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MODERN AND SUSTAINABLE AGRICULTURE IN INDIA

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Abstract: In this computer age, it is very important to acquire knowledge about electronic devices. Electronic devices such as smart phones, computers, TV, etc., are changing the way a person thinks, lives and works. Today the use of electronic devices is increasing in all fields. All the work is being done online through mobiles and computers. Using these tools, man is collecting maximum information and using it for the development of himself and the country. Due to the increasing demand for electronic devices, new companies are entering the market and making various products available to the customers. Currently, the use of this modern technology in agriculture has increased. Along with mobile and computer technology, drone technology is also being used in agriculture and agriculture related fields. Digital India is an ambitious plan of the Government of India. Under this scheme, the objective is to reach out to the citizens by creating a transparent and responsive administration and to promote digital literacy in India. The agriculture sector has been given an important place in this scheme. Such technology has become necessary to enable agriculture to meet the challenges of climate change. Farmers need accurate information and guidance on climate, modern cropping practices while doing technology-based farming. Agriculture in India should be made modern, digital and sustainable using such new technologies.

Keywords: - Modern Agriculture, Digital India, Sustainable Agriculture.

Preface:

In the process of rapid economic reforms, India's gross national product has grown by about 8 percent in the last few years. On the one hand, agribusiness is very important for poverty alleviation and food security, on the other hand, about 41 percent of the total manpower in the country is engaged in agribusiness, but agriculture accounts for only 15 percent of GDP. Lack of knowledge of agricultural inputs as well as lack of market connectivity are some of the important issues facing farmers today. Also, the gap between farmers and consumers is wide and there are many stakeholders. As a result, farmers get very little benefit. In addition, lack of infrastructure and market (Agricultural Produce Market Committees) system, farmers do not get good rates and suffer huge losses after the harvest.

Agricultural development also affects the environment. India emits 2,299 million tonnes of carbon dioxide, of which agriculture and livestock account for one-fifth. The use and production of agricultural inputs (water, fertilizers and pesticides), agricultural machinery, soil degradation, residue management and irrigation result in greenhouse gas emissions from agriculture in the early stages of production. Frequent droughts, heat waves and erratic rainfall have always affected the agricultural sector. Potential changes in temperature, precipitation, and the accumulation of carbon dioxide affect crop growth. Seasonal changes in temperature in India may increase further. As a result, it will be warmer in winter than in summer.

Between 1891 and 2009, there were 23 major droughts in India and their frequency is increasing. This severe climate poses a risk of potential crop failure. Therefore, while the rapidly growing population, the strain of economic and industrial development is on the Indian environment and social system, this second pressure will also add to it. For this, no one wants the policy reforms initiated by the government to restructure the Agri-industry. The Central Government passed three laws for the welfare of farmers. These include the Farmers' Products Trade and Commerce (Sales and Facilities) Bill 2020. The bill will break the monopoly of the Agricultural Produce Market Committees, which buy farmers' produce at a lower price and sell it at a higher price. The bill will also remove the hurdle of the buyer being locally registered, which will also boost inter-state trade. The bill has upset a group of farmers. They have continued to protest on the border of the country's capital against the three agricultural bills, facing water cannons, batons and tear gas. Now the Supreme Court has stayed the implementation of the Agriculture Act. But the agricultural laws of the 1950s and 1960s, when there was scarcity and political socialism, need to be reformed.

It is right to oppose India's existing agricultural laws, but most of the agitating farmers are intensive farmers in terms of food grains. These farmers produce large quantities of paddy and wheat using electricity, fertilizers and pesticides subsidized by the government and using unlimited water. The government spends 25 billion a year on food security in the name of food security. Such policies are not feasible. On the other hand, many are using ancient farming techniques. They do not know about the use of fertilizers, water and pesticides and do not have proper management. As a result, it adversely affects natural resources and increases carbon emissions. In the face of discussion and discontent on agricultural reform, the issue of the environment, however, is missing at the policy level. In order to have a digital green economy in India, not only the resilience of farmers but

also the impact of excess rainfall, heat, insects, hailstorms, floods, droughts and seawater and stress from endangering the ecological sustainability, which is driving the prevailing traditional farming practices happens. But at present, many agricultural technologies have proved to be beneficial and can also solve the environmental problem.

Objectives:

1. To study the changes taking place in the agricultural sector in India.
2. To know the status of modern and sustainable agriculture in India.

The research paper is structured in a descriptive, historical and practical way. The research paper is structured using published and unpublished secondary tools such as reference books, research papers, newspapers and the Internet.

Modern And Sustainable Agriculture in India:

Farmers have embraced the transition in the age of information technology. Farmers are using various mechanical equipment's required for agriculture, but they lack various information like impact of climate change, pest and disease control on crops, different varieties of crops, crop insurance scheme, market prices etc., farmers need guidance to increase production; With this in view, the government's agriculture department has created 18 mobile apps related to agriculture. This step taken by the Department of Agriculture to get information through mobile app is becoming important for the farmers considering the increasing mobile services in rural areas as well as the increasing use of smart phones and internet facilities available by mobile companies. Today, the use of mobile app to get information related to agriculture from farmers has increased to a large extent, and through such a mobile app developed at present, young farmers are experimenting with new products related to agriculture in consultation with the Department of Agriculture. The biggest adverse effect on the agricultural sector is climate change. The mobile app is also proving to be beneficial for farmers to overcome it. Farmers are getting weather and based agriculture, horticulture and animal husbandry advice through mobile app. The Department of Agriculture's mobile app makes it easier for farmers to plan and save crops.

The Department of Agriculture has created various mobile apps to provide information related to agriculture. These include Maharain, Crop Clinic, Krishi Mitra, M. Kisan Bharat, Kisan Suvidha, Pusa Krishi, Crop Insurance, Digital Mandi Bharat, Agri-Market, Animal Nutrition, Cotton, Integrated Pest Management, Turmeric Cultivation, Crop Nutrition, Citrus Plantation, Shekru, IFFCO Kisan etc. Through the mobile app of the Department of Agriculture, measures on pests and diseases of five crops viz., Soybean, Cotton, Rice, Tur and Gram at present, general and rain level at Mandal, Taluka, District level, Fertilizers and seeds in the taluka, sale and knowledge of them Farmers are getting information on various topics including agricultural inputs traders, market prices, crop protection, information on latest technology, prices of agricultural commodities, animal feed guidance, cotton cultivation technology, information on fruit cultivation, various agricultural schemes and training. The Agri Market app has also been developed to keep every farmer up to date with the prices of their crops and to sell them at the right time. Through this app, you can get all the information related to the price of crops in the market within 50 kilometres from the location of your own device. The app is currently proving to be hugely popular among farmers as it avoids the resulting losses.

Soil, fertilizer and water are the most important components for crop production. Proper use of these tools is essential. For this it is necessary to adopt fertigation technique. The fertilization technique allows water and fertilizer to be applied as per the requirement of the crop. From this, along with the effectiveness of water, the effectiveness of fertilizers can also be achieved. It also helps in maintaining the health of the soil. Indian culture and traditions have been closely associated with nature since ancient times. All the festivals celebrated in India are indicative of this. Agriculture, which is the essence of life on earth, also depends on the power of nature. Agriculture is closely related to sunlight, water, land and wind. Water is a rich force of nature. It will be enough for everyone only if water is used economically in the future. More than 70% of the available freshwater resources in India are used for agriculture. Therefore, it is necessary to manage the water used for crops.

Considering the present condition and future importance of soil, the government is also making efforts for soil conservation through various schemes. One such step is the 'Soil Health Card' launched by the Central Government from 2014-15 so that farmers can identify their land. Appropriate fertilizers can be planned accordingly, balanced use of fertilizers will be possible. Suitable crops can be selected according to the capacity of the soil. The use of organic fertilizers will increase and there will be scope for increasing productivity. All this will help in maintaining the health of the soil and food security. The sun is also an important part of agricultural culture. We have known the importance of the sun in agriculture since ancient times. The use of energy has made our agriculture technologically and economically advanced. This use of energy will continue to be important in the future. However, the energy we currently use, e.g. The energy from coal, petroleum products, is depleted. Therefore, the use of solar energy as a sustainable source of energy is becoming important in agriculture. The Government of India as well as the State Governments are introducing new schemes for power generation and schemes like 'Solar Park' are being implemented successfully. Many farmers today are seen cultivating solar energy. In the future, if solar farming becomes the norm, there is nothing wrong with it. Farmers are coming forward to set up 'farm ponds' to store water. Then they will definitely come forward to build a solar park to generate solar energy. Creating such small units can be an important step in promoting solar energy. Your health depends on your diet and you get it from agriculture. Therefore, soil and organic inputs need to be used for crop production for healthy food production.

Today, the heavy use of chemicals in the agricultural sector and its health effects are not hidden. There is a need to switch to organic farming. Organic farming says that you can see farming done without the use of chemical fertilizers and chemical pesticides. However, 'hyper-organic' or 'hyper-chemical' farming will be both dangerous. Therefore, it is necessary to adopt integrated methods. Integrated methods are farming that is done in close proximity to nature with a balance between the two methods. When using chemical pesticides, farmers should be informed about the post-harvest index, i.e., how long the crop remains toxic. If its information reaches the farmers then there will be self-regulation on the uses. Similarly, organic farming should be done with some objectives in mind. There are some principles we should follow while doing organic farming. The key is to have love and affection for nature. Nature has given us all this, so it is important to instill in everyone the feeling that we also have to give something to nature. India is one of the top three countries in terms of agricultural production. However, due to lack of proper storage, 35.40 per cent of the agricultural produce produced annually is lost. Our nation, which is rich in agricultural products, has a lot of scope in processing industry, storage. Because we process only three to four percent of the agricultural

produce. Even if 15.20 per cent of the produce is processed, it will raise the living standards of the farmers. We want to brand this stock of agricultural products that will be produced in the future and take it to the world market.

Today, many agritech companies in India are standing up to get a good price for their produce. In order to increase farmers' profits, many companies are working to reshape this value chain by eliminating many intermediaries from farmers to consumers. Many companies are using technologies such as satellites and drones to measure farm geography, crop health and yield.

India is moving towards digitalisation. Digitization is taking place in all sectors, so why should the agricultural sector lag behind? Therefore, to bring about a digital revolution in the field of agriculture, the Union Ministry of Agriculture has entered into an agreement with the Agricultural Technology Forum Agri bazar. Agriculture Minister Narendra Singh Tomar, while signing the agreement, expressed confidence that the digital Agri market would definitely help in creating a better platform for farmers, transforming the agricultural sector. In the initial phase, pilot projects will be launched in three states to promote digital agriculture in rural India. This is an important step in the agricultural sector to fulfill India's digital dream and move towards it, which will definitely increase the income of farmers. Is. The project is being implemented on a pilot basis in three states of Rajasthan, Madhya Pradesh and Uttar Pradesh. This is an attempt by the central government to increase the development of agricultural technology by signing an agreement with Agri bazar. This will definitely transform the agriculture sector. A few days back, Union Agriculture Minister Narendra Singh Tomar had announced to provide Kisan Unicode to the farmers. There are also digital platforms like DeHaat in Patna that have put competitive pressure on brokers and made direct markets available to farmers. Digital platforms have become increasingly important during the lockdown period, when traditional markets were jammed (e.g., in the lockdown, grain trucks were blocked by enthusiastic police officers, and grain supplies from farmers to urban areas were disrupted). Such companies greatly benefit farmers in the value chain, increasing their ability to withstand the damage caused by the environment.

Indian companies are also making progress in freshwater fish production. For example, start-up companies in Chennai like Aquaconnect use machine learning and artificial intelligence to inform farmers by analysing food and growth patterns. Also gives accurate advice on disease management. Aquaconnect is helping farmers reduce carbon emissions from pollution by increasing the use of resources (materials, seeds, water), degrading water quality and feeding, as well as increasing the conversion of prawn organisms.

Despite the insecurity of the environment, loans and crop insurance are not readily available to farmers. In this case, start-ups such as Sat sure and Mantle Labs obtain information on soil health as well as weather patterns to accurately assess farm hazards. Real information through satellites and drones can help to check the extent of damage during crop loss. It is very important to make loans and crop insurance easily available to small farmers to increase their ability to bear the losses caused by climate change.

Agriculture is part of the problem and solution to climate change and sustainability. Agritech innovation is also the most important factor in realizing the concept of digital green economy in India. Agritech start up create a new economic balance for farmers. They also ensure that farmers are well-prepared financially to cope with climate change. However, the real challenge is the time and effort required to bring this technology to remote areas. But the good news is that with 1.9 billion in capital investment by 2019, it is clear that interest in investing in agriculture has increased. Expanding Agritech Solutions requires a concerted effort by the government, planners and accelerators. Even at the policy level, agritech companies need greater cooperation. Some states have developed policies for start-ups. But there is still no specific policy for agritech companies, as little is known about the relationship between agriculture and climate change. To adopt such innovations, the government needs to provide start-up infrastructure to farmers through the Krishi Vigyan Kendra.

Conclusion:

Modern and sustainable agriculture in India has had a positive impact on the agricultural sector. Proper direction to Indian agriculture Promoting productivity growth, imparting market knowledge to farmers through digital literacy. Technology provides accurate information about land, water, weather, seeds. As a result, a large number of farmers are being helped. The 'Digital India' scheme helps different farmers to increase their profits by making them digitally literate through various apps. Farmers in rural areas can also make maximum profit by selling their produce abroad as all the technological information required for overall development is available in timely and low-cost data. Overall, large-scale positive changes in agriculture are seen to be contributing to the expansion of sustainable agriculture.

References:

[1] https://www.orfonline.org/marathi/paving-way-digital-green-economy-indian-agriculture-81013/
Date: 09/10/2021, Time: 12:53 PM.
[2] Maharashtra Times, editorial Article, Bachchav Swapnil, “The share of modern agriculture” 1 April. 2017. 3
[3] https://marathi.krishijagran.com/farm-mechanization/these-five-technologies-useful-for farmers/
[4] https://mieshetkari.com/agriculture-will-be-transformed-with-the-help-of-union-ministry-of-agriculture-and-agribazar-agriculture-will-get-a-new-impetus /