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Web Based Agricultural Extension In India

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- Agricultural extension work in India - State Departments of Agriculture, the Extension Directorates of State Agricultural Universities and Krishi Vigyan Kendra's of ICAR
- World Bank had launched Agricultural Technology Management Agency (ATMA)
- Establishment of “Ryot Samparka Kendras” or “Farmers’ Contact Centres” by Government of Karnataka

Current Status

- Farmers do not have easy access to knowledge on technology, inputs, credit and markets etc.
- Project on “Village Knowledge Centres” is awaited
- ICTs have a potential role - Mobile phone revolution, WIFI and WIMAX technologies

Internet Based Agricultural Extension In India

1. Bhoomi
2. e-Choupal
3. NIC's initiatives
4. aAQUA
5. DEAL
6. IKisan
7. IFFCO
8. Warana Wired Village
9. Agriwatch
10. e-Sagu
11. Akshaya

1. Bhoomi

- E-Governance project of the Government of Karnataka
- 20 million land records of 6.7 million land owners in 176 taluks of Karnataka have been computerised
- Total transparency in land records administration with added advantage of security and reliability
- Based on the overwhelming success of Bhoomi project, computerisation of land records are now made mandatory for all the states in India

Highlights of Bhoomi

- Fully online system to carry out mutations on land records data
- Finger print biometrics authentication to ensure full proof authentication system and to enforce the concept of non-repudiation
- Facility to scan the field mutation order passed by revenue authorities and the notice served on the public
- Land record centre in each taluk office for public interface
- Synchronises with the regular field work done by Village Accountants and Revenue Inspector
- Provision for interfacing of Touch Screen Kiosk at taluk office.

2. e-Choupal- Initiative of ITC Ltd.

- **e-Choupal-** Link rural farmers directly for the procurement of agricultural / aquaculture produce like soya, coffee, and prawns - Role of the middleman is eliminated.
- The principle of the eChoupals is to inform, empower and compete.
- There are 6,500 eChoupals today.
- ITC Limited is adding 7 new eChoupals a day and plans to scale up to 20,000 eChoupals by 2012 covering 100,000 villages in 15 states, servicing 15 million farmers.
- Transactions through these eChoupals may rise to about US \$ 2.5 billion by 2010.

3. NIC initiatives

- **Computerised Rural Information Systems Project (CRISP) / Rural Soft** : Facilitates the monitoring and planning exercises of District Rural Developmental Agencies (DRDs), State Rural Development Departments (SRDs) and the Ministry of Rural development (MoRD) in the area of poverty alleviation.
- **Land Records Computerization project (LRCP)** : Maintenance of land records.
- **eNRICH** : Addressing the needs of rural people through networking communities and building collaborations between government and citizens.
- **AGMARKNET** : Providing effective information on market prices related to agricultural produce.

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- **Community Information Centers (CICs)** : Provides information on forms, rules and procedures, government tenders, notifications for employment opportunities, information on tourism, culture, examination results, schemes, legal issues, guidelines for bank loans, weather information etc.
- **ASHA** : Facilitating agribusiness through building of information useful for farmers and establishment of direct link between buyers and sellers.
- **RuralBazar** : Addressing the market needs of rural producers by provision for simple showcasing of the products, off-line payment as well as online payment.

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- **Property Registration** : Setting quality and time standards for all registration services – calculation of stamp duty, revising the rates of market prices, deed writing, providing computerized copies of Records of Right (ROR), computerized history of transactions on property and land record mutation etc.
- **National Panchayat Portal <http://panchayat.nic.in>** : Provides vertical and horizontal integration across rural Panchayat Raj Institutions (PRIs), facilitating communication, message broadcast, fund transfer, monitoring of programmes etc.
- **Panchayat Raj Institutions Administration Software (Priasoft)** : Monitoring the accounts of Panchayat Raj Institutions by state RD / MoRD.

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- **e-Gram Vishwa Gram** : Maintains a record of village information of all families and provides necessary certificates such as income, caste, domicile etc to the common man.
- **e-Panchayat** <http://panchayat.nic.in> : Effectively solves the information management problems at village level. Provides internet based services for birth and death registrations, house tax assessment collections, trade licenses, old age pensions, works monitoring, financial accounting, MIS for panchayat administration, market prices and agricultural extension advice.
- **Infogram**: Automation of the functions of a Village Panchayat and maintains on-line records. Also provides vital inputs for decentralized planning, registration of births/deaths, house tax, licenses, certificates (e.g. income, caste etc.), accounts and panchayat information etc.

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- **Rural Digital services:** Provides a single window for all government services such as birth/death registration and certificates (caste, income, widow, unemployment, no tenancy etc.) at village level.
- **Lokvani <http://www.sitapur.nic.in/lokvani> :** Provides citizens an opportunity to interact with government about various government schemes, forms, list of old age pensioners, list of scholarship beneficiaries, allotment of food grains to kotedars, allotment of funds to gram panchayat, land record etc. without actually visiting the government offices.
- **LokMitra:** Offers services such as classified complaints, forms download, job vacancies, tenders, schemes information, market rates etc. through Lokmitra Kendras.

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- **Gyandoot** : Catering to the everyday needs of the masses such as commodity / mandi marketing information system, income certificate, domicile certificate, caste certificate, driving license, information regarding rural markets etc.
- **e-Gram Suvidha** : Generation of thematic maps of village resolution based on user queries.
- **Swajaldhara, Total Sanitation Campaign (TSC) and Nirmal Gram Puruskar <http://ddws.nic.in>** : Physical and financial monitoring of rural drinking water supply and sanitation programmes

4. aAQUA : Initiative of IIT Bombay

- aAQUA is an online multilingual, multimedia Agricultural portal for disseminating information from and to the grassroots of the Indian agricultural community.
- aAQUA- *almost All Questions Answered* is a farmer-expert Q&A database supporting Indian languages
- aAQUA integrates multiple databases- farmer, kiosk operator, expert and other user database, Q&A database, farmer feedback data, farmer schemes data, Price Information database (Bhav Puchiye), Crop Recommendations database, Crop Disease Images database and Q&A translations database.

5. DEAL: Initiative of IIT Kanpur

- DEAL is an ICT enhanced network built on an existing framework of tele-centers in rural institutes, village schools, village level agriculture extension centers and other deployment partners.
- Creates a digital knowledge base for the farmers and other agricultural practitioners.
- This involves communities of village level extension workers, agriculture scientists, farmers, rural citizens and developmental agencies.

The Framework:

- Development of digital content from tacit knowledge of front line entities.
- A common ontology and metadata.
- Develop intuitive interface for rural citizens to use Knowledge bases.
- Provide tools and technologies that facilitate the content side of Village Knowledge Centers.
- Enhances the coherence and inter-operability of digital content created by different stake holders and supports efficient and effective archiving and reuse of knowledge in the domain of Indian Agriculture and rural livelihood development.
- DEAL, focuses on Knowledge Acquisition, Knowledge Organization, Knowledge Visualization techniques and technologies that can bridge the digital divide.

6. IKisan

- IKisan is a comprehensive Agri Portal addressing the Information, Knowledge and Business requirements of various players in the Agri arena such as farmers, trade channel partners and agri input / output companies.
- Provides online, detailed content on - crops, crop management techniques, fertilisers and pesticides and a host of other agriculture related material.
- IKisan enable farmers to network with other farmers, suppliers and consumers across the world.
- IKisan - developed by the Nagarjuna Group - a large diversified South India based group with interests in infrastructural projects and areas such as agriculture (fertilisers, insecticides), energy, steel, finance, refineries etc.

7. IFFCO

- The Indian Farmers Fertiliser Cooperative (IFFCO) - World's largest manufacturers of fertiliser.
- 'IFFCO's agri-portal'- Sixteen states have been covered with information of relevance to farmers in local languages and can be accessed through IFFCO's website www.iffco.nic.in.
- User-friendly intuitive graphic based navigation is provided to facilitate viewing in touch screen environment.
- IFFCO has installed about 100 Farmers Information Kiosks in 16 states.
- Training programmes and farmers meetings are conducted to encourage farmers' to use the facilities provided in farmers' information kiosks.

8. Warana Wired Village

- Initiated in 1988 to increase the efficiency and productivity of sugarcane sector and also to provide a wide range of information and services to 70 villages around Warana.
- Comprises of 25 co-operative societies and a membership of over 20,000 farmers with a total turnover of over US \$ 130 Million.
- There are 54 functional village information kiosks which are open from 10 am to 6 pm and frequented by 30 to 100 farmers daily.
- Resulted in saving of US \$ 7,50,000 to the cooperatives.

The key lessons learnt from the project are that the ICT usage:

- Has to be based on felt needs of the communities
- To be owned by the communities
- To be made relevant to women and landless poor and
- Operators have to be empowered

9. Agriwatch

- agriwatch.com is the largest agribusiness portal in India.
- Enables access to a large amount of agribusiness related information covering more than 15 sub sectors within the Agricultural and Food Industry.
- The daily / weekly / fortnightly Agriwatch Trade Research Reports are published.

10. e-Sagu

- e-Sagu is an IT-based personalized agriculture extension system (eSagu) to improve agricultural productivity by disseminating a fresh expert agricultural advice to the farmers, both in a timely and personalized manner.
- Phases of eSagu:
 - eSagu prototype for 1051 cotton farms 2004-05
 - Cluster-based eSagu Prototype Project
- Web-based Agricultural Information Dissemination System:

Agricultural experts get the information about the crop situation through Internet in the form of both text and image data, and then generate the appropriate advice which is sent to the farmer through the Internet

11. Akshaya

- Akshaya project is a market driven Agricultural Initiative through IT enabled Agri Business Centres in Kerala State
- Addresses the existing gap in agriculture information flow and transaction management.
- Envisages facilitating and enabling farmers and other Stakeholders through Agri-Business Centres to interact with Agricultural Service Providers in the Private, Government and Non Government sectors.
- Provides a web-based solution enabling the small and medium farmers as well as owners of large landholdings.

The vision:

Establish a connected farmers community throughout Kerala who have access to information on Market Demand, Prices, Good Agricultural practices, Quality Agricultural Inputs supported by a technology enabled robust transaction platform that facilitates all their offline activities.

Challenges

- Lack of relevant content in local languages
- Absence of Decision Support Systems

Projects in Pipeline

- World Bank aided project of ICAR-NAIP - “Re-designing the farmer extension agricultural research /education continuum in India with ICT mediated knowledge management” launched in January 2008.
- For the first time, the IT and agricultural professionals have come together in a structured format

Conclusion

- In the absence of collective and coordinated efforts by the above said institutions, ICTs have not penetrated rural India despite time, money and efforts invested so far.
- Initiatives of NIC and ICAR may have to be pursued jointly by all the public institutions such as a Ministry of IT, Agriculture and Rural Development.