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Future of Indian Agriculture

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SUMMARY

Future of agriculture is a very important question for the planners and all other stakeholders. Agriculture is the dominant sector of our economy & contributes in various ways. Agriculture in India is a livelihood for a majority of the population and it holds a lot of potential in itself. Technology and infrastructure in the future are going to bring considerable changes to the operating context of tomorrow's consumers and farmers. Future of agriculture is a very important question for the planners and all other stakeholders. Government and other organisations 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.

INTRODUCTION

Agriculture in India is livelihood for a majority of the population and can never be underestimated. Although its contribution in the gross domestic product (GDP) has reduced to less than 20 per cent and contribution of other sectors increased at a faster rate, agricultural production has grown. This has made us self-sufficient and taken us from being a begging bowl for food after independence to a net exporter of agriculture and allied products. Total food grain production in the country is estimated to be a record 291.95 million tonnes, according to the second advance estimates for 2019-20. This is news to be happy about but as per the estimates of Indian Council for Agricultural Research (ICAR), demand for food grain would increase to 345 million tonnes by 2030.

Increasing population, increasing average income and globalisation effects in India will increase demand for quantity, quality and nutritious food, and variety of food. Therefore, pressure on decreasing available cultivable land to produce more quantity, variety and quality of food will keep on increasing.

India is blessed with 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. India is the top producer of milk, spices, pulses, tea, cashew and jute, and the second-largest producer of rice, wheat, oilseeds, fruits and vegetables, sugarcane and cotton. In spite of all these facts, 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 very prime issue. Farmers are still not able to earn respectable earnings.
Even after over seven decades of planning since the independence, majority of the farmers are still facing problems of poor production and poor returns.

Major constraints in Indian agriculture are:

- According to 2010-11 Agriculture Census, the total number of operational holdings was 138.35 million with average size of 1.15 hectares (ha). Of the total holdings, 85 per cent are in marginal and small farm categories of less than 2 ha (GOI, 2014).
- Farming for subsistence which makes scale of economy in question with majority of small holdings.
- Low-access of credit and prominent role of unorganised creditors affecting decisions of farmers in purchasing of inputs and selling of outputs
- Less use of technology, mechanisation and poor productivity for which first two points are of major concern
- Very less value addition as compared to developed countries and negligible primary-level processing at farmers level.
- Poor infrastructure for farming making more dependence on weather, marketing and supply chain suitable for high value crops.

Key Challenges of Agriculture in India

Future of agriculture is a very important question for the planners and all other stakeholders. Government and other organisations 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 for work on cost-effective technologies with environmental protection and on conserving our natural resources.

The reforms towards privatisation, liberalisation and globalisation affected 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 research and development, government efforts to rejuvenate the cooperative movement to address the problems of small holdings and small produce etc. are changing 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. All the constraints in agriculture make the productivity and returns complex but still a high untapped potential is there in India's agriculture sector.

Advantageous weather and soil conditions, high demand for food, untapped opportunities, various fiscal incentives given by the government for inputs, production infrastructure, availability of cheap credit facilities and for marketing and export promotion are attracting many individuals, big companies, startups and entrepreneurial ventures to do a lot of investments on innovations, inventions, research and development and on other aspects of business.

The components of improving Future Indian Agriculture

India has reached a stage in development where it needs 'evergreen revolution', i.e. producing more in less land with less water. Agri-business and agri-processing should be the main drivers of this revolution with crop diversification as one of the main strategies.

Soil Health Enhancement:

Agricultural universities, research institutions, krishi vigyan kendras, fertiliser companies, state departments of agriculture and farmers' associations should aim to increase the productive potential of soil through concurrent attention to their physics, chemistry (macro and micro- nutrients) and micro-biology. Dry farming areas need particular attention.

Irrigation Water Supply Augmentation and Management:

Water is a public good and a social resource and not a private property. The privatisation of its distribution is fraught with dangers and could lead to water wars in local communities. Improving supply through rainwater harvesting and recharging of the aquifer should become mandatory.

In addition, a nationally debated and accepted strategy for irrigating 10 million hectares of new area under Bharat Nirman Programme should be developed. All existing wells and ponds should be renovated. Demand management through improved irrigation practices, including sprinkler and drip irrigation, should receive priority attention.

A water literacy movement should be launched and regulations should be developed for sustainable use of ground water as well as for preventing pollution. Seawater farming should be promoted in coastal areas through the cultivation of mangroves, salicomia, casuarinas and appropriate halophytic plants. The conjunctive use of rain, river, ground, sea and treated sewage water should become the norm.

Credit and Insurance:

Credit reform is the primary pathway to enhancing small farm productivity. The spread between the deposit and lending interest rates is high in India by international standards. The need is to improve efficiency in the financial delivery system by controlling both transactions and risk costs.

On the part of the government, crop insurance as well as the speed and manner in which the debt recovery and settlement process operates would need to be considerably improved. Keeping in view the decline in profitability of agriculture, and the farmers' distress, the Government must consider providing support to the banking system for reducing the rate of interest for crop loans.

Rescheduling and restructuring of farmer's loans are not enough in the event of successive natural calamities. The Central and State governments must step in to create an Agriculture-Risk Fund to provide relief to the farmers in the case of successive droughts and in areas hit by floods and heavy pest infestation.

Technology:

Agricultural scientists should state the performance of new varieties and technologies in terms of net income per hectare, and not just in terms of yield per hectare. For this purpose, there is a need for a farming system orientation involving crop-livestock integrated production systems to both research and resource use. There should be a proper match between production and post-harvest technologies.

A post-harvest technology wing should be added to every krishi vigyan Kendra. Also, lab-to-land demonstrations should include post-harvest technology. Many of them should be organised in dry farming areas where millets, pulses, oilseeds and cotton are grown.

Value addition to biomass will help generate skilled jobs in the non-farm sector. Rice occupies the largest area in the country and there are opportunities for generating more jobs and income by establishing rice bio-parks. Similarly, eco-boards can be produced from cotton stalks as a replacement for plywood made from timber.

Market:

Ultimately, it is only opportunities for assured and remunerative, marketing that will determine the economic viability of farming both as a way of life and a means to livelihood. Market reform should begin with production planning, so that every link in the cultivation- consumption- commerce chain receives adequate and timely attention.

Regionally Differentiated Strategy:

With wide variations in agro-climatic and economic conditions across the country, there cannot be a single strategy of agricultural growth to be followed everywhere.

CONCLUSION

The best way to make agriculture globally competitive is to make farming economically viable, and that can be only possible if the roadmap for the next 25 years is based on strengthening the existing agricultural marketing infrastructure, and by ensuring fair prices to farmers. Technology is certainly welcome, including drones, as well as the next-generation digital technologies, but the future of Indian agriculture, the largest employer in the country, hinges on enhanced public investments and right public policies for the vast human capital in agriculture, and not by ushering in corporate agriculture. Major constraints in Indian agriculture are small and marginal holdings, subsistence agriculture, low credit supply, low penetration of technology etc. The efforts are being done to convert all the challenges in agriculture into opportunities and this process is the future of agriculture.

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