



Agriculture Education: Shaping India's Future

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Indian economy is solely based on agriculture and its related industries. Around 68% of total Indian population is occupied actively and passively in agriculture. This article focuses on how agriculture education can be helpful to the various sectors and how it can bring revolution in India.

Agricultural Scenario in India

Despite many setbacks, Indian agricultural scenario has surely undergone many drastic changes and has achieved many milestones. The green revolution (1967-1978) transformed India from a food deficient stage to a surplus food market. In a span of 3 decades, India established itself as a net exporter of food grains.

Interestingly, some developed countries, mainly Canada, which were facing a scarcity in agricultural labour, were so impressed by the results of India's Green Revolution that they showed interest in allowing farmers experienced in the methods of the Green Revolution to their own country. Many farmers from Punjab and Haryana states were then sent to Canada by GOI to settle there. That's why today one can see thousands of Punjabi-speaking citizens in Canada.

Also in the Indian context, worth mentioning are the significant results achieved in the fields of dairying and oil seeds through our white and yellow revolutions respectively. As of now, in terms of agricultural output, India is ranked second in the world. India is also the largest producer of milk, cashew nuts, coconuts, tea, ginger, turmeric and black pepper. India also boasts of the largest cattle population (193 million) in the whole world. Our country is also the second largest producer of wheat, rice, sugar, groundnut and inland fish. India is the third largest producer of tobacco. India is home to 10 per cent of the world fruit production with first rank in the production of fruits like banana and sapota.

Presently, Indian Agriculture is witnessing a phase of diversification. During recent years, much awareness has been generated on shifting to high-yielding varieties (HYV) of crops from conventional crops. This has enabled a successful transition in Indian Agriculture from its stagnation to a growth path.

The competitive advantages due to that Indian agriculture can surely boost are: Favourable Agro-climatic Zones, Huge Irrigated lands, Enough supply of Skilled, educated, technical and scientific workforce suitable for this field. At present, India boasts of 62 state agricultural universities, 7 deemed agricultural universities and 6 central universities for agriculture. These are actively involved in imparting education in various disciplines of Agricultural Sciences both at undergraduate and postgraduate level. These universities also conduct research programmes on various issues concerning the agriculture industry.

Scope of Agricultural Education in India

Modern agriculture practices are increasingly turning out to be knowledge-based and hence gaining expertise in them is not an easy task for many of our rural farmers. India does require education at all levels so that Indian farmers are better equipped to handle the threats of globalization. These days with the entry of Foreign Direct Investment (FDI) in the sector, many MNCs have forayed into the segment with dozens of agro-products; subsequently this has resulted as a threat to Indian farmers who lack professional expertise to better deal with the issue. Hence the need of the hour is to give agricultural education a high priority.

Despite rapid strides by the agriculture sector, still there exist many grey areas which require immediate attention. It's also true that several farmers have committed suicide especially in the states of Andhra Pradesh and Maharashtra because of indebtedness and repeated crop failures.

Keeping into account of the fact that increased productivity and production must be the sole objective of agricultural research, our scientific community is leaving no stone unturned for bringing about paradigm changes in agriculture education in the country. Government of India has come up with the following assistance to facilitate better education in agriculture sector:

Education on role of private investment in Agriculture: Efforts are being made to create favourable economic conditions to promote participation of the private enterprises in the establishment of Agro-based industries. Institutions such as Exim Bank Ago of India and National Bank for Agriculture and Rural Development (NABARD) and Directorate of Economics & Statistics are very much instrumental in channelizing investment from private sector to the agriculture sector.

Education and awareness on credit facilities to farmers: To meet local credit needs of farmers, many Rural Credit Banks have been established. These RCBs also offer Crop Insurance Schemes with lower premium and without red tapism. Banks like National Bank for Agriculture and Rural Development (NABARD) and Exim Bank Ago of India can be of great help in this regard.

Education on use of water resources: In India 70% of the water resources are used for agriculture. Due to many factors like increased urbanization and industrialization and also intensive use of agricultural chemicals and fertilizers, problems of water pollution, ground water depletion, Water logging, salinity and Desertification is on the rise. To tackle the issue, education on effective canal water management and adoption of improved irrigation methods is necessary. Ministry of water resources does provide education on the issue.

Education on strong marketing infrastructure: Education focused on the effective marketing infrastructure and techniques of preservation, storage, and transportation etc. with a view to reduce the post harvest losses and ensuring better returns is provided to farmers. Institutions like Indian Council of Agricultural Research and Marketing Research and Information Network (AGMARKNET) are working for the cause of upgradation and dissemination of market intelligence for the rural community.

Education on the role of effective agro – processing techniques: Setting up of Agro-processing units in production areas also helps reduce post harvest wastages. With the use of effective Agro- processing tools, farmers would surely be able to minimize significant percentage of loss. Indian Institute of Packaging is doing wonderful work in this regard.

Education on flood & drought management: Education on various tools and techniques to better combat calamities like flood and drought will surely help the agricultural output. Further, contingency agriculture planning for the areas prone to drought and flood can be of

greater help to farmers living in those regions. National Disaster Management (Ministry of Home Affairs) and Ministry of Water Resources also provide education on the issue.

Soil and water testing laboratories: These testing labs spreads across the country educate the farmers about various scientific tools for identifying superb soil and water for agricultural purposes. They analyze the soil and water samples from different farms and regions and assess the quality of irrigation water by providing appropriate recommendations for using different quality of waters to eradicate many soil related problems such as alkalinity, salinity, acidity etc., which surely results in increased agricultural output.

Education on laws and regulations in agriculture: An increase in agricultural income also calls for awareness about various laws with regards to investments in dams, canals, water harvesting, irrigation facilities, improved seeds, soil testing, better fertilizers and pesticides, storage facilities, transportation and access to markets etc. besides knowledge of agricultural a laws in necessary to get grants from various state govt. And also to bring in transparency and tackle legal issues involving concepts like VAT etc. Ministry of Rural Development (Department of Land Resources) and The Department of Agriculture and Cooperation, Ministry of Agriculture, Govt. of India formulate various policies for this sector.

Agri-price support: Market intervention scheme involving procurement through a notified agency like Commission for Agriculture Costs and Prices, Agricultural & Processed Food Products Export Development Authority (APEDA), and Marketing Research and Information Network (AGMARKNET) etc, can surely be of great help in assuring fair returns to farmers.

Points to Ponder

India is yet to emerge as a significant trade partner in the world agriculture market. Presently India holds around 1% of the global trade in agro- commodities, which is very less as compared to huge workforce engaged in this field. With the continuing trade discussions under the WTO, it's high time, Indian agricultural policy makers re-establish and re-brand its outlook to meet prevailing global threats. Despite many major structural transformations such as better input facilities and technology changes with regards to irrigation, High yielding seeds and changes in cropping pattern etc., the agriculture sector in India is still termed as the poor's profession in India

Suggestions for Future

To effectively capitalize the global competitive advantage, Indian agricultural institutes have to work out policy with regards to technology, more market access opportunities, and more transparency.

Conclusion

The 20th century witnessed radical developments in science and technology. These developments had an impact on the social and economic changes that took place in the world. Such changes gradually influence the day to day life of people at the grassroots levels. Agriculture related science and technology had a major impact. Agricultural education has been geared to harness the modern science and technology for higher productivity and production. This substantially helped to reduce the food scarcity in India. But sustainable food production is still the primary pursuit.

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