Perspectives Of Indian Economy Through Agricultural Digitalization

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ABSTRACT:
The Indians rely on agriculture as their primary source of income. The GDP of the nation's farm industry is about less from the total. Although the farm sector is vital to the Indian economy, it is constantly declining while the service sector is, on the whole, doing better. Implementation of technology aimed at improving agricultural operations. In western nations, technology adoption is extremely strong in areas like remote sensors, AI, and big data. The use of technology in cultivation in India, however, is still at a low level. The industry is simultaneously facing its own challenges, such as those linked to farmers' knowledge levels, land ownership, and the complexity of technology. Technology adoption is still in its infancy, particularly in India, and hasn't really taken off yet. In this article, perspectives of Indian economy through agricultural digitalization have been discussed.

Keywords: Indian Economy, Agricultural, Digitalization , Economic Growth.

INTRODUCTION:
India has the largest net cropped area in the world, followed by the US and China. India places second globally in agricultural output; it employs more than 50% of the labour force, and the sector contributed between 17% and 18% of GDP. With India's overall economic growth, agriculture's economic contribution to GDP is gradually declining. [1] The need for industrialization and intensification in the agriculture sector has grown due to the rising food demand in terms of both quantity and quality. [2] The Internet of Things (IoT) is a very hopeful technology that is allowing for the development of numerous creative solutions to modernize the agricultural industry. Various areas of agriculture are being addressed by research organisations and scientific teams using IoT solutions and products [3]. IOT sensors have the ability to provide information about agricultural fields and then take action based on user input, making smart agriculture an emerging idea. [4] The need of the hour is for an automated, smart agriculture system that uses less time and resources. When the

circumstances are optimal, such as with adequate lighting or lightning, using Internet of Things technology to measure soil moisture and water levels in fields works well. [5] Monitoring the crop field system with the aid of sensors (light, humidity, temperature, soil wetness, etc.) and automating the irrigation system have both produced positive results in IoT-based smart farming. Farmers can now keep an eye on agricultural conditions from anywhere. Smart farming that is IoT-based is significantly more effective than traditional farming [6].

PERSPECTIVES OF AGRICULTURAL DIGITALIZATION:

The Internet of Things is a new technology that is being used in a variety of environmental fields, including smart cities, smart farming, smart agriculture, and household automation. IoTs have a big part to play in transforming traditional farmland into smart agriculture. Since IOT sensor devices are very capable of providing information about agricultural fields, smart agriculture is an emerging idea [7]. The goal of Internet of Things (IoT) technology use is to assist agriculturalists in reducing waste and increasing productivity. The use of information technology (IT) and components like sensors, self-driving cars, automatic hardware, automated buildings, and IoT-enabled agriculture has made it possible to obtain the technological solution for manufacturing, increase yield, and increase efficiency [8]. The efficient productivity in agriculture has been demonstrated by a study on sensor-cloud-based precision agriculture for intelligent water management. Even though the development of IoTs has revealed a new field of cutting-edge study, it is still in its infancy and requires extensive experimentation to produce agricultural applications that are widely used [9]. IoT-based agriculture is a method to increase agricultural product quality and production efficiency. In addition to the aforementioned benefits, the application of precision agriculture enables supply and demand forecasting, real-time management, and quality maintenance throughout the complete life cycle of agricultural products. [10].

Farmers can recreate the ideal conditions and improve the nutritional worth of the products by using connected devices. [11] By utilizing tools like crop management, cattle tracking and management, precision farming, agricultural drones, predictive analysis, and end-to-end farm management systems, the use of IoT in smart farming is transforming the agricultural industry. Before investing in clever farming, there are some issues that need to be investigated. [12] The use of IoTs and technology-driven agricultural management affirms that consistent farm knowledge helps farmers make the best choices possible and can lead to solutions that are specifically tailored to each farm. [13]. The agricultural workforce's changing organisational structure is another impediment. In addition, farming labour has decreased in the majority of nations. IoT

solutions are centred on making the best use of resources and assisting farmers in closing the supply-demand gap by guaranteeing high yields, profitability, and environmental protection. [14] Smart farming architecture improves crop productivity in the field while also helping to reduce costs and increase production. Smart farming architecture to improve the productivity of crops in the field helps reduce costs and increase production at the same time. [15]

However, the application of this technology presents special difficulties in India, particularly for farmers who have modest landholdings and live in rural areas with poor infrastructure and internet access, which render advanced monitoring systems useless. IoT equipment's high price and intricacy deter farmers from low-income backgrounds. As a result, government programmes that support IoT application planning and adoption can aid in the adoption of such smart agricultural technologies and support their adoption [16]. The rapid development of Internet-of-Things (IoT)-based technologies has completely transformed almost every industry, including smart agriculture, which has switched from statistical to quantitative approaches, upended traditional agricultural practises, and brought about a number of new opportunities and challenges [17]. Even after using IoT systems for smart agriculture management, crop residue is still a significant environmental problem that requires proper handling. IoT-based systems combined with biotechnology can help obtain the information needed to resolve the crop residue problem and provide a solution to decompose the crop residue in fields that will make the land fertile and reduce pollution [18]. The relationship between digital agriculture and farm diversity, new economic, business, and institutional arrangements is reflected in themes like digital agriculture socio-cyber-physical-ecological systems conceptualizations, digital agriculture policy processes, digitally enabled agricultural transition pathways, and global geography of digital agriculture development. [19]

ROLE OF AGRICULTURE IN INDIAN ECONOMY:
The majority of people in India worked in agriculture. The agricultural industry plays a significant role in the economy.
The agricultural industry plays the following roles in the Indian economy:
1. Contribution to the GDP:
Since the country's declaration of independence, the agriculture industry has been the largest contributor to its GDP.
2. Sector with the most workers:
More than half of the country's workforce is employed in India's farm industry, making it the industry with the most workers in the entire world.
3. Food Source:

The second-most populous nation on the globe is India. As a result, both agriculture and a reduction in the economy's reliance on the industry are necessary.

4. The sectoral relationship between agriculture and industry: The majority of the nation's industries directly harvest this raw material from the agricultural areas to meet the ongoing demand for raw materials for product manufacturing.

5. Relevance to Business:

Indian agriculture is crucial for both domestic and international trade and the industrial industry. The country's total exports are made up of 20% of textile products like jute and cotton and 50% of culinary agro-products like tea, coffee, sugar, cashew nuts, spices, and others.

6. Contribution to Tax Revenue for the Government: The primary source of revenue for the federal and local governments is agriculture. The country's administration receives significant funding from increasing land revenue.

7. Planning for the economy and agriculture:

The future of Indian planning is also highly dependent on the agricultural industry. A successful harvest always gives the nation's anticipated economic development momentum by enhancing the business environment for the transportation system, manufacturing industries, internal trade, and other areas.

CONCLUSION:

Agro-economies like that of India heavily rely on the farming industry. The agricultural sector not only helps the Indian economy but also the industrial sector as well as import and export commerce internationally. Rapid technological development and growing exposure to digitization have resulted in a more advanced method of contemporary farming. As a result, agricultural practises have changed and are still changing. The introduction, invention, and adoption of technology like artificial intelligence (AI), big data, the use of remote sensors, and domestic farming have all significantly changed the agriculture sector. In western nations, the level of technology adoption in the agricultural industry is very high. The same is not particularly important in the Indian context, despite rising food product demand due to population growth. [20] As a result, there is a glaring gap between usage of digital technology and expectations. This merits more thorough research into the requirements, limitations, and appropriate application of technology in the framework of Indian agriculture. The Indian government has also developed a number of programmes to promote adaptation.

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