

## 1. How Artificial Intelligence can transform India

### Context:

- Over the last couple of years, Artificial Intelligence (AI) has changed from a technology with potential to an instrument of national importance across the world.
- The first demonstration of applications of AI has happened in the consumer space, mainly through targeted advertising by internet giants in the US and China. Recent report said that AI could contribute a whopping \$15.7 trillion to global GDP by 2030.

### What is Artificial Intelligence?

- Artificial Intelligence can be defined as a system's ability to learn and interpret external data via software/algorithms or machines/devices for problem solving by performing specific roles and tasks currently executed by humans.
- The recent advancement in information technology (like big data, improved computing, and storage capability and super-fast speed of data processing machines) and robotics has enabled AI to gain significant momentum in terms of its development and applications.

### Artificial Intelligence – Relevance for India:

- For India, the real power of AI lies in its transformative potential to address massive societal challenges that were traditionally considered to be beyond the purview of computing.
- For example, India stands to lose \$4.58 trillion before 2030 due to non-communicable diseases and mental health conditions.
- **Cardiovascular diseases** (accounting for \$2.17 trillion) and **mental health** conditions (accounting for \$1.03 trillion), will lead the way in economic loss.
- In rural India, approximately **70% of households still depend primarily on agriculture for their livelihood**, with agriculture having a shrinking share in GDP.
- In the transport sector, as per a Government of India report, road accidents led to 17 deaths on roads every hour in the year 2016, outlining the urgent need for smarter infrastructure.
- Traditionally such problems require building massive hard infrastructure, which needs significant capital expenditure.
- Today advanced research is shining a light towards a path to address such challenges through AI and computing to enable effective interventions that can grossly reduce capital expenditure.

### Transformational potential of AI:

- Non-communicable diseases like depression can be treated by achieving a **better understanding of the brain and mind using AI and computing.**
- With the rise of wearables, AI can allow **individuals much greater control over their health and empower them** to make better decisions about their well-being.
- In agriculture, AI can help us **handle the complexity and uncertainty associated with production, making better sense of problems** associated with epidemics, price volatility of raw materials and optimal usage of resources such as water, energy and fertilisers.
- It can empower farmers to deploy tailored interventions ranging from predictable crop planning to precision farming.
- In India's smart cities, AI algorithms in collision avoidance systems can give an approximate 1.5 seconds advance notice to drivers to avoid 93% of road accidents.
- AI provides a strategic instrument in the hand of government to address monumental challenges of unprecedented scale, and an opportunity for global leadership by creating foundational technologies and digital infrastructure.

### Conclusion:

- India is now embarking on a bold and ambitious journey to bring the power of AI to billions of citizens of this planet and meaningfully improve people's lives.
- All this, while upholding the foundational principles of individual privacy, security and user consent.
- The first step in this direction was taken when, as part of the Union Budget 2020, the finance minister set aside \$1.14 billion to invest in artificial intelligence (AI), quantum computing, machine learning (ML), and data analytics.
- It is important to mention that AI is not a silver bullet. Tackling these challenges requires a concerted, collaborative effort across all sectors of society—academia, the engineering community, government officials, policy-makers and other stakeholders.
- The Government of India announcing the 'Responsible AI for Social Empowerment (rAISE)' summit in Delhi on April.
- This event will bring together top leaders across sectors from around the world who share a common interest in making AI work for the betterment of humanity by utilising it to solve the biggest societal challenges.