Agricultural Problems in India requiring solution through Agricultural Information Systems: Problems and Prospects in Developing Countries

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Abstract

Agriculture is one of the important terms in human civilization. Without agriculture and cultivation we can't get corn or vegetables and thus we cannot survive. Cultivators of developing countries like India, Bangla Desh face several challenges and problems like lack of knowledgeabout about corns and their appropriate timings of cultivation, weather, water and irrigation needed, pesticides and fertilizers useful, post production activities including marketing, use of human resource development, financial management and so on. Today not merely literacy but proper education is very much important for success in cultivation due to global competition and global trend of higher production and open marketing. This paper has attempted to pinpoint several agricultural information systems and similar facets which are helpful for healthy cultivation and agricultural practice.

Keywords: Agriculture, cultivation, agricultural information systems, knowledge and information, Indian scenario, marketing, agro-business management.

Introduction

Country like India truly depends on agriculture. Because here nearly 70% people are dependent on agriculture or cultivation; directly and indirectly. Agricultural people include cultivators and workers who work for some one's land and get either remuneration or a percentage of the product/corn or vegetables. Government made several promises help by way of subsidy on fertilizers, marketing etc many of which have been hardly kept or misappropiated and some of these are not possible to be implemented accurately due to illiteracy and less awareness of today's agricultural technology and science among the cultivators and similar professionals. Today technologies and tools are widely used for better agricultural and cultivation practice. The developed countries like USA, Japan, UK,

Australia use several weapons for better agriculture. They even use better information dissemination and information transformation systems for better agricultural awareness through the dedicated agricultural systems, agricultural centers, agricultural networks, agricultural information based websites, agricultural service-enriched sms mobile alert. Distribution of handling, announcement of any new information are practiced, formally or informally, to the cultivators and associated practicing people for betterment of the agricultural systems of the nation.
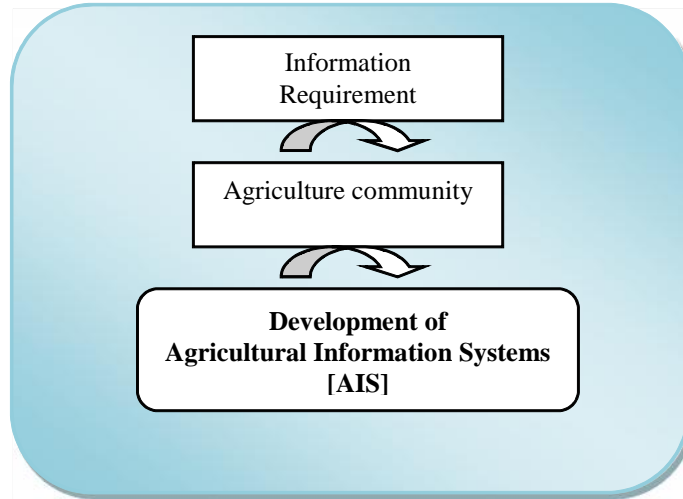

Fig. 1. Depicted the basics of Agricultural Information Systems

Objectives

The main aim and objective of this study include :-

- To learn the problems of agricultural systems in a country like India;
- To find out probable solution of these agricultural problems through the advance techniques and technologies;
- To learn agricultural information systems and their uses in agricultural and cultivation domain;
- To learn the strategies to deliver Agricultural Information Systems and Services to the cultivators;
- To find out main requirements for the Agricultural Information Systems in India;
- To come to a general conclusion in this field.

Agricultural Problems and Agricultural Information Systems

Country like India has several problems in the field of agriculture and cultivation which including lack of knowledge regarding corn and their appropriate land and soil nursing, timing of cultivation, need of water and irrigation systems, normal weather information and so on. Though apart from these, some farmers are not aware about pasting, and control systems, use of fertilization and allied facet, way of packaging for exporting, knowledge regarding marketing; where to sale and how to

sale. Here knowledge of demand of a particular vegetable and corn is also important. Proper information on other agricultural aspects is also important for healthy agricultural practice. The information like financial assistance, way for availing these services, terms and condition and so on. Knowledge of latest weapon and machine is also still not possible for the cultivator with lack of education or for living at remote village, way and requirement of using cold storage is an important name foe many ways but many cultivator are not aware where to store and about financial data.

Fig. 2. Some uses of Agricultural Information Systems at a glance

Agricultural Information Systems: Probable solution

Agricultural Information Systems [AIS] is a kind of information consortium responsible for the information activities such as collection, selection, organization, processing, management and dissemination of information, knowledge and similar facet. Agricultural Information Systems is actually combination of some agricultural information centers which are basically collects information and provide to their apex agency that is, information systems. Whereas some information systems is actually responsible for the formation of information networks which transfer information among the information systems. The Agricultural Information Systems may solve agricultural problems many ways as these are collect data, literature and information on agricultural related aspects and thus helps academician, agricultural scientist, chemical engineering, researcher and student to learn about of agricultural happening and so on.

Today Agricultural Information Systems are getting interactive in nature and thus these machine are provide information on weather, pasting, fertilizer, climate, marketing, soil and land information, new corn and their style of cultivation, making information may be provided to the cultivator directly

from the monitor or user interface. These interface are prepared nicely and such a manner where a layman and literate may avail his/her information from the Graphical User Interface/GUI or Human Computer Interaction based monitor; where simple picture highlights the message of particular topic.

Though today, the periphery of agricultural information systems is changing, thus some new things are included in Agricultural Information Systems [AIS], like mobile based information display, this is useful for the cultivation when they are in the field. Like Kissan/Farmer Call Center is useful to learn information on various topics and in many cases open round o clock, sms alert on weather, particular Agriculture Message is also a new arrival in all systems.

Agricultural Information Systems [AIS]: Requirement- A new look

Agricultural Information Systems [AIS] has several benefits and advantages which we learnt from the earlier points. Now let us know some existing and possible requirements of Agricultural Information Systems [AIS] in the present context:-

Content: Content is most important aspects for a healthy Agricultural Information Systems [AIS]; with out this it is not possible to provide any kind of information to the cultivator, planner, scientist, academician, student. Thus content generation, collection, preparation and content development is important task depending upon user requirement. Thus before content development we need to study user demand and their requirement.

Computing: Computing is an important task. Without computing devices and systems an automated AIS can not be run; like online automation agricultural information systems, mobile based agricultural information systems, offline Agricultural Information Systems [AIS] basically depend on computers and similar kind of peripherals.
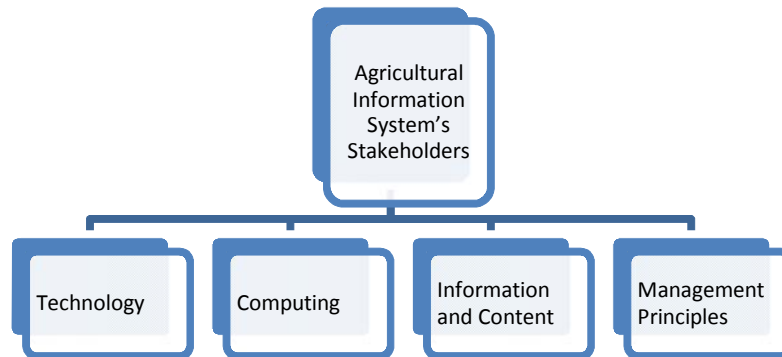

Fig. 3. Showing components of Agricultural Information Systems

Technology: 'Technology' is an important part for doing healthy computing. In Agricultural Information Systems [AIS] several technologies are used. For storing data and information DBMS and Communication Information among the AIS are used and the users need networking technology also. Multimedia technology is useful for presenting graphic agricultural information to the cultivators or farmers.

Understanding: Understanding of Agricultural Information Systems [AIS] is also an important task. Without proper understanding of AIS and its services, the ultimate value of Agricultural Information Systems [AIS] is zero. Thus, proper awareness programmes like workshops, seminars and conferences need to be conducted regularly to utilize Agricultural Information Systems [AIS] in a much better way. So, users study, psychological study is an important activity.

Cooperation: Cooperation is highly required from the cultivators for implementing the information systems and to get the benefits of such a system. If users of agricultural information systems is not so efficient and coversant then the whole effort will turn valueless. Thus cooperation and coordination are of vital importance.

Unity among the Information Systems

For better information systems practice it is essential that information systems are connected with several information centers and from time to time they are updated . For example, changing market price of any kind of vegetable/corn/product need to be up-to-date all the times. Thus, after modifying the data, Agricultural Information Centre needs to provide these to the Agricultural Information Systems [AIS]. Use of Human Computer Interaction and Graphical User Interface is an important task to be deliverd. They must be able to deliver information to the common users.

Software, hardware, tools and technologies also need to be up dated and modified from time to time depending upon the needs.

Findings

- Agricultural Information Systems may solve various problems of cultivators and academicians involved in agricultural sectors;
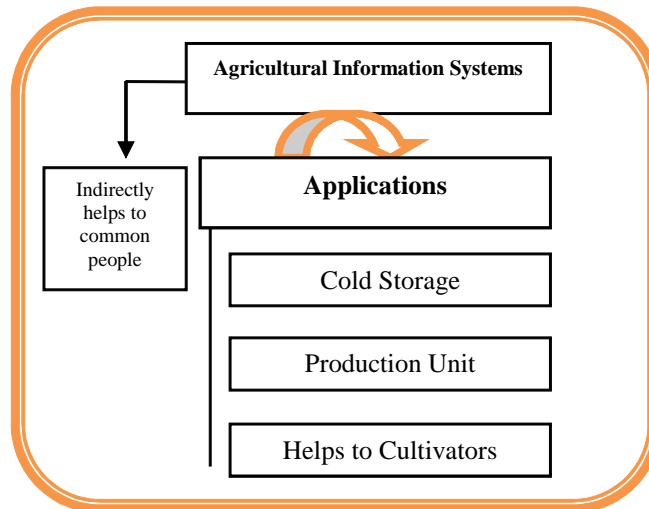

Fig. 4. Representing the general applications of AIS

- Agricultural Information Systems [AIS] include mobile based services, SMS alert, Kissan Call Centers and others, thus strenghing the systems;
- Agricultural Information Systems [AIS] and its benefits are still unknown to the common people and even to cultivators;
- In developing countries, Agricultural Information Systems [AIS] is still a burden of unwillingness, financé and handling.

Suggestions

- Government needs to take proper steps to start new Agricultural Information Systems [AIS] based on HCI and GUI for easy and convenient uses.
- Language of the AIS should be simple, straight forward, easily comprehensible and preferably local language based.
- Large number of workshops, seminars should be organized for the common people and cultivators to make them aware of the Agricultural Information Systems [AIS] and similar organizations.

Conclusion

For development of a country, Agriculture plays an important role; particularly in the countries where other economic resources are unavailable. Agricultural Information Systems [AIS] are in many ways responsible for healthy information transformation on agricultural topics which are not only helpful for the cultivators or scientists but also for the common people. Thus for overall development also, Agricultural Information Systems [AIS] play an important role.

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