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# **ROLE OF INFORMATION TECHNOLOGY IN AGRICULTURE AND AGRO-BASED INDUSTRIES**

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### **ABSTRACT**

In the light of globalisation, it is necessary for the industry related to agriculture, to review their present IT infrastructure with respect to marketing function and, undertake measures to strengthen the same. No single institution or organization can succeed in the task of e-powering farmers and rural India. At the same time, scattered and half hearted attempts cannot be successful in meeting the objective. Industries with major stake in villages, should come together to provide the initial impetus. Information technology has a major role to play in all facets of Indian agriculture in addition to facilitating farmers in improving the efficiency and productivity of agriculture and allied activities; the potential of information technology lies in bringing about an overall qualitative improvement in life by providing timely and quality information inputs for decision making. It can be argued that the next revolution in urgent need of focus is IT revolution in field of Indian farming.

### **KEYWORDS**

IT, agriculture, agri-based industry.

# 1. BACK DROP

Indian agriculture is facing a tough challenge from the developed countries in this era of liberalization and WTO regime. So, in this situation, agriculture sector in India needs improvement in terms of cost, quality and output. To fulfill these needs, Indian farmers must be well informed about the latest trends in agriculture industry i.e., about new techniques of farming, new methods of cultivation, new crops, seeds, insecticides, pesticides water and nutrient management, and marketing of the produce. This can be possible only with the introduction of new millennium technology that is information technology (IT) in agriculture, which is playing an important role for sweeping changes in socio economic development in the era of globalization.

### 2. PRESENT SCENARIO OF IT

- \* The mobile internet is overtaking the wired internet.
- \* Networking is growing at a fantastic speed of 10-15% per month or about 200% a year.
- \* Specialists forecast that, in less than 10 years from now, internet terminals would be as common as telephone instruments but much more useful.
- \* About 99% of the districts have Optical Fiber Network (OFN) providing desired bandwidth of Internet connectivity for e-Commerce and e-Governance application in the country.
- \* The farming community has more readily embraced the internet than general population in countries like USA, Canada, UK etc.

# 3. UNIQUE FEATURES OF INFORMATION TECHNOLOGY

- Access to the storehouse of information is easy.
- Information is available instantaneously.
- Communication is interactive
- \* Information from any point in the globe is available
- Communication is dynamic and ever growing.

# 4. ROLE OF IT IN AGRICULTURE

In the context of agriculture, the potential of information technology can be assessed broadly under two heads: (a) as a tool for direct contribution to agricultural productivity and (b) as an indirect tool for empowering farmers to take informed and quality decisions which will have positive impact on the way agriculture and allied activities are conducted. Precision farming, popular in developed countries, extensively uses IT to make direct contribution to agricultural productivity. The techniques of remote sensing using satellite technologies, geographical information systems, agronomy and soil sciences are used to increase the agricultural output. This approach is capital intensive and useful where large tracts of land are involved. Consequently it is more suitable for farming taken up on corporate lines.

# 5. IT AND THE FARMER

The farmer requires timely inputs on weather forecasts, sowing time, availability and recommendations on inputs, availability of credit, expert advice on maintaining his crop in healthy condition, information on markets' and on all other areas of interest to him and his family. Despite the best efforts and expenditure, the conventional apparatus could not meet these requirements satisfactorily. Herein lies the potential of IT which can efficiently address the concerns of farmers stationed at even remote locations.

### 6. SERVICES TO FARMERS

A project must be started with the help of Indian Space Research Organisation (ISRO), which utilizes satellite based sensing data and Geographical Information Systems (GIS) and Outputs Remote Sensing and GIS information, which can provide warnings on evolving crop stresses, crop vigor etc.

### 7. IT AND THE INDUSTRIES THAT PROVIDE INPUT TO AGRICULTURE

There are various industries that provide inputs such as fertilizer, seeds, hardware equipment etc., to agriculture. If .these industries use the information technology, then they can satisfy the farmers with reliable service and they can also make high turnover.

# 8. IT AND THE INDUSTRIES THAT DEAL WITH AGRICULTURAL OUTPUT

The industry related to agriculture, either as a supplier of inputs or receiver of agricultural output, has a major stake to be competitive in this changing world. As the motivation is driven by the compulsion of staying fit, major segment of the industry has already embraced IT in a big way. The industries, which deal with agricultural outputs, may develop websites for their own and place their quotations on various agricultural outputs. It will be very helpful for the farmer to choose the best company who gives more money for his agricultural product. The industries may also use multimedia tools to attract the customers, by explaining their services graphically.

### 9. IT AND THE GOVERNMENT

Proper planning, monitoring and corrective action requires availability of timely information of right quality. The Central and State governments must hasten the process of computerization of all the records and transactions. Since the government has a major say in promoting agriculture, this will have cascading effect on

To begin with, it is necessary that 'the government agencies should accept conventional reports in the electronic format. Many State governments are showing interest in developing proper systems for e-governance. But the implementation of the same still requires a lot to be desired. The Central and State governments should also make information available for ready reference by those interested. Similarly, research institutions should exchange and provide information through a well-conceived network.

# 10. IT AND AGRICULTURAL ORGANIZATIONS/RESEARCH CENTRES

The agricultural organizations and research centers may give the correct and timely advice and information to the farmers through IT in order to rectify errors. The farmer can be benefited with results of these organizations and research centers.

### 11. IT AND INDIAN AGRICULTURE IN THE FUTURE

Technologically it is possible to develop suitable systems to cater to the information needs of the farmer. User-friendly systems, particularly with content in local languages, can generate interest in the farmers and others working at the grassroots. It is possible to create dedicated networks or harness the power of Internet to make these services available to all parts of the country.

It is suggested that it is useful to focus more on some agricultural products to maintain an unquestionable competitive advantage for exports. This will call for urgent measures to introduce state of the art technologies such as remote sensing, geographical information system (GIS), bio-engineering etc. India has made rapid strides in satellite technologies. It is possible to effectively monitor agricultural performance using remote sensing and GIS applications. This will not only help in planning, advising and monitoring the status of the crops but also will help in responding quickly to crop stress conditions and natural calamities. Challenges of crop stress, soil problems, natural disasters can be tackled effectively through these technologies.

# 12. CONCLUSION

The face of Indian agriculture can be transformed by a well-conceived deployment of IT. The key players involved in this process such as industry, government and educational institutions and research centers are required to male contributions in this endeavour. This initiative to develop necessary IT based agricultural services needs to be developed immediately.

In the light of globalisation, it is necessary for the industry related to agriculture, to review their present IT infrastructure with respect to marketing function and, undertake measures to strengthen the same.

No single institution or organization can succeed in the task of e-powering farmers and rural India. At the same time, scattered and half hearted attempts cannot be successful in meeting the objective. Industries with major stake in villages, should come together to provide the initial impetus.

Information technology has a major role to play in all facets of Indian agriculture in addition to facilitating farmers in improving the efficiency and productivity of agriculture and allied activities; the potential of information technology lies in bringing about an overall qualitative improvement in life by providing timely and quality information inputs for decision making. It can be argued that the next revolution in urgent need of focus is IT revolution in field of Indian farming.

### 13. REFERENCES

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