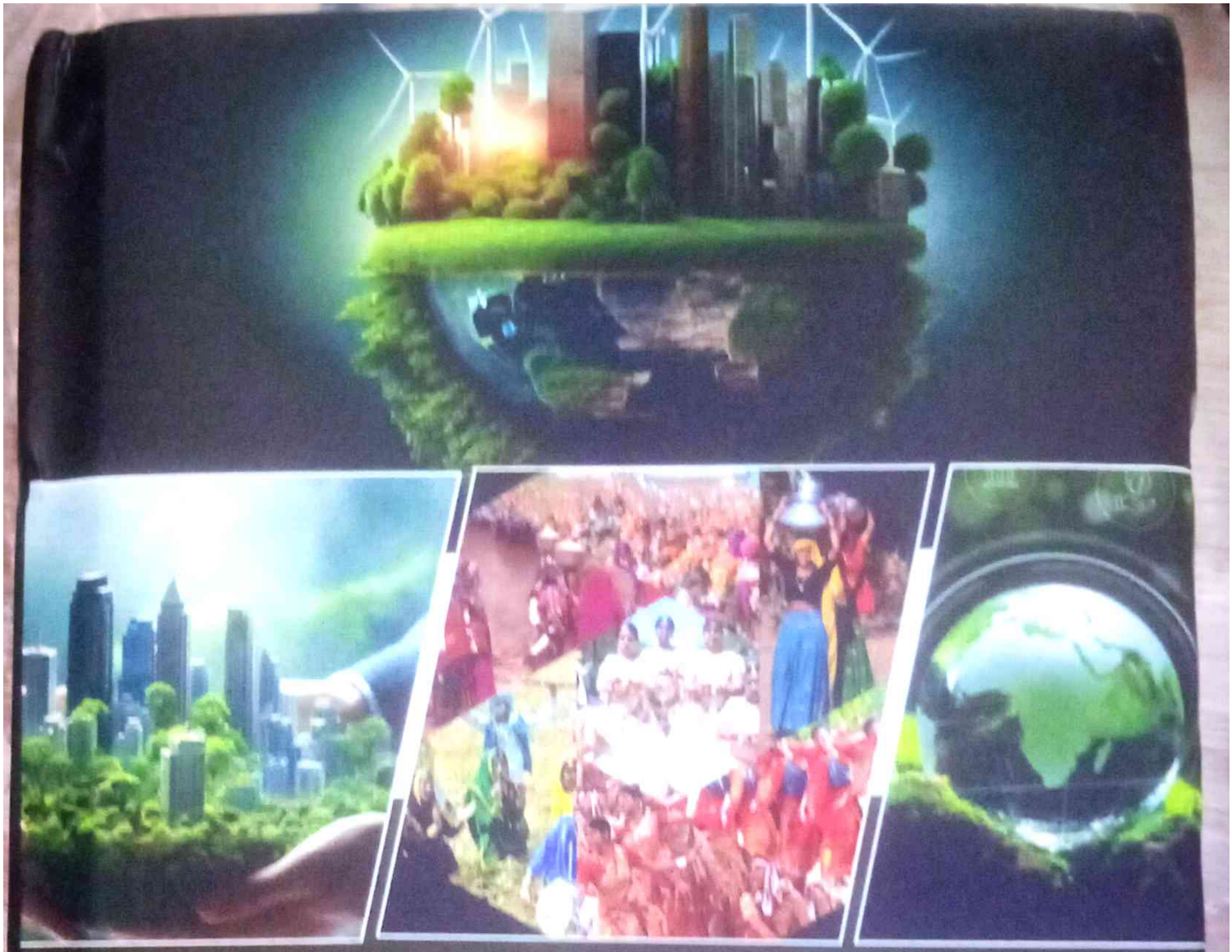

Towards Sustainable Transition

Holistic Development and Inclusive Transformation of Indian Society

Prof. Zeba Aqil | Dr. Khurshed Alam

Bharti Publications

Title: Towards Sustainable Transition: Holistic Development and Inclusive Transformation of Indian Society

Editors: Prof. (Dr.) Zeba Aqil, Dr. Khurshed Alam

First Published, 2025

ISBN: 978-93-48059-01-7

Published by :

Bharti Publications

4819/24, 2nd Floor, Mathur Lane

Ansari Road, Darya Ganj, New Delhi-110002

Phone: 011-23247537, 011-46172797

Mobile : +91-989-989-7381

E-mail : bhartipublications@gmail.com

info@bharatipublications.com

Website : www.bhartipublications.com

Preface

The journey towards a sustainable future is a shared endeavor, marked by the aspiration to create a harmonious balance between economic growth, environmental protection, and social equity. India, a nation defined by its diversity and dynamic evolution, stands at the cusp of profound transformation as it navigates the intricate pathways of development in a globalized world. This book, *Towards Sustainable Transition: Holistic Development and Inclusive Transformation of Indian Society*, seeks to unravel the multifaceted dimensions of this transformation, offering insights and perspectives to chart a progressive and inclusive course.

The need for sustainable transition has never been more urgent. India faces the twin challenges of rapid urbanization and industrialization alongside the imperative to preserve its ecological heritage and uphold social justice. This book examines these pressing concerns, exploring themes of environmental sustainability, social inclusion, economic resilience, and governance reforms. It aspires to provide a comprehensive framework for understanding the interconnectedness of these dimensions, emphasizing that true progress is achievable only when development is equitable, inclusive, and sustainable.

A central premise of this book is the recognition that India's diversity is both its strength and its challenge. From rural hinterlands to bustling metropolises, the narratives of development are as varied as the cultures they emerge from. This diversity necessitates a holistic approach that values local knowledge systems, prioritizes marginalized voices, and fosters community-driven solutions. The chapters herein present a blend of theoretical insights, empirical studies, and case analyses to highlight practical strategies for achieving sustainable development goals tailored to the Indian context.

In addressing these themes, the book also underscores the critical role of governance and policy frameworks. Transparent, accountable, and participatory governance is the cornerstone

Contents

of sustainable development. Innovative policy interventions, coupled with the active involvement of civil society and the private sector, are pivotal in bridging gaps and ensuring the fruits of development reach all segments of society.

This book is the culmination of collaborative efforts, drawing on the expertise and experiences of scholars, policymakers, and practitioners. It is my hope that this work will not only contribute to academic discourse but also serve as a guide for decision-makers and change agents striving to create a just and sustainable India.

As we embark on this exploration of India's sustainable transition, I express my heartfelt gratitude to all contributors, colleagues, and mentors who have enriched this endeavor with their knowledge and encouragement. I also extend my deepest thanks to readers, whose engagement and critique will ensure that this work remains a living document, reflective of the evolving realities and aspirations of our society.

Let us collectively work towards a future where development is synonymous with dignity, equity, and sustainability.

Prof. Zeba Aqil
Dr. Khurshed Alam

Contents

Chapter 20

Artificial Intelligence: Boon or Curse for Humanity

Dr. Shoaib Hasan*

Introduction

It's simple to believe that artificial intelligence has no bearing on our daily lives given the buzz surrounding it and the examples it creates, such as self-driving cars and robots. In actuality, artificial intelligence is present in most of us on a nearly daily basis in one form or another. Artificial Intelligence has quickly become a part of our daily lives, from checking your Smartphone when you wake up to watching another movie that Netflix has recommended. The global AI market is expected to expand by up to 54% annually, per a Statista study. But what precisely is artificial intelligence? Will it eventually be beneficial to humanity? Artificial intelligence has several benefits and drawbacks, which we'll go over in this paper. Before delving into the advantages and disadvantages of AI, let us first review its definition.

Artificial intelligence is a branch of computer science that allows us to create intelligent machines that can think and behave like humans and make decisions based on logical programs stored in memory. The term artificial intelligence is made up of two words: artificial and intelligence. Artificial means manmade, and intelligence means the ability to think. The field of artificial intelligence studies how to change robots to solve complicated issues in a way that is similar to that of a person. Similarly,

* Assistant Professor, Psychology Department of Humanities & Social Science, Integral Univetrsity,Lucknow, U.P.

it is the ability of a robot operated by a computer or digital computer to carry out tasks that are typically performed by intelligent entities. The endeavor of creating systems with human-like cognitive functions—like reasoning, meaning-finding, generalization, and experience-based learning—is commonly associated with this phrase. Digital computers have come a long way since they were first developed in the 1940s. They are now capable of performing extremely complicated jobs with remarkable proficiency, including playing chess or finding proofs for mathematical theorems. Computers are still not able to match human adaptability across broader fields or in activities requiring a great deal of common knowledge, despite ongoing advancements in processing speed and memory capacity. However, in certain limited applications, such as medical diagnosis, computer search engines, voice or handwriting recognition, and chat bots, artificial intelligence has reached the performance levels of human experts and professionals. So, artificial intelligence in this limited sense is present in a wide range of fields. In essence, artificial intelligence (AI) is the ability of a machine to carry out a task that would normally need human intelligence. Artificial intelligence is present in many common consumer products, such Siri, Alexa, and Google. It is used when you use a banking app to deposit a check or when you send a text message by speaking to it. However, AI goes beyond these commonplace consumer goods to encompass breakthroughs like facial recognition, computer chips embedded in the brain, and generative AI that creates content.

The fundamental idea of AI is data, even though the details vary amongst various methodologies. Large data sets help artificial intelligence (AI) systems learn and grow, allowing them to see patterns and connections that people might overlook. Algorithms, or collections of rules or instructions, are frequently used in this learning process to direct the AI's analysis and decision-making. A common subset of artificial intelligence called machine learning uses algorithms that are trained on abeled or unlabeled data in order to classify and forecast data. A further specialization called deep learning processes data by rocessing it through multiple-layered artificial neural networks hat simulate the composition and operations of the human rain. AI systems get more and more skilled at completing articular tasks through constant learning and adaptation, from nguage translation to picture recognition and beyond.

Types of Artificial intelligence

Various organizational structures for artificial intelligence can be achieved based on the stages of development or tasks carried out. For example, it is generally accepted that AI development occurs in four stages.

1. **Reactive devices:** AI with limited capabilities that only responds to certain inputs in accordance with preprogrammed rules. lacks memory, making it unable to learn from new information. A reactive machine is IBM's Deep Blue, which defeated chess champion Garry Kasparov in 1997.
2. **Limited memory:** The majority of AI in use today is thought to have limited memory. By being trained with fresh data over time—usually using an artificial neural network or another training model—it can use memory to get better over time. A subtype of machine learning known as deep learning is regarded as artificial intelligence with limited memory.
3. Theory of mind: Although there isn't a theory of mind AI yet, studies on its potential are still being conducted. It talks about artificial intelligence (AI) that can mimic the human mind and make decisions much like a human would, including remembering and identifying emotions and responding appropriately in social settings.
4. **Self-awareness:** A mental leap beyond theory Artificial Intelligence, consciousness Artificial Intelligence (AI) refers to a fantastical machine with human-like mental and emotional capacities and self-awareness. Similar to theory of mind AI, self-aware AI is still unrealized.

What the computer is capable of is a more helpful criterion for broadly classifying artificial intelligence kinds. As a result of its programming and training, all of the current artificial intelligence is regarded as artificial "narrow" intelligence, capable of just a limited range of tasks. For example, natural language processing cannot be carried out by an AI algorithm designed for object classification. Virtual assistants, predictive analytics, and Google Search are examples of narrow artificial intelligence. The capacity of a machine to "sense, think, and act" in the same way as a human is known as artificial general intelligence, or AGI. As of right now, AGI does not exist. Artificial super intelligence (ASI) would be the next stage, where a machine could perform tasks that a human could not in any way.

Advantage of Artificial Intelligence

Some benefits of Artificial Intelligence include the following:

- **Proficient in tasks involving fine details:** AI works well at tasks that require it to find links and subtle patterns in data that humans might miss. In the field of oncology, for instance, AI systems have proven to be highly accurate in identifying early-stage malignancies, such as melanoma and breast cancer, by indicating suspicious spots that require additional examination by medical specialists.
- **No Risks:** The ability for humans to avoid numerous hazards by delegating tasks to AI robots is another significant advantage of AI. Machines with metal bodies are resilient and can withstand hostile environments, whether they are used for bomb defusing, space travel, or exploring the deepest regions of oceans. They also don't tire out as quickly and can deliver accurate work with more responsibility.
- **Productivity in jobs involving a lot of data:** Data processing times are significantly decreased by AI systems and automation tools. This is especially helpful for industries like finance, insurance, and healthcare where regular data entry and analysis are necessary, along with data-driven decision-making. Predictive AI models, for instance, are used in banking and finance to evaluate investment risk and forecast market trends by processing enormous amounts of data.
- **Stability in the outcomes:** Intelligent artificial intelligence (AI) and machine learning are used by today's analytics systems to handle large volumes of data consistently while maintaining the capacity to learn from fresh data. In language translation and legal document assessment, for instance, AI technologies have consistently produced dependable results.
- **Productivity increases and time savings:** Not only can robotics and AI automate processes, but they can also increase productivity and safety. For instance, in manufacturing, AI-powered robots are being utilized more and more to carry out repetitive or dangerous jobs as part of warehouse automation, lowering the risk to human workers and raising output levels overall.
- **Individualization and customization:** Digital platform personalization and content delivery are two ways AI systems can improve user experience. To boost consumer satisfaction and engagement, artificial intelligence (AI) algorithms examine user activity on e-commerce platforms and suggest

products that are tailored to the individual's tastes.

- **The availability of services 24/7:** AI algorithms do not require breaks or sleep. For instance, even with large interaction volumes, AI-powered virtual assistants can offer continuous, round-the-clock customer support, speeding up response times and cutting expenses.
- **Ability to scale:** Scaling to accommodate increasing volumes of work and data is possible for AI systems. Because of this, AI is ideally suited for applications like corporate analytics and internet search, where workloads and data quantities can expand rapidly.
- **Quickened development and research:** The pace of Research and Development in industries like materials science and pharmaceuticals can be accelerated by artificial intelligence. Research and development breakthroughs can be hastened by having the capacity to evaluate large amounts of data rapidly. AI has been applied, for example, to measure the human genome and to predict the efficacy of proposed new medicinal therapies. Researchers can find new treatments, materials, or molecules more quickly than using traditional approaches thanks to AI models, which quickly simulate and analyze a wide range of scenarios.
- **Cut down on human error:** With automation and algorithms that consistently follow the same procedures, artificial intelligence (AI) can minimize human errors in a variety of jobs, including data processing, analytics, manufacturing assembly, and other tasks.
- **Ecological preservation and durability:** Utilizing artificial intelligence and machine learning, conservation activities are being managed, future weather occurrences are being forecast, and environmental changes are being tracked. To monitor wildfire risk, pollution levels, and populations of endangered species, for example, machine learning algorithms can interpret sensor data and satellite pictures.
- **Process improvement:** In a variety of industries, artificial intelligence is utilized to automate and simplify difficult procedures. Within the industrial industry, AI models are able to detect inefficiencies and anticipate bottlenecks in workflows. Similarly, in the energy sector, they can forecast demand for electricity and simultaneously allocate supplies.
- **Mechanization:** AI is capable of working independently and autonomously from a human team or automating operations