitisation, with targeted interventions for women, youth, and tribal entrepreneurs. ■ **Enable MSMEs to generate over 40% of Odisha's industrial employment**, with cluster development, formal credit access, and value-chain integration across 30 districts. ■ Mobilise **₹25,000 crore** in MSME financing and infrastructure over the next decade, with 20% earmarked for women-led and SHG-linked enterprises. ■ Enable **5,000 Odia MSMEs** to enter export markets under the "**Made in Odisha, Sold to the World**" campaign
23	**Startup Hub of the East –** From Grassroots to Global Champions	■ **Scale up the Odisha Startup Growth Fund into a ₹10,000 crore fund-of-funds by 2036**, empowering over **5,000 high-potential ventures** across emerging sectors like deep tech, agri-tech, health-tech, circular economy, and climate innovation. ■ **Establish 10–15 world-class Innovation urban and semi-urban centres**, each integrating co-located incubators, nano-unicorn accelerators, research hubs, and school-to-startup ideation pipelines-igniting an ecosystem of fearless, first-generation entrepreneurs. ■ **Generate 1 lakh+ startup-led jobs**, making Odisha a launchpad for scalable innovation, where startups contribute nearly **10% of all new employment** and redefine inclusive growth from the grassroots upward.

36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047

S.No	Flagship Program name	Focused Impact Areas
24	**Karigar Shakti –** Unleashing Odisha's Artisan Power 	■ **Establish 30 Heritage Craft Villages** (15 handloom and 15 handicraft) across Odisha, serving as integrated production–training–tourism hubs to revive and sustain over **50 GI-tagged crafts** and regional artisan traditions. ■ **Empower 1.5 lakh artisans, weavers, and folk artists** with secure livelihoods through structured skilling, digital market access (Boyanika, Utkalika, ONDC), formal recognition via Artisan IDs, and social protection mechanisms. ■ **Scale Odisha's creative economy by targeting ₹4,500 crore in cultural exports** through a dedicated Creative Economy Fund, national institutions like the **School of Kalinga Scripture**, and world-class digital museums celebrating Odia craftsmanship.
25	**Odisha Connect –** Building Seamless Trade Corridors	■ **Unlock inland freight potential** by operationalising National Waterway-5 and NW-64, shifting bulk cargo to faster, greener river routes ■ **Establish at least four state-of-the-art logistics hubs** across industrial and mining zones to power regional trade and streamline supply chains ■ **Dedicated mining corridors** will be developed to connect mineral-rich belts with ports and processing hubs, ensuring faster movement of resources and reducing turnaround time by over 40%. ■ **Shift minimum one-third of all freight to rail and waterways**, slashing logistics costs, easing road congestion, and promoting sustainable transport
26	**Blue Economy Leadership –** Unlocking Odisha's Coastal Power	■ **Leverage Odisha's 575 km coastline to build a ₹25,000 crore Blue Economy by 2036**, by scaling up marine and brackish water aquaculture-including shrimp, seabass, tilapia, and mud crab-through climate-smart practices, cluster-based farming, and expanded hatchery networks. ■ **Quadruple seafood production from 0.16 to 0.90 MMTPA by 2036**, enabled by world-class infrastructure-5 seafood parks, deep-sea fishing harbours (e.g., Gopalpur), processing hubs, and export-ready cold chains-making Odisha a global hub for high-value marine exports. ■ **Create over 8 lakh jobs across the Blue Economy value chain**, from fishing and aquaculture to logistics, processing, and exports-transforming livelihoods across coastal districts including Ganjam, Kendrapada, Bhadrak, Balasore, and Puri.
27	**Port led Growth –** Powering Odisha's Future	■ **Expand Paradip Port's capacity to 300 MMTPA** and scale **up non-major port capacity to 200 MMTPA by 2036**, including at least eight new non-major ports to boost coastal connectivity. ■ **Position Gopalpur and Paradeep as green energy hubs**, focusing on green hydrogen, ammonia, and related port-based industrial ecosystems. ■ **Establish Special Employment Zones** around port clusters to create thousands of **maritime, warehousing, and logistics jobs**, transforming Odisha into a major **eastern export and transshipment corridor**.
28	**Petro Odisha –** Building India's Chemical Growth Belt	■ **Transform Paradip PCPIR into a global petrochemical hub**, anchored by a **2–2.5 MMPTA cracker unit** and integrated downstream industries. ■ **Attract ₹1–1.5 lakh crore in investments** over five years, enabling allied manufacturing and driving large-scale job creation across coastal districts. ■ **Develop mega industrial clusters at Dhamra and Gopalpur**, integrating chemical, logistics, and port infrastructure to position Odisha as a national chemical manufacturing champion.

36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047		
S.No	**Flagship Program name**	**Focused Impact Areas**
29	**Mining & Metals –** Sustaining Leadership, Accelerating Growth	■ **Expand the mining and metals sector to contribute ₹2.5 lakh crore to Odisha's GSVA by 2036**, driven by increased mineral production, digitised exploration, and a reduced mine operationalisation time from over four years to under three—transforming ease of doing business in the sector. ■ **Mobilise ₹2 lakh crore in investments to establish world-class metal parks and downstream processing hubs by 2036**, anchored in a plug-and-play model to scale value-added manufacturing in aluminium, stainless steel, and speciality alloys. ■ **Create over 2 lakh jobs in the downstream metal sector**, powered by MSME-led manufacturing, skilling hubs, employment-linked incentives, and shared industrial infrastructure to make Odisha a national epicentre for metal-based innovation and exports.
30	**Transitioning Towards Sustainable Energy –** Powering Odisha's Green Future	■ **Enable 50% of end-use electricity consumption in agriculture and urban households to be powered by solar energy by 2036**, through accelerated deployment of rooftop solar systems, decentralised solar infrastructure, and rural energy hubs—positioning Odisha as a national leader in inclusive clean energy adoption. ■ **Commission 7 GW of pumped storage hydropower capacity by 2036**, enhancing renewable energy integration and ensuring grid stability. This transition will mobilise over ₹38,000 crore in green infrastructure investments. ■ **Build a future-ready energy ecosystem to meet over 2.2 lakh million units of annual electricity demand by 2036**, with an additional 10–15% generation capacity to enable power exports. Backed by ₹2.5–3 lakh crore in investments across generation, transmission, and digital distribution.
31	**The New Frontier of Global Tourism -** Think India, Think Odisha	■ **Transform at least 15 iconic destinations into world-class tourism magnets by 2036**, unlocking the full potential of **the Bhubaneswar–Puri–Konark–Chilika corridor**, pristine eco-retreats, and spiritual heritage circuits to position Odisha as the cultural and ecological jewel of India. ■ **Quadruple high-value tourist footfalls to over 30 lakh by 2036**, by expanding premium hospitality capacity to **15,000+ luxury keys**, enhancing multimodal connectivity, and delivering immersive experiences across wellness, heritage, adventure, and nature tourism. ■ **Create over 8 lakh dignified tourism jobs by 2036**, through destination-led development, vibrant festivals, global promotion campaigns, and world-class skilling in hospitality, tour operations, guiding, and creative tourism enterprises-anchoring tourism as a pillar of Odisha's economic and cultural resurgence.
32	**Data Centre Grid –** The Digital Backbone of Bharat, Built in Odisha 	■ **Establish a future-ready digital infrastructure grid**, featuring Tier-IV data centres in **Rourkela**, Sambalpur, and Jharsuguda, and anchored by an international **undersea cable landing station at Puri**-unlocking ₹10,000 crore in strategic private and public investments. ■ **Generate 25,000+ high-skilled jobs in digital technology**, spanning AI operations, cybersecurity, data governance, semiconductors, and cloud systems-driven by global partnerships and certified training pipelines aligned with industry 4.0. ■ **Set a national benchmark in sustainable data infrastructure**, with a commitment that **at least 33% of energy demand** for data centres will be met through green and renewable sources-making Odisha India's clean-tech data capital.

36 for 36 - Flagship Programmes for Odisha Vision 2036 & 2047		
S.No	**Flagship Program name**	**Focused Impact Areas**
33	**GCC Hubs –** Making Odisha the Next Global Delivery Powerhouse	■ **Develop three world-class GCC hubs** across Bhubaneswar–Cuttack–Puri–Paradip and Sambalpur–Jharsuguda–Rourkela, transforming Odisha into a **preferred destination for global IT delivery powerhouse**, including the establishment of a flagship Fintechs City in Bhubaneswar. ■ **Enable over 2 lakh digitally skilled professionals** by 2036 through industry-academia partnerships, FinTech academies, global certifications, and embedded delivery labs focused on AI-led banking, compliance, and financial innovation. ■ **Offer future-ready infrastructure and investor-friendly policies**, including plug-and-play campuses, high-speed connectivity, hybrid working models, and regulatory sandboxes-making Odisha the **Eastern Gateway for Fortune 500 GCCs and financial institutions**.
34	**Tech Odisha –** Silicon to Software 	■ **Position Odisha as a national hub for IT/ITES, Electronics System Design and Manufacturing (ESDM), and semiconductors**, by promoting innovation corridors, policy incentives, and anchor investments across Khurda and Ganjam district ■ **Develop dedicated ESDM and semiconductor clusters** for chip design, embedded systems, component manufacturing, and advanced packaging-supported by design-led startups, R&D institutions, and specialised skilling programs. ■ **Enable high-value employment and global delivery leadership** in IT/ITES and ESDM sectors, through industry-academia integration, global certification pipelines, and partnerships with leading technology firms.
35	**Green Odisha –** Forests for Climate Action, Livelihoods, and Growth	■ Odisha's forest wealth directly benefits its people by leveraging **Minor Forest Produce (MFP) through 100+ tribal processing hubs**, enabling value addition in sal, tamarind, bamboo, and medicinal plants-unlocking ₹5,000+ crore in annual income. ■ **Position Odisha as a national leader in forest-led sustainability**, by safeguarding its land under forest cover, promoting biodiversity conservation, and expanding circular waste management—including plastic, biomedical, and e-waste—to build climate-resilient ecosystems across Talcher, the Ib Valley, and other vulnerable landscapes. ■ **Create 10 lakh green livelihoods by 2036**, through community-led forest **enterprises and aggressively promote Odisha as a model for Eco-Tourism**.
36	**Odisha Disaster Resilience Mission –** A Global Standard in Climate Readiness	■ **Build 100% disaster-resilient infrastructure across all vulnerable zones**, including embankments, roads, telecom, and health facilities-supported by a **multi-tiered command-and-control centre** from State to GP level for proactive emergency response. ■ **Deploy advanced technology for early warning and rapid response**, including **AI/ML-based flood prediction**, satellite-linked alerts, drone-based assessment, and real-time dashboards for response coordination across departments. ■ **Institutionalise community-led preparedness**, by **training over 1 lakh certified volunteers**, establishing local disaster resilience hubs, and embedding recovery, livelihood restoration, and climate adaptation into every district's disaster response plan.

APPENDIX B

List of Abbreviations

S. No.	Acronym	Full form
1	AE	Advanced Estimate
2	AQI	Air Quality Index
3	AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy
4	BUA	Built-up Area
5	CAGR	Compound Annual Growth Rate
6	CEO	Chief Executive Officer
7	CoE	Centre of Excellence
8	EGoS	Empowered Group of Secretaries
9	EoDB	Ease of Doing Business
10	EV	Electric vehicle
11	EWS	Economically Weaker Sections
12	FDI	Foreign Direct Investment
13	FY	Financial year (starting from April of the first year to March of the next year)
14	G2G	Government to Government
15	GCC	Global Capability Centre
16	GDP	Gross Domestic Product
17	GI	Geographical Indication
18	GO-SWIFT	Government of Odisha – Single Window for Investor Facilitation and Tracking
19	GSDP	Gross State Domestic Product
20	GST	Goods and Services Tax
21	GVA	Gross Value Added
22	ICDS	Integrated Child Development Services
23	IDF	Infrastructure Debt Fund
24	IoT	Internet of Things
25	IMR	Infant Mortality Rate
26	InvITs	Infrastructure Investment Trusts

S. No.	Acronym	Full form
27	ITeS	Information Technology Enabled Services
28	LFPR	Labour Force Participation Rate
29	MICE	Meetings, Incentives, Conferences, and Exhibitions
30	ML	Machine learning
31	MMLP	Multi-Modal Logistics Park
32	MMTPA	Million Metric Tons Per Annum
33	MNC	Multi-National Companies
34	MRO	Maintenance, Repair, and Operations
35	MSME	Micro, Small and Medium Enterprises
36	NBFC	Non-Banking Financial Company
37	NFHS	National Family Health Survey
38	NGO	Non-Government Organisation
39	NH	National Highway
40	PMU	Project Management Unit
41	PPA	Power Purchase Agreement
42	PPP	Public-Private Partnership
43	psf	per square feet
44	RE	Renewable Energy
45	R&D	Research and Development
46	SEZ	Special Economic Zones
47	SC	Scheduled Caste
48	SHG	Self-Help Group
49	SOP	Standard Operating Procedures
50	SPV	Special Purpose Vehicle
ST	ST	Scheduled Tribe
ULB	ULB	Urban Local Body

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