India Case Study

Introduction

This paper is based on the findings of a joint DFID, FAO and ODI fact-finding mission to India in November 2001, which interviewed a wide range of government and non-government staff from organisations involved in providing information on agriculture at National, State, District and Sub-District levels.

Contents

Background

Poverty and poverty reduction strategies in India

India is a low-income country, with a GDP per capita in 1996 of $380. About half the population lives on less than $1 a day. Government surveys indicate that 320 million people, 35% of the total population, fall below the Government of India official poverty line, which is lower than the $1 a day benchmark. Some 80% of poor people live in rural areas, where the incidence of poverty is slightly higher than in urban areas (37% c.f. 31%). Rates of poverty vary widely between states, from 12% below the Indian Government poverty line in Punjab to 55% in Bihar. For most states, however, the figure is 25-45%. [DFID, 1999]

Government poverty reduction initiatives include reservation policies for scheduled castes and tribes, legislative measures, and a wide range of employment, safety net and subsidy programmes for the poor (costing over 1% GDP). Rural public works have generally been the most successful, providing out-of-season employment to large numbers of poor people, but have not involved any upgrading of skills. Credit schemes have generally benefited both poor and non-poor groups, and have not been linked to training. Subsidised public food distribution systems have been least effective in terms of the share of benefits received by the poor, although they have helped prevent famine and the Government has proposed a more targeted scheme. Further poverty strategies are focused at the state level, such as the Andhra Pradesh (AP) poverty reduction strategy with five priority areas: improved human development outcomes; enhanced livelihood security; governance reforms and fiscal stabilisation; greater empowerment of poor women and disadvantaged groups; and impact assessment for decision-making through good quality and timely information.

Information Systems and ICT

The Government of India has invested heavily in the country's telecommunications infrastructure, through a land-based backbone supplemented by satellite- and microwave-based connectivity where appropriate or specifically justified. This infrastructure development, implemented by the National Informatics Centre (NIC) is set to provide telephone and potentially internet connectivity to block level throughout the country over the next few years, and beyond in some areas. India also has a vibrant information technology sector, with many highly skilled software and hardware specialists, and a substantial software industry supplying many clients in developed countries.

New Policies

Preparation is well underway in India for the 10th 5-Year Plan, which is due to start in 2002. The Planning Commission "Approach Document"[1] prepared as a consultative draft, states that agriculture should remain a high priority for the government given that over 60% of people depend on it for their livelihoods, and that these include 80% of India's population living below the poverty line. However, recommendations are made that India should (a) diversity its crop production sector to avoid the surpluses arising from 30 years of intensification of production of the primary staple food grains, (b) continue to invest in agricultural research, (c) move towards privatisation of extension services, and (d) invest in all aspects of information and knowledge exchange, including the telecommunications infrastructure. This shift is reflected in the supporting documentation from most government Departments. The new national policy framework for Agricultural Extension describes a radical new approach to agricultural extension in which: *"Extension agencies, services and workers will need to exercise a more proactive and participatory role, serve as knowledge / information agents, initiating and facilitating mutually meaningful and equitable knowledge-based transactions among agricultural researchers, trainers and primary producers. All this needs to be done in an effective and cost efficient manner."*

[1] September 2001

Strategic priorities identified in the framework include policy reforms, institutional restructuring, management reforms, strengthening research-extension linkages, capacity building, empowerment of farmers, mainstreaming women in agriculture, use of media and information technology, financial sustainability, and a changing role of government.

Opportunities to improve information for livelihoods

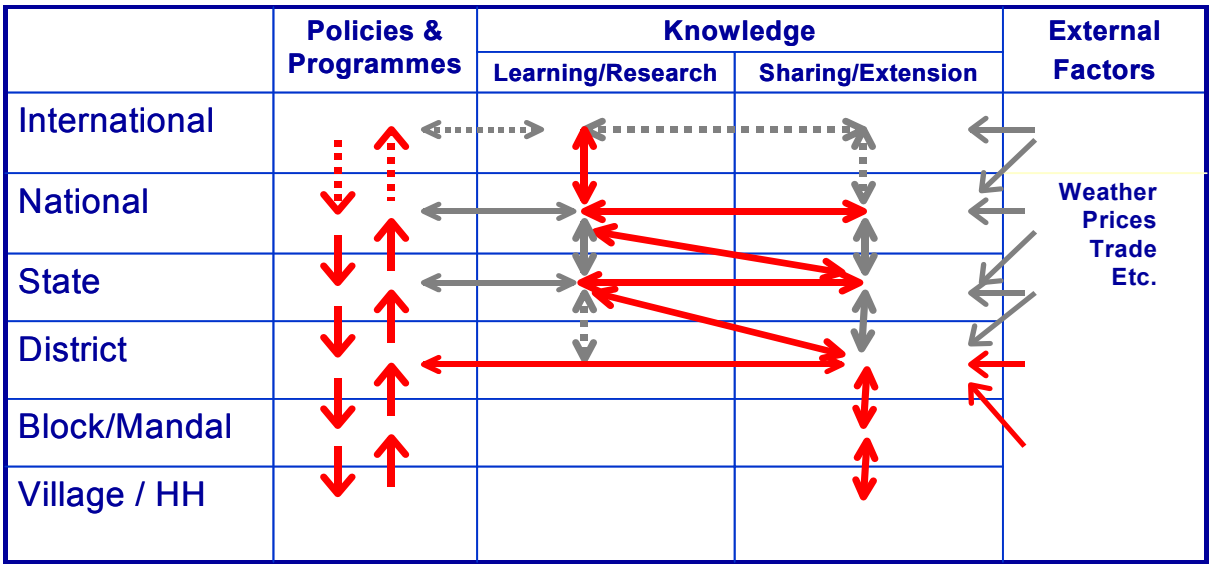
The effective provision of information to improve livelihoods in poor rural communities in India is influenced by an enormous range of policies, institutions and processes, including the World Trade Agreement, international agencies, and CGIAR Review process at international level, to Panchayat-level development programmes, and village-level women's groups, as shown in **Table 1**.

The basic infrastructure exists in India for collection and aggregation of information for policy and programme planning from village to national level, although it is generally recognized that new methodologies are needed to address the relevance and accuracy of data. Systems do also exist for dissemination of information about national and state policies and programmes via the Payanchati Raj institutions to rural communities, although in reality many rural poor people and especially those in remote areas do not have access. Various formal and informal channels also exist for information exchange and communication between knowledge learning (research) and knowledge sharing (extension) institutions at national and state levels, although it is widely claimed that these need strengthening in terms of availability of content and accessibility. Communication systems within the districts and between them and the state-level institutions clearly need to be improved. Additionally, there is a strong unfulfilled demand for livelihoods-relevant information about the external context especially at district level. Some key features of livelihood-relevant information flows in the institutional hierarchy in India, are shown in the **Figure 1**, where each element of the matrix represents one or more institutions.

Table 1 – Examples of Policies, Institutions and Processes involved in agricultural information provision in India

	Policies	Institutions	Processes
International	World Trade Agreement	UNDP, FAO, CGIAR	Doha Meeting; CGIAR Review
National	5-Year Plans; National Agriculture Policy; National Agricultural Extension Policy	Line Ministries; Indian Council of Agricultural Research; National Institute of Agricultural Extension Management (MANAGE); Broadcasting Authority	5-Year Plan preparation and implementation; National Agricultural Technology Project (NATP); Agricultural Research Information System
State	State Development Plans, Andhra Pradesh 2020 Vision	State Agricultural Universities, State Ministries, Samaikya Agritech, State Media and Broadcasters	NATP; Research-Extension Liaison
District	District Development Plan	District Planning Board; District Dept of Agriculture, KVKs.	NATP; Gyandoot; Agricultural Marketing Committee
Block / Mandal	Block Development Plan	Women's Group, CBOs	Watershed management schemes; Block DA
Village / Household		Panchayat Authority; Families; Women's groups; Traders	Livelihood strategies

Figure 1 - Livelihood-relevant information flows in India[2]



[2] Solid Arrows indicate frequently active links; Dotted arrows indicate infrequently active links; Red arrows indicate links requiring strengthening.

The focus on rural livelihoods in India should be on improving information exchange between the diverse decentralised agencies involved in rural development, in particular those involved in poverty alleviation, food security and land reform. Information systems and services need to be improved to ensure they meet the needs of both men and women, and contribute to greater transparency, better governance and improved disaster responsiveness. Better information systems are needed to accommodate literacy and language differences, to meet users' (livelihood) needs, and provide the right information in the right format for people to make decisions and take action. Although there are many innovative approaches to improve information availability in India using modern ICTs, -they have mostly developed in isolation and with little systematic evaluation or exchanges of lessons learned. Information systems for rural communities need to provide a range of types of information content such as market prices, non-farm sector information, small enterprise development and economics, information on government schemes, weather and early-warning information, indigenous and traditional knowledge. Information systems for policy makers need better and more reliable poverty monitoring indicators.

Specific opportunities to address the key issues identified in the desk study are described below.

1. Cost, value and sustainability.

There is much practical experience in India of extending telecommunications and internet connectivity through government institutions, such as the NIC and to rural areas through public, private and public-private partnerships, although most has been financed by the government. There are also several examples of initiatives providing locally relevant information at village level through information "kiosks" with internet or intranet connectivity, where users are prepared to pay for services. Large-scale public investment in information provision to farmers and rural communities through the **State Departments of Agriculture** and Agricultural Universities, such as the Orissa University of Agricultural Technology (OUAT) using a wide range of media from print and radio to interactive, satellite-linked television provides an excellent basis on which to build. Private Sector initiatives such as EID Parry's 'Agriline Portal' in South India are experimenting with financially sustainable approaches based on a 'commodity focused' information demand. These are expected to provide the platform for broader community access information services through public access centres ('Parry's Corners') managed as a rural business enterprise.

2. Empowerment and Democracy.

Initiatives sponsored by government (eg **Sneha Maliha Women's Groups**) and non-government (e.g. **Gyandoot network**, **Pondicherry e-villages**) organizations are successfully showing how poorer rural communities can be empowered by providing locally relevant information on the wider aspects of livelihoods such as governance issues, market-related topics as well as crop production methods. These pilot ventures cover only a tiny minority and are only at an experimental stage. The existing inequities in access to information are only likely to be addressed by making such approaches scaleable by documenting and disseminating operational guidelines, methods and tools, and by considering the most remote areas where the poorest often live.

3. Local content and context.

Even in projects which are aimed at delivering information to rural communities, there is a shortage of appropriate "public goods" information in electronic form, and what content exists is often not in the local language(s). Material published by government institutions, such as State Agricultural Universities and Departments of Agriculture, can be over-complex and technical, only available in printed form, and not aimed at farmers or rural householders. However, there are several interesting and popular experiments providing rural communities with interactive question-answer sessions to policy makers and experts over a combination

of telephone, radio and television channels. Specific initiatives at the local level, such as the information centre in Balikuda block in Orissa (see UNV- BITes) help to focus resources on the provision and management of locally relevant information.

4. Building on existing systems.

The principal governmental institutions, some larger community-level organisations, and most large- and medium-sized private sector organizations have access to and use the Internet technologies, such as email and to a lesser extent the Web. Many of these also have digital internal information and communication systems which work reasonably well. Enormous improvements in information availability could be achieved by improving connections between these disparate knowledge systems, but substantial investment will be required in customizing and applying systems standards and methodologies. NIC has the mandate for providing the governments IT and information network infrastructure and the impressive existing network is expected to be extended even further at the District and Block levels.

5. Building capacity.

India has a rich supply of knowledgeable and highly skilled professionals in the areas of information and agricultural (*sensu latu*) technologies, as well as vibrant private and non-governmental sectors capable of providing a wide spectrum of services to rural communities. Indian farmers have shown that they are capable of producing national surpluses of the main food grains under increasingly uncertain climatic conditions. But, the context is changing as: (a) public funds are being withdrawn from agricultural support services such as extension, forcing a shift from person-to-person Training-and-Visit (T&V) systems, increasing the role of private-sector service providers and leading to more impersonal information delivery systems; and (b) the emphasis in agricultural production is on diversification, shifting from cereals for food to protein-rich, and market-oriented products for income-generation. New skills are needed in this changing environment: (a) farmers need to know about less traditional crops and farming systems, as well as markets, and small enterprise development, and they are forced to seek information from a wider range of sources; (b) agricultural support services such as research and extension need to produce a different range of more practical information that farmers can understand and use more easily, and will be needing new information systems to share information more effectively with other professionals and related organisations; and (c) ICT specialists need to re-engineer their skills to suit the rural infrastructure and rural users, as information systems reach down to farmers. National organisations such as MANAGE are responsible for facilitating the changes necessary in the extension system such as through the provision of training courses for both the public sector extension staff and the private sector agribusiness staff as well as developing distance learning and multimedia initiatives.

6. Realistic approaches to technology.

India already has a rich variety of initiatives for building improved information systems and services in rural areas. The most successful combine new technology with existing information and communication systems, and cater as closely as possible to local needs. Government agricultural officials at State level in Andhra Pradesh claim improved efficiency through monthly video-conferences with staff in all 28 Districts, which supplements their biannual face-to-face meetings. The Andhra Pradesh Government has also entered into a public-private venture to digitise some of its information system supporting delivery of primary healthcare in villages, and somewhat controversially is attempting to introduce palm-top devices for data recording and transmission by frontline healthworkers. Introduction of these new information systems confronts great challenges in technology and mobilisation of content. The **Gyandoot** project in Madya Pradesh has established 32 self-financing, village-based “kiosks” linked by an Intranet application run over a wide area network (WAN), and rural communities are using these facilities to improve their access to public information

(land records and technical advice) and as a communication channel for complaints and grievances (via e-mail to District government). The project has to support all the costs of system development and maintenance, although great economies of scale could be achieved if the work were to be undertaken in the public domain at State level. The project's manager also considers it will be necessary to enrich the content offering over the next few months, but does not have the funds to upgrade the WAN to provide the higher connectivity capacity required[3]. In contrast, a small private sector supplier of agricultural advice and inputs[4] in Andhra Pradesh is struggling to establish itself in several villages used to free but ineffective government services, because it has chosen to build a complex digital information system to support its field staff. A large start-up investment was required to construct the system's software from first principles, and to digitise even the public-domain content because no suitable content was already available from government institutions or elsewhere. The company now wishes to protect its investment in the system, and other endeavours in this area would have to repeat this almost prohibitive initial outlay.

7. Strengthening partnerships.

A wide range of formal and informal partnerships drive India's development. In the agricultural sector alone, institutional networks on an enormous scale employ over 30,000 scientists and academics in over 150 research institutes and universities, responsible for generating technical information for a public establishment of over 70,000 extension workers at state, district, block and village level. Responsibility for rural development and agricultural production policies has been officially decentralised to State level, although the Ministries in Delhi still provide general advice and guidance. Although formal partnerships and systems for cooperation have evolved between government departments, institutes and universities at national and state level, information exchange and communication between organizations is often patchy and slow in practice. This weakness is compounded from the district-level downwards, so that communication between local agricultural stakeholders and higher level institutions can be very inefficient. In addition, the existing partnerships are often not wholly appropriate to India's modern streamlined approaches to government, to the government's efforts to privatise parts of its agricultural support services, and to market-based rural development. New partnerships are needed in this new environment, to deliver the right kind of information in the right format to support the livelihoods of the rural poor.

[3] The upgrade would involve installation of Wireless in the Local Loop (WiLL) technology.
[4] Samaikya Agritech Pvt. Ltd.

A national intervention

There is an opportunity to build on existing initiatives in India, and introduce some well-developed FAO approaches to help build a programme for communications and information from village to national level. The programme would have three main components.

1. Community Networks

The Community Networks or "FARMNets" model is designed to make use of a combination of traditional oral, inter-personal and printed and modern IT-based media to gather and share relevant information to community members at village level. They are often focused around telecentres or computer kiosks with access to a continuously updated database or web site of relevant local information, and connected to the internet or a local intranet. The kiosks are usually managed by a local person, who provides information, from the computer, to people who cannot read or use a computer, along with a range of other computer-based services. Community Networks are designed to provide access to the majority of the local population, especially the poor, women or socially disadvantaged, and usually seek to combine new with traditional or indigenous knowledge. There are a large number of different examples already operating in India, but staff working in local networks visited by the Strategic Programme Team, wanted help to:

- improve network access through new communications technology and by using other media such as community radio;
- establish systems to generate and disseminate more locally-relevant content;
- improve the interface with other information systems.

FAO has gathered a substantial number of lessons from local variants of the FARMNets model of Community Networks, which have been based on a wide range of means of communication including person-to-person contact, printed media, and audiovisual extension materials, radio, television, computer networks and the internet. There is an opportunity for the Strategic Programme to share some of this experience and work together with partners in India to:

- establish a collaborative action-research programme with a small number of existing community networks;
- help to develop and test new systems;
- develop feedback mechanisms to gather evidence and enable comprehensive evaluations;
- document and package successful approaches for wider use elsewhere.

Partners would include amongst others local government, NGOs, community-based organizations, tradesmen, and broadcasters.

2. FIVIMS

FIVIMS is an internationally supported initiative to collect and analyse information on food security and vulnerability, to help national and provincial governments develop better policies and responses to improve food security for vulnerable groups. Given that FIVIMS has yet to be implemented in India, the Government is planning to implement a project over the next 18 months under a FAO-supported TCP[5] to test the FIVIMS approach at district and state level. The pilot project will explore methods for monitoring pockets of food insecurity exist at sub-district level for effective targeting of assistance to the most vulnerable groups. It was noted that there is a large potential overlap between the information needed for a FIVIMS-like

[5] Technical Cooperation Project

approach and some aspects of the information that local stakeholders would like to be able to obtain through the Community Networks.

There is an opportunity therefore for the Strategic Programme to work with the FIVIMS pilot project to extend the approach to block and village levels and:

- strengthen the role of the National Informatics Centre (currently responsible for national FIVIMS data) to gather and provide useful information at district level and below;
- undertake a cross-sectoral analysis of specific indicators relevant to food insecurity and vulnerability;
- establish inter-sectoral communication advisory committees;
- help develop better information systems to strengthen information sharing between agencies (possibly through community networks); and
- document and communicate the experience to other national FIVIMS processes elsewhere.

Partners would include a wide range of national Ministries and major agencies, local government, NGOs, multi- and bilateral agencies, and university academics.

3. VERCON

Agricultural research institutions in India have begun to put resources into building digital information systems and web sites, and the Indian Council for Agricultural Research has set out to develop a national agricultural research information system (ARIS) that links up the institutes. Some organisations involved in agricultural extension, especially a few of the state agricultural universities, also have relatively sophisticated information systems including web sites. However, the large public institutions have in general made slow progress in the development of electronic dissemination and communication, and links between research and extension remain based primarily on person-to-person contacts at meetings, workshops and seminars. Both researchers and extension staff expressed a need for better communication between research and extension agencies, especially to increase the accessibility of the public goods being generated.

FAO has developed the VERCON concept, which aims at improving linkages between and within agricultural research and extension institutions through strengthening the human network of staff of research and extension institutions, faculties of agricultural education, NGO workers and in some cases agricultural producers themselves. A VERCON aims at providing an electronic network which allows stakeholders to communicate and to develop, share, store and retrieve information. The concept is currently being tested in Egypt, but VERCON is intended to be a series of unique national implementations.

There is an opportunity for the Strategic Programme to work with research and extension agencies in all sectors[6] in India to develop and test VERCON-like systems to strengthen linkages between institutions, improve knowledge generation and exchange, introduce and/or strengthen two-way communication processes, generate, share, store & retrieve information/knowledge.

The process would need to include:

- identifying a small number of research and agencies to work with in one or more specific geographical locations;
- an institutional appraisal and development of a functional specification for the human and electronic networks and systems;
- implementation of a pilot project;
- evaluation and adjustment;

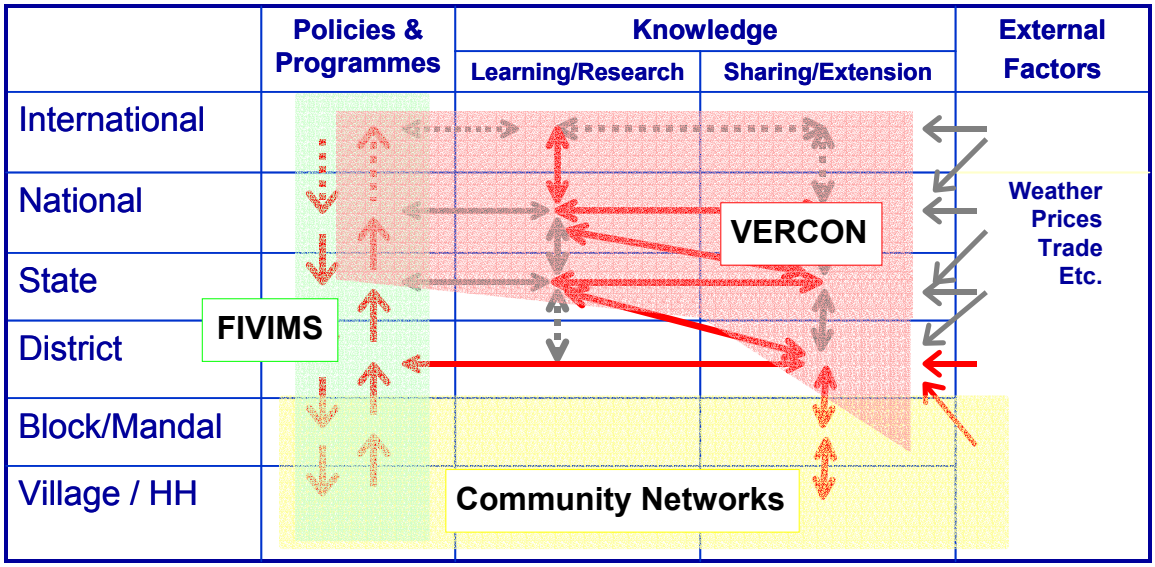
[6] Governmental, Non-Governmental, and Private

- wider-scale rollout in India including development & training; and
- documentation and packaging of the approach for application elsewhere.

Partners could include one or more state agricultural universities, national research institutes, international research centres, national and local extension and marketing institutions and intermediaries.

How these components would map onto the communication and information architecture in India is shown in Fig 3.

Figure 3: Community Networks, FIVIMS and VERCON in India



Implementation

India is a larger and more complex institutional environment than the other two countries identified for components of the Strategic Programme (Ghana and Uganda). Further discussion is necessary with FAO's link agency in India, the Department of Agricultural Cooperation, which is set to establish an inter-departmental Task Force to address the following issues over the next few months

- the precise nature and scope of the programme interventions, within the overall framework as above, in relation to existing development activities and initiatives;
- the key partners in each intervention;
- the geographical location of interventions;
- the governance and guidance of the programme component in India.

However, it is likely that a team of at least two full time project staff will be needed, one of whom at least will be based in the FAO office in Delhi.

Organisations involved in information provision

Box 1 - Indian Council for Agricultural Research (ICAR)

The ICAR**,** which coordinates all agricultural research in India is working on national-level databases to enable all Indian research institutes to share information, employs journalists to translate the scientific information into useful information for farmers, and holds an annual workshop for the Department for Agricultural Cooperation to share problems and solutions, and develop priorities for new research. Most state-level research institutes have their own internet sites, and many Universities or State Departments of Agriculture have regular information slots on radio and TV. The **Indian Agricultural Statistics Research Institute** is producing a Project Information Management System for the National Agricultural Technology Project. The system will include databases and text documents, a "Monitoring Module" to detect problems with implementation, a "Production System Module" with information on production systems from research institutes in all 5 Agro Ecological Zones in India; a "Mission Mode Module" for each institution; and a "Competitive Grant Proposal" system. IASRI is also responsible for Data Warehousing for agricultural data in India and are currently working with 13 research centres across the country to develop databases for a range of different resources/technologies. Finally, the **Department for Information and Publications in Agriculture** is responsible for publishing all central government agricultural publications in India. Although still focusing on print media (often printing over 20,000 copies) they are developing more electronic and multimedia publishing capacity.

Box 2 - Ministry of Rural Development (MoRD)

The MoRD which coordinates and provides guidance to state and district level departments is keen to find out about farmer's information needs and to increase government transparency. Villages now have to display a board listing all the projects in the village and the resources spent on them. The Ministry is supporting the development of Panchayati Raj institutions and their information activities as a mechanism to ensure that information reaches the vulnerable at village level.

Box 3 - Ministry of Agriculture / National Agricultural Technology Project

The **Ministry of Agriculture** is implementing the World Bank-funded **National Agricultural Technology Project,** which includes a component for establishing the infrastructure for better agricultural information services in institutions and in rural areas. Although the Ministry supports the concept that information should be demand driven, and paid for by farmers, it is necessary to put the infrastructure in place with enough useful content to convince farmers of its value before they will express a demand.

Box 4 - National Informatics Centre (NIC)

The NIC is responsible for all the networking systems and software for the government of India. NIC hosts over 500 websites and has a major programme for integrating agricultural information and IT in India. 600 districts and 6500 blocks are connected to NICnet which is used for a number of networks and projects. These include the Computerised Rural Information Systems (CRISP), MARCnet - the marketing network linking over 700 markets (target 7000 which will be the equivalent of 5 per district), STARnet to provide networking facilities for extension workers agreed in principle by the World Bank for funding during the 10th year plan.

See http://www.nifindia.org/ for more detail

Box 5 - The National Institute of Agricultural Extension Management (MANAGE)

The National Institute of Agricultural Extension Management (MANAGE) is located in Hyderabad, Andhra Pradesh on the Rajendranagar campus adjacent to the National Institute of Rural Development, the National Academy of Agricultural Research Management and the Andhra Pradesh Agricultural University. Manage is mandated to improve the agricultural extension system through the development of need-based training, extension management techniques, programme oriented research and a global documentation and information network. The Institute provides consultancy services and is facilitating the extension component of the NATP (see Ministry of Agriculture above) in six districts. MANAGE is pioneering many new approaches to providing demand driven extension services such as through the distance learning programme and the 'Multimedia Interactive Training in Agriculture' programme that has already developed over 100 hours of classroom training material for 'self-based' learning. Training and diploma courses are provided in subjects ranging from agricultural policy and programme management to extension management and agricbusiness.

Box 6 – The Department of Technology Education in Bhopal, Madhya Pradesh

The Dept of Technology has been testing a District-level government information system in Dhar District (see below under Gyandoot for more information) to provide information to farmers and promote greater transparency in government. The system provides marketing and movement information for agricultural products, information about government projects, and a feedback system allowing farmers to communicate directly with government staff at District-level. They would like to gradually extend this into a state-wide network covering all 52,000 villages. There are three internet service providers in the State, one public and two private, and the infrastructure is expanding very fast.

Box 7 - State Secretary of Agriculture in Bhopal, Madhya Pradesh

The **State Secretary of Agriculture** in Bhopal described a number of other initiatives to provide agricultural information including radio programmes (which are listened to by c. 4.5 million people), a telephone and video linked discussion between farmers and a panel of scientists and government staff, and a weekly 2-hour agricultural education programme on television. But there are many constraints to improving agricultural information systems in Madhya Pradesh including a low population density, (down to 13 people per km^2 in some tribal areas), high levels of illiteracy, poverty, and some traditional beliefs, which create barriers to new approaches.

Box 8 - The Gyandoot Network

The Gyandoot Network operates in Dhar District, Madhya Pradesh. It is a big District with 13 blocks, 12 of which are Tribal. The population is 1.7 million. Agriculture is mainly rain fed, and the main crops are maize, soya, cotton, wheat and gram. A wide range of horticultural crops are also grown, and bananas, in the south of the District close to the Narmada river, where many farmers have irrigated farms. There are a few large, irrigated farms, and some specialist farms producing medicinal plants and organic vegetables for export (which even have their own web-sites to sell produce internationally), but it is a drought-prone District with poor rains for the last 3 years. The Panchayati Raj system is strong, and the National Watershed Development Programme is developing 222 micro-watersheds in the District. Government agricultural extension services are well developed with 3 Agricultural Officers and 15-20 extension workers in each block. The Agricultural Department works closely with the Agricultural University in Indore and have an Agricultural Workshop twice a year where scientists and extension staff meet to identify technologies for dissemination and research priorities. Certified seed is distributed through the Co-operatives. Information is distributed to farmers in brochures and leaflets, on the radio and TV, in the newspapers, through farm visits, demonstrations and agricultural fairs. The Gyandoot programme started in January 2000 as a mechanism to improve the dissemination of agricultural information and increase government transparency. It is an intranet linking 68 computer kiosks (including 30+ in schools) in villages up to 100km from Dhar with the District HQ. Users can access a wide range of services including information on market rates; e-marketing; agricultural Information and a Q&A service to Government Agricultural Staff; information on education & the syllabus, exams, text books and a Q&A service to Government Education Staff, a matrimonial service, and an e-mail service directly to specific government offices, who have to respond within 10 days. The server is managed by the government at District level, while the kiosks are managed by private entrepreneurs, who charge a fee for each service. Up to 10 to 15 people use each kiosk each day, which provides a modest salary for the kiosk operator.

Box 9 - Orissa University of Agricultural Technology (OUAT)

The Orissa University of Agricultural Technology (OUAT) carries out on farm trials in 5 districts and prepares extension materials for the extension service in the local Oria language. These materials are printed and prepared with information from the research community and ICAR. The University also carries training for extension agents and distance education for farmers. There are currently 12,000 farmers paying 50 Rupees for a booklet and a series of lessons by post. The farmers can also send in their questions by post. There is a video unit at the University that prepares training videos based on the programmes and demonstrations being run at the 14 KVKs (Krishi Vigyan kendra) in Orissa which act as Farm Science Centres. The University also provides programmes for the TV (Krishi Darshan) for 4 programmes per week from 6.30-7.00pm. TV coverage is limited in the rural areas of Orissa but the radio has over 60% coverage. The Faculty of Agriculture is part of the committee on mass media which also develops the radio programmes for the state.

Box 10 - UNV - BITes centre

The United Nations Volunteers have established a computer access point in Balikuda, in Jagatsinghpur District, Orissa. The Balikuda Information Technology (BITes) project is an experimental project to assist in the implementation of the governments rebuilding programme following the Cyclone in 1999. Records of the local rebuilding works are kept on the computer and used to monitor spending and approve grants for further works to be carried out. There is only one terminal but when it is available villagers can use it to access other information such as exam results which are now being published on-line.

Box 11 - Samaikya Agritech Pvt. Ltd, Andhra Pradesh

Samaikya is a private-sector extension services using computer-based information technology which started in March 2001. The programme has established a network of offices at village level, each with a full-time agricultural graduate adviser, to provide a one-stop-shop for all agricultural extension needs including discounted inputs (through bulk purchase), practical extension advice and information about other government programmes that can provide assistance. Each office has a computer and modem, connected to a computer at "HQ" via telephone. The progamme uses sophisticated suite of database-driven software to gather data about the village, farmers fields and crops, and to provide a Q&A service from contracted "experts" through the HQ office, who can answer questions that the "office" adviser cannot answer. Farmers who want to use the service "register" with the service and pay a fixed fee per acre of each crop for all advisory services. The business started well – exceeding expectations, but has slowed due to the drought this year – farmers are only achieving c.20% normal output. Each centre only has c.50 farmers signed up, and the business needs 1000 at each centre to break even.

Box 12 - Sneha Mahila Women's Group

Sneha Mahila In Maheshwaram Mandal (sub-District) in Andhra Pradesh is a federation of womens' groups. First established in one village as "Thrift and Savings" group by the Department for Rural Development, it has grown into a substantial rural bank with nearly 7,000 savers from 474 women's groups in 53 villages. Group members save a small amount weekly, and can then borrow larger amounts of money to invest in small enterprises. Women have borrowed money in groups and individually to rent land for agriculture (esp horticulture and citrus orchards) and set up a wide range of businesses including general stores etc. 60% of loans are for agriculture. They can also borrow money to cover other expenses e.g. school fees or medical expenses etc. The programme recently acquired a computer and trained 4 women to use an accounting package (for the bank) and the internet. They use it to find out agricultural prices, weather information and other agricultural information. Although they find the internet useful, they complained about the lack of information in the local language, and are planning to set up their own website to publish their own information, and provide links to other relevant information in the local language.

Box 13 - Pondicherry e-villages

The MS Swaminathan Research Foundation has set up a Vilanur Village 'Hub' with 'nodes' in the poorest villages. The 'dalit' village of Thirukanchipet is connected to the hub and women use the centre for running training courses and accessing information on government programmes. MSSRF is particularly focussed on developing training courses for poor and marginalised women according to their needs with a high level of participation and local ownership. Information priorities vary between the villages and the user groups. In the fishing village of Veerampattinam weather information is downloaded and broadcast over loud speakers to the whole village. The centre had developed into a multi-purpose information centre with students volunteering to run it on a day to day basis. The equipment was supplied by MSSRF on the condition that the villages provided a building for the centres and people to manage them.

Box 14 - EID Parry

EID Parry have developed an 'Agriline Portal' for the sugar cane farmers that supply its sugar cane factory. The company has created a 'hub' at the factory and 'Parry's Corner' access points run by commercial farmers in rural areas as additional business providing information services to other farmers. The farmers who want to set up a 'Parry's corner' information service are assisted in getting a loan to buy a computer (through a partnership between EID Parry and Hewlett Packard e-inclusion initiative). Farmers can then access the Agriline Portal for all the information regarding their contracts with Parry's and broader community information that could be accessed by other members of the village. The concept was still very new amongst the farmers and the location of the terminal (such in his house) made it unlikely that 'public' access would facilitate more general public access. Initially, however, it is the sugar cane farmers who are being targeted as they are expected to be able to pay to access information regarding Parry's inputs and services and when they receive payments for their crops from Parry's. The sustainability of the model is being built around the 'commodity focus' of the information supplier (Parry) and the sugar cane farmers for the management of their business. However, it was clear that the Portal had been designed to serve broader community information needs and develop into a platform for improved extension services in the future.