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Rural Knowledge Centers: Partners in Promoting a New ODL Paradigm

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Abstract
It is called a Rural Knowledge Center (RKC), Village Information Center (VIC) or a Community Learning and Information Center (CLIC). It is a new institution in the Indian rural milieu. It is a one-stop center of the village where community members can be assisted with information ranging from how to manage pod borer infestation in their pigeonpea crop to what are the government schemes currently in operation his/her village. These are increasingly seen as vehicles of capacity building and educational change in rural India. Home to nearly 65% of the country�s population (1.2 billion), rural areas have little opportunity for the poor communities to learn life skills. The incidence of poverty, illiteracy and malnourishment experienced in this part of the country is much higher than its urban counterparts�. The information needs of the poor rural communities in agriculture, animal husbandry, health, governance and the like had so far been considered impossible to address owing to the vastness of the nation and remoteness of the areas to be catered.

Success of many ICT4D projects, a wealth of institutional knowledge and a long standing in open and distance education, have created opportunities for the country to provide right kind of information to the needy at the right the time. Technology mediated non-formal distance education with a focus on development and supported by rural knowledge centers is perceived as a new paradigm in distance learning. It is thought; this would play a major role in imparting life long learning skills to vulnerable rural communities and help them fight poverty. This paper examines the opportunities and challenges for RKCs in distance learning as experienced by different institutions engaged in this filed.

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Introduction

Nearly 70% of India population is still rural and dependent on agriculture and allied activities. Agriculture as an enterprise in India has become very challenging. It is getting more and more knowledge intensive. According to the Indian National Commission on Farmers (2004), farmers and rural entrepreneurs need dynamic information relating to meteorological, management and marketing factors as related to crops and animal husbandry, fisheries, agro-forestry and agro-processing. The new approach to productivity improvement and employment generation is also information and knowledge intensive. In the context of globalization of trade, there is a need for launching a genetic (i.e. relating to genetically modified farm products), legal (i.e. IPR and Farmers' and Breeders' Rights), quality (i.e. sanitary and phytosanitary measures and codex alimentaris standards), and trade (i.e. prices in home and external markets) literacy movement.

The present agricultural extension system is inadequate, both in terms of number of personnel and reach, to handle the complexities of the situation. There is presently a disconnect between what farm families need by way of generic and dynamic information and what the conventional extension agencies are able to provide. It is also important to address the need for demand driven and value added information that is time and location specific. There is a strongly-felt need for knowledge transfers between and across rural communities, scientists, educators, administrators, health care providers, technology enablers on local agro-ecological and socio-cultural conditions of each village, and also relating to various farming methods and techniques.

This can be effectively addressed through a network of Rural Knowledge Centers (RKC's) or village information centers that have modern information and communication facilities (ICT's) for information gathering and dissemination. With a network of RKC's in place, families in rain-fed and dryland areas can access their information needs with facilitation from a band of well-trained information volunteers. This system can also cater to information needs related to healthcare, credit and marketing.

Strategy

Though India has made impressive ICT based growth in the service sector, it has been largely urban centered and rural India is yet to fully harness the benefits of ICT-led knowledge economy. This segment living in rural and semi-urban areas is however the nation's core strength and determines the demand and supply base for a range of goods and services. Consumer goods companies, automobile manufacturers, TV and radio producers have proven the strength of this segment by expanding into rural areas. The emergence of Rural Knowledge Centers and info-kiosk movement in India largely promoted by NGOs and corporate sector, has demonstrated that the local Panchayats and self-help groups can take advantage of appropriate information and communication technologies and with this facility, they can easily access the scientific and technical knowledge they need, to solve local problems with greater precision.

India is now in a position to take the benefits of the Internet, community radio, cable TV and vernacular press to all the 600,000 villages within the next few years. A National Alliance for Mission 2007: Every Village a Knowledge Center (www.mission2007.org) has been formed to mobilize the power of partnerships among the public and private sectors, academia, mass media and civil society organizations. Thus, every village has a strong potential to turn into a learning center.

ODL for Agriculture and Livelihoods: The Triple Helix Approach

That VKCs can be strategic partners for promoting ODL in agriculture and livelihoods to bring about rural transformation is premised on creating a viable blend of three different recent trends in development:

1. International and national agricultural research that leads to the creation and validation of useful knowledge in all areas relating to drought mitigation and management (this includes validated information on indigenous practices as well ; the term, �traditional knowledge� includes this as well).
2. Applications of modern information and communication technologies in rural development (ICT4D), which is fast emerging as a key trend in development research.
3. The Open Distance Learning paradigm that aims at education of masses of people in a highly flexible manner; it needs to be creatively adapted to suit the requirements of individuals who have little or no exposure to the class room milieu.

The approach has been to blend them to develop a novel program of extension communication and education that will help build more effective linkages between large numbers of rural women and men and expert organizations across national or regional boundaries. This we believe will provide the basis for a customizable, mass education process that is built on rapid-delivery techniques. We try to present these components as the three strands of a triple helix where each strand is �in touch� with the other two strands at all the points.

Rural Information Hub as an Access Point ODL for Agriculture and Livelihoods

(1) Addakal , AP State, India

Addakal is a development block headquarters in the Mahbubnagar district of Andhra Pradesh S tate. It is one of the poorest regions in India. It is a cluster of 37 villages, spread over an area of 19,397 ha; 15% of this area is covered by irrigated land, 60% by rain-fed lands, and remaining 25% is considered as `wasteland.' The district comes under Southern Telengana agro-climatic zone; annual rainfall varies from 391 to 542.6 mm. Most of the tube-wells, open wells and tanks in this area are dried up, eventually the area turned into highly drought prone.

According 2001 census conducted by the Government of India, the population and the literacy rate of this area is 46,380 (male: 50.57%, female: 49.43%) and 35% (male: 66%, female: 34%), respectively. Over 75% workers are engaged in agriculture, dairy farming and allied activities. High risk associated with low investment capacity of farmers often results in higher rate of out migration, food insecurity and poverty. The main agriculture crops are castor, groundnut, maize, chickpea, pigeonpea, sorghum, pearl millet, paddy and orchard crops. Similar to other SAT regions, Addakal also depends on the livestock. Nearly 70,000 sheep, 9000 cattle and 8000 goats are helping the poor people of Addakal to survive the vagaries of harsh climate.

This area consists of 8639 houses, 10 post offices, 998 telephone connections, 1 government hospital, 8 veterinary hospitals (one doctor is available for all the hospitals), 1 government junior college, 9 government high schools, 21 government elementary schools, 1 Anganvaadi Kendras (government baby care centers), 10 dairies led by women, 1 library and 3 banks including the all-women Aadarsha Mahila Bank.

However, due to the pressures of social and cultural factors and due to the inability of the local economics to support the poorer sections of the community, migration and in recent times suicides have become noticeable coping mechanisms of the community.

ICRISAT has been partnering with the Adarsha Mahila Samaikya (AMS-Adarsha Women's

Welfare Organization) since 2004 to foster learning and information exchange between rural families and expert institutions. The umbrella project for this activity is the Virtual Academy for the Semi Arid Tropics (VASAT- www.vasat.org). The AMS is a legally founded federation of village level all-women micro-credit gro ups. The AMS covers 37 villages in Addakal and has a membership of almost 5200 women, most of them from poor households. The AMS hosts the hub infrastructure comprising a bank of PC's, and a low-cost satellite connectivity to the Internet. The AMS has developed a support system comprising a woman manager of the hub and three part time workers providing network services in three villages. VASAT made an attempt to train the highly motivated semi-literate rural women belonging to AMS. VASAT organized a computer literacy training programs to these selected rural women in two phases. The focus of the first phase is to train them on basic computer operations, working with MS office and troubleshooting. The second phase concentrated on Telugu (the local vernacular language) digitization working with Telugu software.

In the initial stages, a blend of off-line CD's and email was used to facilitate learning at the hub on drought issues. Over a period of two years, the capabilities of the workers at the AMS matured to a level where a variety of questions from the farm families are carefully supplemented with local information and then relayed to distant experts via email. The trained rural women themselves would provide solutions to the farmer questions from the questions repository built by them from time to time. In case a new question was received they would approach ICRISAT experts via email. Thus a database of most frequently asked questions by the farmers of Addakal region has been built locally. It serves as an important resource for the information center from which the trained facilitator can dig out for an answer to a question that has already been asked by the farmers of that region. There is a significant reduction in the time needed to receive expert responses. This is possible only because of improved capabilities of the hub operators and networking village volunteers in an ODL mode.

The Addakal hub has been selected as a Village Resource Center (VRC) of the Village Resource Center project of the Indian Space Research Organization (ISRO- www.isro.gov.in) and our partner, the M S Swaminathan Research Foundation (www.mssrf.org). ISRO has provided the AMS with satellite-based 2-way video link along with a downlink to ICRISAT. In the initial stages the ICRISAT and AMS organized live interactions with the experts; later on , based on the expressed interest of trained rural women and rural farm communities we started virtual classes daily .

These virtual classes focused on groundnut at the request of Addakal farm communities. The r esource person from ICRISAT discussed with the rural women the good agriculture practices related to land preparation, suitable improved varieties, sowing methods, water requirement, fertilizer and pesticide applications, and harvesting, in the regional language (Telugu) while projecting the generic modules in English. During these sessions the women noted down the important points relevant to them.

Following these virtual classes the trained rural women organized farmers meetings in their respective villages in the evening hours and shared their notes with them. The questions from the farmers were reviewed during the session . They also digitized the content and prepared Microsoft PPT slides in the local language (Telugu). The rural women at the hub developed locally relevant information from the ICRISAT generic learning modules on gr oundnut by following this frame work. Here is a case where there is evidence that ODL methods can lead to more effective localization of generic content.

(2) Use of Videoconferencing as a Learning Support Tool across Multiple Rural Centers

Our partner, the MSSRF (see above) leads an India-wide program on satellite-connectivity-based VRC's (see above). We worked with the MSSRF program to test the usefulness of the VC as a tool in promoting new awareness on crop management issues. The first in the series of videoconferences was in early 2005 with the groundnut farmers,

supported by the use of high bandwidth video link provided by the ISRO to the MSSRF.

Farmers of southern Tamilnadu and Pondicherry spread over a distance of over 500 to 600 km distance interacted with experts via the high bandwidth video link available with MSSRF. The VC went on for over 4 hours with questions ranging from suitable varieties to post harvest management. Farmers found it as good as face-to-face interaction with the experts. It also encouraged farmer-to-farmer interaction. It was a new experience for the experts as well. They appreciated the tool as it provided them with a wider reach and better impact. Experts were able to examine the affected specimens displayed by farmers via video and diagnose with a fairly high degree of accuracy. They however admitted that a short training on how to interact via video would facilitate better articulation with their remote clients. This videoconference covered about 100 farmers representing on 25 farmers on an average from each center.

The second VC was organized in mid-2005 for dairy farmers of 30 village clusters of the same districts. This interaction covered animal health and management issues besides feed and fodder issues. Experts represented the International Livestock Research Institute, Indian Council of Agricultural Research and the Tamilnadu Veterinary and Animal Sciences University. The interaction lasted for over 5 hours. This VC also addressed over 100 farm families from across Tamilnadu and Pondicherry States in South India.

Employing videoconferencing for facilitating farmer-experts interaction has brought out several additional benefits. The questions and answers recorded during the VC serve as high quality content. These offer excellent opportunities to develop need-based content such as FAQs on groundnut and livestock management that could be immediately deployed for use in ODL. Videoconferencing also facilitated discussion on some serious issues involving water, which is very scarce in the areas covered. For instance, continued engagement of farmers on judicious use of water led to several farmers making modification in cropping preferences. They shifted to less water demanding crops such as maize and pulses from water-intensive paddy cultivation.

(3) The Parivatan.net

Maharashtra Knowledge Corporation Limited (MKCL) initiated Parivartan (meaning change) Network Program (www.parivartan.net) . This program involves the establishment of network of RKCs in order to disseminate information and deploy services useful for farming community. The pilot program is being executed in Pune and Ahmednagar districts in Maharashtra S tate in the western part of India.

www.parivrtan.net is an official web portal site for this program and has around 1200 pages of agricultural content in the regional language (Marathi) hosted on it. This content is sourced from various organizations like ICRISAT and other institutions and individuals engaged in knowledge generation. Market related data is also collected from agricultural produce market committees on daily basis for generating market advisories. Experiments in developing agricultural content in various forms like text, audio, video, PowerPoint presentations and animations, FAQs, Interviews have been carried out. Around 110 Microsoft PPT presentations on various agricultural subjects are available online for users to view and download.

An innovative concept of web-based logical gathering of content objects called Knowledge Capsule is used online. Knowledge capsule is a collection of reusable learning objects belonging to specific topics. These capsules consist of objects like text information, articles, animated stories, streamed video, audio clips, web ring and other details.

Parivartan Network web portal been also leading an effort for generation of dynamic content in the form of questions and answers. Queries asked by farmers are answered by practicing experts from various organizations, which in turn lead to rich content

developed out of farmers' real experiences.

Development of Locally Relevant Content

We also conducted experiments for developing location specific content from generic information. The Maharashtra Knowledge Corporation Ltd (MKCL) has developed on trial basis a framework for extracting locally relevant content from generic information by using ICT as an interface. The VASAT used ICRISAT research results to develop learning modules in English using methods generally adopted in ODL programs. The MKCL translated VASAT course on coping with drought to Marathi (local language of Maharashtra) and used these in a program to bring awareness on drought among 30000 college studen t s during December 2004- June 2005 in several locations in the western part of the State of Maharashtra . The MKCL experts adopted the content to suit the local milieu and added a voice over in Marathi for greater effect of learning. The learners accessed the modules as off-line CD's in rural camps organized in scores of locations. This is another example of transformation of generic content into locally relevant modules using ICT.

Summary

India's farming sector needs strong knowledge support in order to stay competent. The existing extension system with its conventional training and capacity building approaches is not able to cater to the diverse needs of the farming sector. Our experience suggests that timely and need-based information support can empower farm families to better livelihoods. Shifting of cropping preferences -from the water-demanding crops to water-saving ones- by some of the farm families can be attributed to the change in behavior pattern brought about due to the process of engagement. Thus, rural knowledge centers can become effective distance learning centers and facilitate the processes that cater to the information needs of the farm families for longer periods. They also can aid in non-formal learning in agriculture and allied areas that involve learning cycles that take longer time periods for completion. Information and communication technologies such as the Internet and videoconferencing have tremendous scope to engage farm families in life long learning. Local adaptation of content by building local capacity can go a long way in promoting distance education in non-formal sector. With the reach and spread of rural knowledge centers all set to increase in the coming months, the scope of RKCs as distance learning centers is far greater for promoting better rural livelihoods. One of the prime concerns of RKCs is their sustainability. The key is the development of public-private partnership s to sustain RKC's who need to generate variety of services to be deployed for the rural communities. It is the blend of a v ariety of agricultural and non-agricultural services will help make RKCs sustainable as information service providers.

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