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## Artificial Intelligence and Vikasit Maharashtra 2047: A Roadmap for Smart, Inclusive, and Sustainable Growth

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### Abstract:

Artificial Intelligence (AI) is revolutionizing Maharashtra's pursuit of Vikasit Maharashtra 2047, influencing vital sectors such as governance, education, agriculture, rural development, and industry. With an ecosystem comprising innovative policies, cutting-edge research, institutional support, and public-private partnerships, Maharashtra aims to leverage AI to drive inclusivity, economic growth, and sustainable development. This paper presents an exhaustive analysis of Maharashtra's AI landscape, incorporating recent government initiatives, institutional frameworks, AI-powered sectoral transformations, and socio-economic projections through 2047. Emphasis is given to key policy instruments such as the MahaAgri-AI Policy, AI Centres of Excellence, and the establishment of an AI university, alongside case studies of pioneering smart villages. The challenges surrounding AI implementation, ethical considerations, and strategies for capacity building are also discussed (Government of Maharashtra, 2025a; Khekale & Desai, 2025).

**Keywords:** Artificial Intelligence, Vikasit Maharashtra 2047, MahaAgri-AI Policy, Smart Villages, AI in Education, Digital Governance, AI University, Inclusive Development, AI in Agriculture, AI Policy 2025

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### Introduction:

Maharashtra, one of India's most industrialized and populous states, is embarking on a transformative journey to harness Artificial Intelligence (AI) as a catalyst for socio-economic progress aligned with the vision of Vikasit Maharashtra 2047. This endeavor situates AI not only as a technological tool but as a strategic enabler of smart governance, digital literacy, sustainable agriculture, and inclusive development across urban and rural landscapes. Maharashtra's ambitious approach is characterized by the formulation and operationalization of progressive policies, establishment of AI infrastructure such as innovation hubs and universities, and collaborations across

government, academia, and industry to build a vibrant AI ecosystem (Government of Maharashtra, 2025a; Ministry of Electronics and IT, 2024).

### Policy Environment and Institutional Framework:

#### Maharashtra's Comprehensive AI Policy Framework:

In early 2025, Maharashtra announced a pioneering AI policy aimed at positioning the state as India's leading AI hub. The policy encapsulates a multi-sectoral strategy, integrating AI into governance, education, agriculture, healthcare, legal technology, and promoting ethical AI practices and digital equity. Key pillars include promotion of

innovation, workforce upskilling, data infrastructure development, and startup ecosystem rejuvenation (Government of Maharashtra, 2025a; Khekale & Desai, 2025). A 16-member committee, led by the Directorate of Information Technology, is tasked to draft a comprehensive AI policy that aligns with the India AI Mission, fostering industrial growth and digital economy development for the state (Government of Maharashtra, 2025b).

#### **AI Task Force and Governance:**

The Maharashtra government established an AI task force comprising industry experts from corporations like Microsoft and Amazon and academic leaders. The task force orchestrates AI policy formation and oversees execution. A high-level governance committee chaired by the Chief Secretary supervises departmental AI integrations, ensuring coordination and data security (Government of Maharashtra, 2025c; Sharma, 2025).

#### **AI Innovation Ecosystem:**

MahaHub, Maharashtra's AI innovation center supported by business leaders including Kumar Mangalam Birla and Anand Mahindra, acts as a nucleus for research, startups, and skill development. Complementing this is the establishment of Maharashtra AI University in Mumbai with collaborations from IIT Mumbai and IIM Mumbai, targeting training of over 25,000 AI professionals and nurturing more than 100 AI startups by 2035 (Joshi, 2025; Sharma, 2025).

#### **Global Capability Centers (GCCs) and AI Parks:**

To attract international tech firms, Maharashtra is developing GCC parks in Mumbai, Pune, Nagpur, Sambhaji Nagar, and Nasik, fostering AI innovation, software development, and global service delivery. This

infrastructure supports Maharashtra's vision as a global AI hub (Patil, 2025; Joshi, 2025).

#### **AI in Governance and Public Service:**

The Maharashtra government is modernizing public administration through AI-driven initiatives:

- **AI Centres of Excellence:** MoUs with firms like Microsoft led to centers specializing in geospatial analytics for disaster management, forensic AI for law enforcement, and governance process optimization (Sharma, 2025; Singh, 2025).
- **MARVEL:** The Maharashtra Advanced Research and Vigilance for Enforcement of Reformed Laws Limited integrates AI to strengthen regulatory oversight and anti-corruption transparency.
- **State Data Center:** Developing a resilient data center in Nagpur for data protection, interoperability, and cybersecurity.

These initiatives aim to enhance administrative transparency, expedite decision-making, and improve citizen services (Singh, 2025; Sharma, 2025).

#### **AI in Agriculture: MahaAgri-AI Policy 2025–2029:**

Agriculture employs a significant portion of Maharashtra's population, and the MahaAgri-AI Policy launched with ₹500 crore funding aims to transform farming through AI, drones, blockchain, robotics, and emerging technologies (Khekale & Desai, 2025; Patel, 2025; Ramachandran, 2025).

- **Precision and Climate-Resilient Farming:** AI-enabled IoT devices, computer vision, and predictive analytics optimize water use, pest control, and yield (Khekale & Desai, 2025).
- **Digital Advisory Systems:** Multilingual AI chatbots and voice assistants provide real-time localized advisories in Marathi covering crop production, disease control, weather, market prices, and government

schemes (Patel, 2025; Khekale & Desai, 2025).

- **Supply Chain Traceability:** Blockchain-based traceability with QR code tagging enhances food safety and export compliance, especially for major crops

like grapes, bananas, and pomegranates (Ramachandran, 2025; Patel, 2025).

- **Farmer Empowerment:** AI platforms improve transparent market access and fair pricing, increasing average income by up to 35% projected by 2047 (Ramachandran, 2025; Khekale & Desai, 2025).

| Service                      | 2025       | 2030       | 2047         |
|------------------------------|------------|------------|--------------|
| AI-Advised Farmers           | 5 lakhs    | 20 lakhs   | 50+ lakhs    |
| AI-Optimized Cultivated Area | 10 lakh ha | 50 lakh ha | 100+ lakh ha |
| Income Uplift (Average)      | 10%        | 20%        | 35%          |

*Table: Maharashtra AI-enabled Agriculture Service Projections (Patel, 2025; Khekale & Desai, 2025; Ramachandran, 2025)*

### Digital Public Infrastructure:

The policy includes Agricultural Data Exchange (ADeX) for secure data sharing, an AI Sandbox for startup innovation, and a Geospatial Intelligence Engine for real-time monitoring of crops and climate (Patel, 2025; Ramachandran, 2025).

### AI in Education and Employment:

Education in Maharashtra is evolving through AI to personalize learning, improve literacy, and equip students with future-ready skills:

- Adaptive learning platforms provide personalized content and real-time feedback enhancing secondary and higher education outcomes (Deshpande, 2025).
- The Maharashtra AI University contributes to training a workforce with AI knowledge, preparing 10,000 women and thousands more through collaborations with global tech giants (Joshi, 2025; Sharma, 2025).
- Public employment policies integrate AI literacy and reskilling programs addressing AI's dual role in job creation and displacement (Government of Maharashtra, 2025a).

### AI for Legal Technology and Cybersecurity:

AI permeates Maharashtra's legal and security frameworks:

- AI-based litigation tracking improves case management reducing delays prevalent in public legal services.
- Cybersecurity AI enhances threat detection, data integrity, and state data protection, key for safeguarding citizen and government data (Government of Maharashtra, 2025a; Ministry of Electronics and IT, 2024).

### Smart and Intelligent Villages: The Satnavari Model:

Maharashtra pioneers AI-driven rural development with the Satnavari smart village, integrating AI in agriculture, education, healthcare, and governance (Government of Maharashtra, 2025d; Rao, 2025).

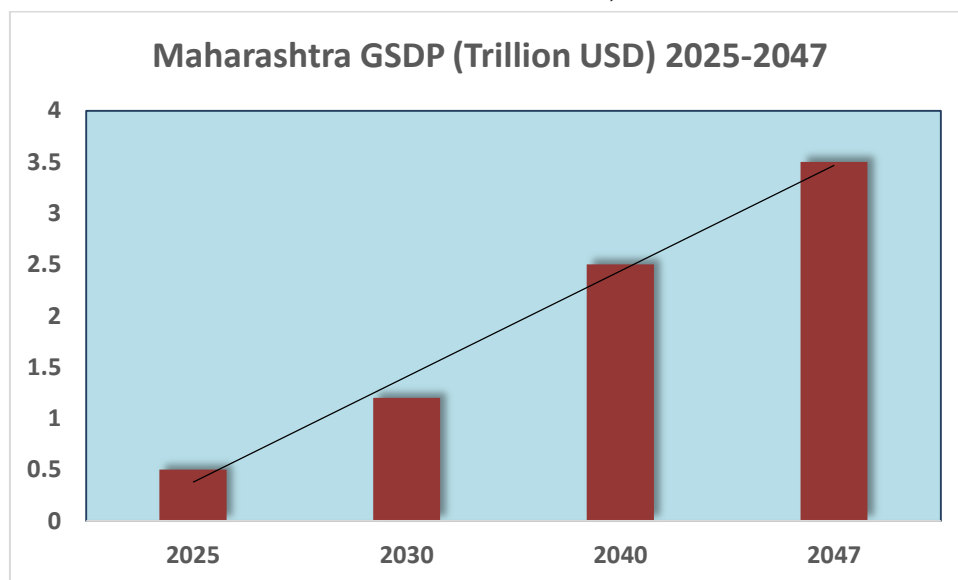
| Feature              | 2025 Outcome  | 2030 Target     | 2047 Vision            |
|----------------------|---------------|-----------------|------------------------|
| AI Education Tools   | 200+ schools  | 3,500 villages  | Statewide adoption     |
| Drone/AI Agriculture | 5,000 farmers | 50,000 farmers  | All rural districts    |
| e-Healthcare Access  | 1,500 people  | 80% coverage    | Universal availability |
| Water Quality IoT    | 300 villages  | All pilot sites | Statewide coverage     |

The project demonstrates improved crop yields, enhanced learning outcomes, better health access, and efficient governance through AI tools (Rao, 2025; Government of Maharashtra, 2025d).

**Economic Projections and Sectoral Impacts:** Maharashtra's Gross State Domestic Product (GSDP) is projected to increase significantly, driven by AI-led gains:

| Year | GSDP (Trillion USD) |
|------|---------------------|
| 2025 | 0.5                 |
| 2030 | 1.2                 |
| 2040 | 2.5                 |
| 2047 | 3.5                 |

Figure 1: Projected economic growth of Maharashtra's GSDP (2025-2047) (Patil, 2025; Joshi, 2025; Ramachandran, 2025)



This growth reflects productivity improvements, new job creation in AI sectors, enhanced educational outcomes, and innovation-driven entrepreneurship.

**Challenges and Ethical Considerations:**

Despite promising trajectories, multiple challenges persist:

- **Digital Divide:** Bridging rural-urban gaps in digital infrastructure and literacy is essential for equitable AI benefits (Government of Maharashtra, 2025a).
- **Human Capital:** Shortage of AI-trained professionals necessitates expanded educational programs and re-skilling (Joshi, 2025).
- **Ethical AI:** Transparent, accountable use of AI must safeguard privacy, prevent bias, and uphold digital rights (Ministry of Electronics and IT, 2024).
- **Resource Allocation:** Equitable distribution of funding and support across Maharashtra's regions is crucial.

Public-private partnerships and responsible policy enforcement are suggested to address these challenges effectively.

### Conclusion:

Maharashtra's integrated AI-driven developmental roadmap aligns with the ambitious *Viksit Maharashtra 2047* vision. Through strategic policies like MahaAgri-AI, cutting-edge institutional initiatives, and inclusive smart village projects, the state is poised to emerge as a leader in AI-fueled sustainable growth. Overcoming challenges related to skills, ethics, and infrastructure will be pivotal to maximize AI's transformative impact across governance, agriculture, education, and industry sectors.

The combined effect of government vision, industry partnership, and grassroots adoption will secure Maharashtra's position as a future-ready economy powered by AI innovation.

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