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## INTERACTIVE E-GOVERNANCE: APPLICATION OF ICT IN AGRICULTURE WITH SPECIAL REFERENCE TO DACNET

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### ABSTRACT

*Communication has been taking place between man and matters for a very long time. Civilization is due to the exchange of such transaction of information between individuals and group of people. The receipt of information lead to the changes in the social, economical and political developments in the pages of history. In the more recent times, the sharing of details and information through internet and satellite have made a great impact on human knowledge which has led to enormous changes in the links between people of various societies. Using ICT in various fields of knowledge and government services takes us inevitably to the discussion of Interactive e-governance. The relationship between the government and the citizen is revealed in such application of ICT tools. Further it deals with in a detailed manner, the Interactive-Service model which is a consolidation of the other digital governance models and opens up innumerable possibilities for one-to-one and self-serviced participation of individuals in all the processes of the government. The potential of ICT is that it can bring together individuals into a digital network and enable multiple ways of flow of information and details among them. Since the participation is direct, it can assure for transparency in the process which is very important in execution of the plan of action. When the individual is willing to take part in the government plans, it gives a feeling of involvement and empowerment. This paper tries to focus on the application of ICT in the agriculture sector with special reference to the government project DACNET as it sees agriculture sector as an important field of planning in a government. It analyses in detail the appropriate application of ICT to rural agricultural areas under the project DACNET and sees the impact and improvement that follows very quickly.*

### KEYWORDS

Agriculture sector, communication, DACNET, ICT, Interactive-service model.

### 1. INTRODUCTION

In simple terms, e-governance is a governance that is managed by information and communication technologies which play an active role in delivering governance-oriented products and services to the people. In the changing scenario, it has become almost compulsory to use ICT in all the field of knowledge and consumption. It is very result-oriented when we apply it to the most important sector in our country, that is agriculture. It is the use of ICT in delivering products and services used in the agriculture sector covering farmers, herders, dairy workers, agriculture extension workers, daily- wage workers, merchants, agents, scientists and NGOs involved directly or indirectly.

A lot of interactive applications are possible in this sector which will help the agrarian community that is supposed to be the backbone of our country. Many welfare measures are to be considered in the successful execution of government plans which include increase in productivity, reducing loss or damage to the crops due to weather and insects, better stock management, speedy access to government services and schemes, appropriate market rates for farm products, food security to people, protection to biodiversity, minimum use of chemicals and also getting best seeds and improved technology. All these can be done only when the farmer or the person concerned is able to get information and details of the following: right information about the new varieties of seed; new technological developments in the field; forecast of rain and drought; information on government plans and projects in connection with environmental stability; water saving and management; awards for soil conservation activities and good over all performance in a year; ready availability of local and regional agriculture offices and name of the officers; testing centre for seeds and crops; instruction on milk production and the purification process, safety of the grains; advice on crop diseases; necessary information market values for various types of crops; availability of loan and its procedures and credit facilities.

When a farmer is contacting any official or authority in an office, he may be asked about his identity as well as the documents in support of his ownership of the land and storage of the grains which will help him in buying or selling cattle, land or seeds; for this he needs legal documents. To apply for various schemes and subsidies, to get electricity connection in his fields he needs to apply online. Also for claiming insurance, he has to see various details in the website of a particular company which cannot be given to him in any other easy way. All these are available online and if anything is not made online, that is also to be made online. Especially to developing countries like India, ICT applications in these areas will help the agrarian community to go for good agricultural production that is essential to ensure food security for all the citizens and to give hope for the farmers. This will have a direct impact on household and community welfare of the country.

There are some other projects also funded by governments and certain donors and they too demonstrate the useful role ICT play in the agricultural sector. Instead of aiming at immediate effect on the consumers, ICT shall be used to bring deep changes in the administration of the entire governance process. This may help to bring very important changes in the field like the following:

### 2. ENRICHED QUALITY IN STANDARDS OF SERVICE

IT tools can be applied to inform the public through new communication channels by which information about market trends, price and its status regarding the seeds, grains and crops and the contact details of the local agriculture offices.

### 3. PROVIDING NEW GOVERNMENT AGRICULTURAL SERVICES EXPECTED BY FARMERS

This shall help the farmers to make or renew their records regarding their lands and data can be made accurately, provision of credit cards for the purpose of purchase of new seeds, fertilizers, farm equipments, setting up of socially interesting equipments like television at public places to update them about the rain fall prediction and movements of the wild animals.

#### 4. ENHANCED PARTICIPATION OF FARMERS AND LAND OWNERS TO DECIDE THE MANNER OF PROVIDING VARIOUS TYPES OF SERVICES

If this is achieved, farmers and land owners can decide what type of funds are allotted to their village and how it can be spent at their place. This may include the very important problems connected with water management like cleaning and repairing the water canal lines and rain water harvesting structures at homes and multiplex complexes and malls. All the people involved in the field of agriculture should be in a position of getting what they want from the government the details regarding qualification for farm subsidies, dam construction and increasing or decreasing the water level in it. The course conducted or the bulletins issued at regular intervals by the regional government centre shall reach the agricultural workers and others linked to the crop building process at right time.

#### 5. ADDING MORE EMPLOYEES AND LABOURERS TO KNOW GOVERNMENT SERVICES

It is not enough if regular land owners and farmers are alone getting the benefits of government services under the speedy functioning of ICT-oriented programmes of action designed by the officials. New section of agrarian workers who tend themselves to keep away from the regular process like unorganized farm workers, landless farmers, migrant labourers, women farmers and tribal people who have given their life to gardens and forests. When they also come under the broad and wide coverage of various government facilities, it will surely help the agriculture sector of the nation. In turn it will improve the economic development of the country.

When all these efforts are fulfilled, we can feel proud to say that good governance through ICT has become a reality for all the sections of the society, especially the agricultural community which leads to a strong improvement in the households of those who are dependent on agriculture. Thus we see that the role of e-governance in agriculture sector is very important. It does not stop with digitizing of government records, making available government announcements and application forms online, ready grievance- redressal system or exposing workers and land owners to computers that are kept in local and regional agriculture training centres. And thus it becomes a tool for effective and uniform service applications.

Electronic governance applications which are sure to focus on governance products and services will become popular and a profit is possible to reap from it. If the ICT applications do not focus on the agriculture workers, then it becomes costlier and may not justify the trust on it. The ICT tool created will help the farmers who browse the government agriculture departments. So when it is produced, e-governance models have useful information, data, statistics etc., that can be really supplied by the agriculture ministry and officers related to it. An example of one innovative use of new ICTs is the implementation of the so-called telecentres or information kiosks. In Tamil nadu, the portal by name India Agriline connects the farmers and others in rural places to markets and to market information, knowledge like weather data, agricultural extension services and crop cultivation practices, social welfare agencies like Primary Health Centres. In Tamil nadu there is a network of information kiosks related to the IndiaAgriline website portal that aims at the sugarcane farmers. Though farmers are asked to register as members in it, the service is provided free of cost.

Earlier in India, the Satellite Instructional Television Experiment (SITE) project was started in 1975. It was aimed at reaching 2400 villages in 20 districts with satellite television broadcasts. The basic idea was to broadcast synchronized agricultural, health, nutrition and family planning messages to the rural farmers. It contributed much to the development of farmers giving them a good confidence in proceeding with their work. The government of India, going further to fulfill its vision to improve the services in the agricultural sector, has created a unique project nearly a decade ago, by name DACNET. In elaborating on it, this paper further gives insights into the integration of nature, culture and technology which are blended successfully in this project. In the following passages we can see more about its recent roles in the agrarian industry.

#### 6. DACNET – AN E-GOVERNANCE INFRASTRUCTURE FOR THE GLOBALIZATION OF INDIAN AGRICULTURE

Trusting strongly on the development of agriculture leading to overall development of the country, India's Department of Agriculture and Cooperation (DAC), Ministry of Agriculture authorized a project called DACNET to be implemented by the National Informatics Centre which is the technology division of the Indian government. The most important vision of DACNET is to facilitate Indian agriculture online. The key criteria of DACNET includes ease of use, speed of information delivery, low incidence of errors in providing statistics and data, reduction in corruption and affordability of services to common public. Approved in September 2001, the project aims to dramatically strengthen the information technology infrastructure in all the Department of Agriculture and Cooperation directorates, regional directorates and its field units. The DACNET project has reduced the time taken to deliver services while making information available to its citizens over the internet.

##### 6.1 APPLICATIONS OF DACNET

It is applicable in various areas of agricultural field where usage of IT tools are possible. They are as follows:

- Plant Quarantine Information System
- Crop Weather Watch
- Market Prices Analysis
- Bio-fertilizers Informatics Online
- Integrated Pest Management Information System
- Computerized Registration of Pesticides
- Knowledge Management System
- e- Granthalaya
- Farm Machinery Informatics Online

##### 6.2 OBJECTIVES OF DACNET

The very aim of it is to make easy availability of reliable information and exchange of the same across the departments and its directorates and field units on understanding the needs of the utilisers. Its objectives can be identified as follows:

Better communication internally to the organization using e-mail and instant messaging for enhanced coordination, knowledge sharing and research

Quantitative enhancements in the government's work culture

Telecommuting features that will provide for geography independent work

Streamlining existing methods and practices, both administrative and technical

Easy access to the publishable information and minimal administrative intervention with proper search features

Greater integration and use of the data from a variety of data sources

Optimal utilization of available budget and staffing resources, simultaneously moving towards the goal of the paperless office

This project has been undertaken by the National Informatics Centre.(NIC). The goal of the National Informatics Centre is to deliver coherent and integrated solutions that offered farming best practices, shared experiences and global solutions to India's farmers. NIC also enables the Department of Agriculture to provide agricultural information to farmers over the internet, making it widely available on a cost-effective basis.

#### 7. PAPERLESS OFFICE

The National Informatics Centre seeks to create an electronic, paperless office environment to aid employees in delivering more services while requiring fewer resources to achieve it.

The electronic office (e-office) includes

- a) Directorate Portal Services for providing the general public with policy and guidelines information on each directorate



- b) Development of e-governance applications that automates the business process of each directorate in the areas of government functions, interaction of government and business enterprises and government and citizens and the like. Feedback from the current systems will influence future business process re-engineering projects
- c) Development of an intranet for employees that provides them with self-help human resources and budgeting applications

#### 7.1 INCREASED EMPLOYEES EFFICIENCY THROUGH IT EMPOWERMENT

To empower employees with IT applications, a comprehensive training program was developed and implemented for 4,000 employees across various directorates and field units. The employees previously had little or no prior knowledge of personal computers (PCs) and information technology. The program therefore had topics that covered basics of PCs such as interacting with Microsoft Windows XP, Office productivity tools, database design and analysis, decision support systems and geographic information systems. Mr. Moni, Deputy Director General, NIC is of the view that these systems, their secure networking and readily accessible information reinforce the commitment of the department. This project demands the concerned staff to take quick decisions to improve capacity for crop production and food supply in the country.

#### 7.2 RECHARGING CITIZENS WITH DIGITAL POWER

The DACNET project has helped to provide better delivery of government services to the citizens of India in deep villages in the country too. It is true that our people are empowered with easy access to information. This digital upbeat in rural areas of the country facilitates rural prosperity and the ability for rural people to help themselves due to the abundance of information. This is really a forward step towards digital inclusion to foster rural enterprise.

### 8. CONCLUSION

In India, the new ICTs including computers, internet, e-mail and mobile phones are in the centre of discussions on development in any field. To achieve more meaningful change, the use of new ICTs are taken up by even international organizations like the World Bank and UNESCO with perspectives on certain initiatives. Such a new kind of interest in ICTs for agricultural development has been remarkable and it raises the question of quality of change. In our country, ICTs are not used at the cost of cultural relevance in its very perspective. Another important point is that ICTs need not be always targeting a large number of audience; it can play its role for selective local and community level groups connected with agriculture. Though there are some difficulties in implementing, the ICTs have the potential of becoming a very easy and more liberal medium of communication. The flexibility, speed, interactivity and specificity are not compromised in sharing the information while using the ICTs. Instead of simply sharing the knowledge, ICTs in agriculture are employing social learning, participation and interactivity. This is a very remarkable impact in the agricultural sector after the arrival of ICTs leading to a kind of cooperation between natural sciences and communication technologies. Because of this, the Indian farmers and other related employees will have a big chance of being successful in an appropriate and sustainable way.

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