



HEALTH HIGHWAY



The future of Indian agriculture is both challenging and full of opportunities. The challenges of small holdings, poor infrastructure, low productivity and low returns on investment can be addressed through the use of technology, innovation, and sustainable farming practices

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Agriculture in India has always been a significant part of the country's economy and culture. With more than half of the population dependent on agriculture, it has been the backbone of the country's food security. However, the contribution of agriculture in the gross domestic product (GDP) has reduced to less than 20 per cent, while the contribution of other sectors has increased at a faster rate. Nonetheless, agricultural production has grown, making India self-sufficient and a net exporter of agriculture and allied products.

The Demand for Food

As per the estimates of Indian Council for Agricultural Research (ICAR), demand for food grain would increase to 345 million tonnes by 2030. This increase in demand is due to various reasons like increasing population, increasing average income, and globalization effects in India, which will increase the demand for quantity, quality, and nutritious food, and variety of food. Therefore, the pressure on decreasing available cultivable land to produce more quantity, variety, and quality of food will keep on increasing.

Challenges in Indian Agriculture

In spite of having large arable land with 15 agro-climatic zones as defined by ICAR, having almost all types of weather conditions, soil types, and capable of growing a variety of crops, the average productivity of many crops in India is quite low. The country's population in the next decade is expected to become the largest in the world, and providing food for them will be a prime issue. Majority of the farmers are still facing problems of poor production and/or poor returns. Major constraints in Indian agriculture are farming for subsistence, low access to credit, less use of technology, mechanization, and poor productivity, very less value addition, poor infrastructure for farming making more dependence on weather, marketing and supply chain suitable for high-value crops.

The Future of Indian Agriculture

The future of agriculture is a very important question for the planners and all other stakeholders. Government and other organizations are trying to address the key challenges of agriculture in India, including small holdings of farmers, primary and secondary processing, supply chain, infrastructure supporting the efficient use of resources and marketing, reducing intermediaries in the market. There is a need to work on cost-effective technologies with environmental protection and on conserving our natural resources.

The reforms towards privatization, liberalization, and globalization affected the inputs market at a faster pace. Agricultural marketing reforms after 2003 made changes in marketing of agricultural outputs by permitting private investment in developing markets, contract farming, and futures trading, etc. These amendments in marketing acts have brought about some changes but the rate is less.

Along with this, the information technology revolution in India, new technologies in agriculture, private investments especially on

R&D, government efforts to rejuvenate the cooperative movement to address the problems of small holdings and small produce, etc are changing the face of agriculture in India.

Many startups in agriculture by highly educated young ones show that they are able to understand the high potential of putting money and efforts in this sector. Cumulative effects of technology over the next decade will change the face of agriculture.

Key Trends Expected

Changing demand due to increase in incomes, globalisation and health consciousness is affecting and going to affect more the production in future. Demand for fruits and vegetables, dairy products, fish, and meat is going to increase in future.

Researches, technology improvements, protected cultivation of high value greens and other vegetables will be more. There will be more demand for processed and affordable quality products.

More competition will be there among private companies giving innovative products, better seeds, fertilizers, plant protection chemicals, customised farm machinery and feed for animals etc in cost-effective ways at competitive prices.

The use of precision agriculture will increase, allowing farmers to make informed decisions regarding the use of inputs such as water, fertilizers, and pesticides, leading to more efficient use of resources and higher yields.

Climate-smart agriculture will become more important as climate change continues to impact agricultural production. This will include the use of drought-resistant crops, water harvesting and conservation, and the development of climate-resilient farming practices.

The role of women in agriculture will continue to grow, with more women entering the sector as farmers, entrepreneurs, and researchers.

Sustainable farming practices, such as organic farming, will become more popular as consumers demand products that are environmentally friendly and free from harmful chemicals.

Finally, there will be a shift towards a more integrated approach to agriculture, with a focus on the entire value chain, from production to marketing and distribution. This will require collaboration between farmers, researchers, policymakers, and other stakeholders.

The Road Ahead

The future of Indian agriculture is both challenging and full of opportunities. The challenges of small holdings, poor infrastructure, low productivity, and low returns on investment can be addressed through the use of technology, innovation, and sustainable farming practices.

The government, private companies, startups, and farmers themselves all have a role to play in shaping the future of agriculture in India. By working together, we can create a sustainable and profitable agricultural sector that meets the growing demand for quality and nutritious food, while also protecting our natural resources and promoting economic growth.