

# Toolkit for setting up Rural Knowledge Centres (RKC)



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**Rural Knowledge Centres**  
**(RKC)**

As Experienced through the  
Information Village Research Project and  
Jamsetji Tata National Virtual Academy

M S Swaminathan Research Foundation

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# Introduction

## Rural Knowledge Centres - the need

India is largely rural with more than 60 percent of our population dependent on agriculture and allied activities. Ecologically sound agriculture is knowledge intensive. Farm women and men 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 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 alimentarius standards), and trade (i.e. prices in home and external markets) literacy movement. 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, which is time and location specific. There is also need for kn technology enablers on local agro-ecological and socio-cultural conditions of each village, and also relating to various farming methods and techniques. Apart from information related to farming, rural women and men urgently need access to healthcare information. Increased health expenditure is an important cause of farmers' indebtedness, leading occasionally to suicides. Information on the health status of livestock and poultry, on-farm and off-farm livelihoods and market-led entrepreneurship opportunities for the poor and the marginalised in rural India need attention. There is also need for promoting functional literacy among the adult illiterate and making learning joyful for the young through interactive pedagogic methodologies.

All this can be effectively done through a network of Rural Knowledge Centres (RKC)s across the country that focus on skill building at the local level and information empowerment with the help of contemporary Information and Communication Technology (ICT) tools.

**Vision:** To harness the power of ICT in the knowledge, skill, economic and social empowerment of rural families based on the principle of reaching the unreached and voicing the voiceless.

## Guiding Principles

Three points are very important to start Rural Knowledge Centres, based on our experience:

- First, it is a people-centred programme based on community ownership. The community as a whole must endorse it.
- Second, it must take into account the local context and the information needs of the local people. Only then it can provide useful demand-driven services. Although we may use a variety of technologies in gathering and reaching the information, the programme is not meant to demonstrate the power of technology. Usefulness is more important than the use of latest technology.
- Third, the programme should be inclusive and not be associated with one group or caste; it should allow everyone to take part. The ICT enabled Knowledge Centre should be located in a public space, say in a village school or panchayat building, to ensure social inclusion in access.

The principles of social inclusion, gender equity, reaching remote areas and remedying regional imbalances should be built in the design of the RKC.



# Organizational Considerations

## Step 1: Social Mobilization and Need / Demand Assessment

Before setting up of these RKC's, the staff and volunteers of the implementing agency should get accepted by the people. Unless the local people accept the implementing agency and are ready to work with them, the programme cannot take off. The people should be ready to work with them. Once the implementing team establishes a good rapport with a wide cross section of the local community, it should carry out largescale consultations with the local people. Information needs of the community and the people's familiarity with different technologies and communication channels should be assessed through PRA. A bottom-up approach of involving the users themselves in assessing their needs is necessary to make the programme more effective. Implementing agency should collect information on district and village profiles, household details, economic activity of the village, maps, existing infrastructure like govt. institutions, primary health centres, educational institutions, libraries, extension centres, etc. Implementing agency should collect information on people living below the poverty line. The needs of different people could be classified into needs of women, men, children, the poor, landless etc.

Implementing agency should also collect information on information flow among different players in the rural community, profiles of underprivileged communities, market information, details of artisans and small merchants, problems of landless laborers and local interaction patterns. This will help the implementing agency to develop micro planning for the village.



## Step 2: Community Participation

Community participation is vital in all rural, community-based projects. The right community champions often play a critical role in ensuring the project's success. They are the prime movers in the community. Community participation should be broad based and representative, and cut across social and economic status. Local community participation should start from the conceptualization stage and be sustained throughout.

Conscious efforts should be put in to build multi-stakeholder partnerships, but one needs to be careful in selecting the partners to engage with.

PRA should be used to assess the extent to which the community is willing to go in supporting the local centre, by way of making in-kind or cash contributions. The local community should be encouraged to select a group of individuals for managing the local knowledge centre.



### Step 3: Connectivity

The most feasible and cost-effective system should be used. Connectivity and Content should receive concurrent attention of RKC's. But these are not enough. They should be used to satisfy the local communities.

New technologies, especially wireless, are becoming increasingly important because they are easier to deploy and cost less than conventional technologies. What already exists often determines what options you actually have and the options are often limited. Telephony is still very relevant for rural access. Adequate technical skills are required for ensuring/maintaining a robust connectivity infrastructure. Internet technologies offer new options to provide cheaper and more flexible services (e.g., VoIP).

Constraints must be removed on the basis of a malady-remedy analysis; for example, wired and wireless technologies could be used where telephone connections are not adequate or satisfactory. Similarly, solar power can be harnessed where the regular supply of power is irregular. The approach should be based on the principle that there is a solution that can be implemented for every problem.

Economies of scale matters – connectivity is very expensive but can be cheaper if shared. However, emerging technologies (such as VSAT, direct TV) are changing many of these assumptions. Rural communities are typically not attractive for profit-oriented telcos – last mile solution must be self-financed in many cases. One should assess the various available technology options for the last mile and the first mile (wireless, satellite, VoIP, fibre, etc), and implement those that are cost-effective and reliable. Building a resource for the technical know-how will be useful.

Also, one should be alert to new technologies that are being developed all the time, and often these are less expensive and far more efficient than older technologies. That is one reason why we can be optimistic about the future. Many companies, including HP, Intel, IBM, Microsoft, are now investing in developing low-cost technologies, especially targeting the poor of the world. Also, higher educational institutions – such as University of California, Berkeley, MIT Media Lab, Carnegie-Mellon University, IIT, Chennai, and IISc, Bangalore – are developing affordable ICTs relevant to Rural Knowledge Centres. In India, we are fortunate to have organizations such as ISRO and TCS, which are keen to lend a helping hand to the ICT4D movement.



## Step 4: Content

Creation and updating of relevant content to suit local needs is a key factor in the RKC programme. The information provided should be demand driven and should be relevant to the day-to-day life and work of rural women and men. Also, semi-literate women should be accorded priority in training to operate the centre, since this is an effective method of enhancing the self-esteem and social prestige of women living in poverty. Packaging of appropriate content (e.g., in local languages) for specific community needs and choices is an important activity of the centre.

Content should be delivered in both conventional and electronic means (e.g. use not only Web sites, but also use community newspaper, radio, and announcements over public address system). Merely providing information is not enough. Knowledge dissemination should be linked to access to the inputs needed to apply the knowledge for economic activities. One has to be strategic in generating or procuring content in view of the potentially high cost involved. Equally important as understanding the content is to make the appropriate action based on the information provided.

The convergence between radio and Internet provides useful examples of how to create local content, relevant to local needs but also to local culture, and provide this content in local languages.

It is also important to address the need for demand driven and value added information that is time and location specific. There is also 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. Information flow should be a two-way process. Not only can the rural poor get answers to their queries from experts through the Knowledge Centre, but they can also inform

the experts what they need so the experts can reorient their research.

RKCs can provide three types of contents namely, generic (health, government schemes, local news, employment news, etc.), dynamic (market, school examination results, weather, etc.) and timely information (wave height, potential fishing zone details, etc.).

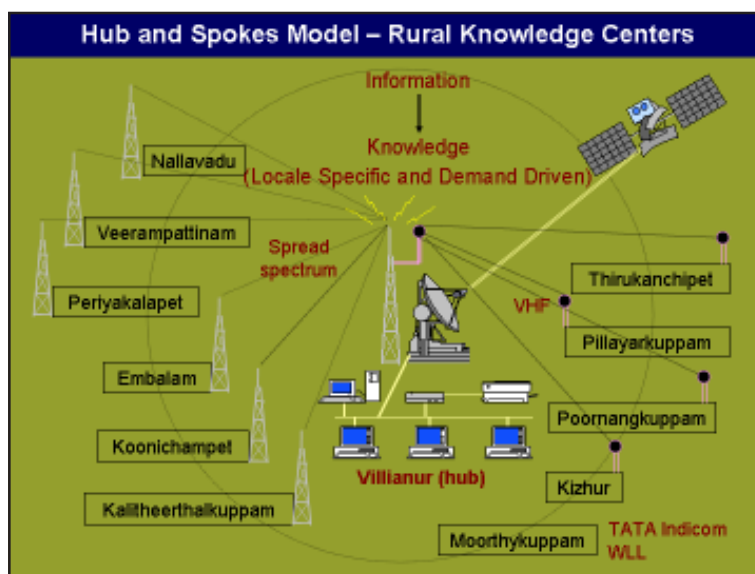


## Step 5: Hub and Spokes Model

In this model, pioneered by MSSRF, RKC's have both connectivity and content. This model is designed to empower rural families with new knowledge and skills based on the Gandhian principle of *antyodaya* (i.e., unto the last), where the empowerment starts with the poorest and the most underprivileged women and men. In this model, the local population will have a sense of ownership of the RKC. It will be client managed and controlled, so that the information provided is demand and user driven. The local population should be willing to make contributions towards the expenses of the RKC, so that the long-term economic sustainability of the programme is ensured. Contributions in cash or kind generate a sense of ownership and pride and create an economic stake in the operation of the centre. The local communities should be able to run the centres when the implementing agency moves to other regions. The hub centre and RKC's should act as a rural library and much more.

Each hub centre may cover 25 to 30 villages within a radius of 60 km. Each hub centre will consist of at least three networked computers, one scanner, two web cameras, internet facility, one printer, one digital camera, solar backup facility, etc.

The RKC's should be located in a public place and not to be associated with one group or caste; should allow everyone to take part. Each RKC's should have two-way communication with hub. RKC will consist of two to three computers [depending on village population / needs], a web camera, phone, a printer, notice board, etc.



## Step 6: Management, Monitoring and Evaluation

Implementing agency will form a management committee consisting of several experts, representatives from NGOs and members from the rural community. This committee will review the programme periodically.

Involving youth in the management of the RKC's and decision-making is very important. Managers should be familiar with the technology, willing to learn and have an interest in the needs of the community. The management processes should be flexible, collective and where necessary hierarchical with individual accountability. Community's role in management should typically be advisory; functional management by the community is not necessary. It is important to identify young volunteers with leadership qualities and good communication skills to be the link with the community and set into motion an interactive two-way process of information sharing; more importantly, these volunteers should enjoy the confidence of the community.

The implementing agency should conduct periodic impact assessment based on surveys, and establish a virtual network of policy makers, researchers, educators, service providers and farm and fishing communities. It will be necessary to carry out case studies on empowering women and the underprivileged sections of society, and to monitor the impact of the knowledge centres on government policies and relationship [Example: transparency of govt. schemes], the economic and social status of the community, gender equity, etc.



## Step 7: Services [Multipurpose Centre]

RKCs will act as multi purpose centres. Before starting the services RKC animators should have detailed discussion with the community [at farm fields, near the shore, market, tea shops, temples, bus stands, panchayat meetings, govt. training programmes, primary health centre, schools, etc.]. The hub centres will create a question bank based on interaction meetings with rural community and policy makers. After that animators may segregate the services based on local community needs by subject as well as classify them as free and fee-based services

- Agriculture [crop production (seed varieties, irrigation etc.), availability of different seeds, different seasonal crops, pest details, market intelligence, weather information (harvesting time, sowing time, etc). training on soil health care, water harvesting and management, crop and pest management, codex alimentarius for food safety standards etc.]
- Tools (procurement, marketing, hiring), pricing, financing (micro credit), crop insurance, weather reports, disaster warnings; broadcast local news, organize interaction meeting with experts and rural community, initiate labour information network, etc.
- Animal husbandry [animal health & veterinary services, finance & schemes, animal breeds, production, livestock development (markets, vaccine, diseases, different breeds, veterinary centres details, etc.)]
- Fisheries [wave height, potential fishing zone details, procedure for claiming their entitlements, schemes for induction of new technology / modernization of seafood industry, schemes for augmenting export production (culture fisheries), scheme for development of capture fisheries, development of ornamental fisheries, schemes for quality improvement, assistance for marketing and market promotion activities, hygiene and quality maintenance, promotion of seafood export, insurance schemes, etc.]
- Citizen services [procedures, documentation, forms, contact directory, grievance, schemes,



birth and death certificates, matrimonials, government schemes, government entitlements, etc. [Household entitlement cards], getting of ration cards, community certificates and other government services, STD, PCO, CYBER CAFÉ, FAQs]

- Health [vaccination schedule, especially pregnant women and infants, family planning, medicines, ambulance services and transportation, hospital and primary centres information, blood bank, life saving drugs, doctors database, appointment with doctors, tele-health, medicines management system for rural PHC]
- Education [examination results, education abroad, schemes/scholarships, counselling/FAQs, syllabus, school/college/university details, training in soft ware and hardware for the rural youth, education counseling and issuing hall tickets for different examinations]
- Women [women's rights, procedures to be followed in lodging a complaint, land related issues, vocational course details for women, health issues, various marketable cottage products, etc.]
- Land/property [land records, property transfer, property tax, property rules & regulation, land income certificates]
- Employment [job opportunities, registration, self employment schemes]
- Social welfare [schemes, directory of NGOs, citizen's rights]
- Utility services [applications, outstanding bill statement, bill collection on various utilities, grievances]
- Business [procedures, documentation, forms, schemes (subsidy loans), compliances with rules & law, desk top publishing]
- Panchayat matters [births, deaths, utility connection (water, electricity etc.), property transfer, tax rules, tax payments, license & concessions, permits]
- Tourism and transport [room availability, booking, booking of long distance bus



tickets, information on transport routes, sight seeing places]

- Entertainment [video, cable TV], environment [pollution control information, forms]
- Consumer welfare [consumer rights, consumer courts, legal assistance], etc.
- Establishing a virtual network of policy makers, researchers, educators, service providers and fishing communities

The above services may be delivered to the community through community newspaper, internet, public address system network, farmer / fisheries advisories through phone, face to face through knowledge workers, notice boards, community radio, village meetings, publications, farmers / fisher folk / self help groups, cable TV, video conferencing, etc.



## Step 8: Partnership

In every programme, harnessing the power of partnerships is very important. It is only through partnership RKC's can bridge the gap between "Scientific know-how" and "Field Level do-how. RKC's will bring more partners regarding agriculture, animal husbandry, education, weather, health, business, law, etc.

Apart from community ownership, the second most important ingredient for success of ICT-enabled development programmes is building multi-stakeholder partnerships. If the main function of a Knowledge Centre is to provide authentic and reliable information, the question is, who can provide such information? Often it is the experts working in academic and research institutions and extension centres. It is therefore imperative to forge partnerships with experts – both individuals and institutions. Also, if the development is to be holistic and integrated, we cannot work in isolation. We have to bring in the expertise and take advantage of the knowledge and skills of a wide range of people and organizations as well as pay heed to the indigenous knowledge and traditional skills of the communities we work with.



## Step 9: Capacity Building

The RKC will be set up and managed by ICT Self-help Groups / Grassroots institutions (local panchayats) / Youth Clubs / Farmers Clubs / Fishermen Co-operative Societies comprising both women and men. Capacity building of the above groups and human resource development are essential for success. This will ensure the demand-driven nature of the information provided. Involving local youth in the management of the RKC and decision-making is very important. Managers should be familiar with the technology, willing to learn and have an interest in the needs of the community. At least one woman and one man can be selected from each village and trained as community information managers. They can be made Fellows of the National Virtual Academy (NVA). (The M S Swaminathan Research Foundation with support from the Tata Trusts has established the Jamsetji Tata National Virtual

Academy for Rural Prosperity). Several agencies have agreed to support the training of this cadre. These rural academicians affiliated to Panchayati Raj institutions, will be the information providers for the local community and will help to reach the unreached and voice the voiceless.



The RKC has to develop linkages with a range of rural service providers and handle services on behalf of both Government and private sector. Some of these services would be fee-based and generate revenue for the Centre. Collaboration with private sector and industry could be on the pattern of production on contract / franchise / buy-back arrangements. Decentralized production should be supported by key

centralised services (e.g. e-commerce). The active participation of this elected women and men members of local bodies is crucial for the success of this movement.

RKCs may also provide several micro enterprises training programmes such as production of *Trichogramma chilonis*, *Trichoderma viride*, vermicompost, oyster mushroom, products from agricultural waste (e.g. handmade paper and board from banana waste), backyard ornamental fish breeding, sea farming, cage fishing, sea weed farming, aquaculture estates, pens culture in estuaries, edible oyster production, ornamental fish growing, training and creating eco-jobs like organic horticulturists, climate change analysts, energy specialists, aqua-cultural veterinarians etc., generating awareness on the value of natural resources like mangroves, coral reefs etc., training for fish preservation and export will be provided for aged fishermen and fishing community women. The knowledge centres can provide computer aided learning for the rural children, spreading quality literacy among rural families with reference to sanitary and phytosanitary measures and codex alimentarius food safety standards, markets, etc.



## Step 10: Sustainability

Our RKC programmes are on the road to “true sustainability”. While many are championing “business models” for telecenters, the bottom line being if a telecentre or radio station makes money, then it is sustainable, there are other priorities, such as social sustainability and the impact on social change. For us sustainability deals with a wider range of issues. Let us look at ownership, for example: community ownership is key to the sustainability of a community communication project. However, this ownership can have multiple facets. Having a legal title to the facility is one of these, but it is not sufficient to guarantee sustainability. Having managerial responsibility, control over content, and a say in the project’s future are equally important.

RKCs will create long-term, self-sustaining solutions, which reflect local needs and require local initiative and entrepreneurship, so it will fuel the creation of additional local business and community enterprises.

RKCs need to be made available in far larger numbers and information exchange must be available at far lower costs if recent ICT advances are to have a significant impact on development for the world’s poorest people.

The business model of RKCs is based on the belief that local entrepreneurs and communities will find new and innovative ways to use these appropriate technologies to improve both their life chances and their domestic economic situations, and that by putting more relevant local content within reach of more people, business at local public access points will be demonstrably increased. . Typically therefore, an RKC will offer a range of free public good services as well as fee-based services.

An interesting application of ICT in strengthening rural livelihood (i.e. income) security is its role in promoting linkages with credit institutions and private sector industry willing to get products manufactured by rural self-help groups on a franchise loans. This has opened up opportunities for spreading a large set of promising S & T based “franchises” that banks could support through loans.

The RKCs are vital for creating sustainable rural micro-enterprises in the area of agriculture, food processing, animal husbandry, fisheries, sericulture, handicrafts, rural industry and even in IT-based services. The RKCs are all the more vital in developing a rural to urban e-Commerce service network.

Through NetPhone and VoIP, RKCs will enable rural community to contact their relatives, friends and traders within national and global level and generate some income.

Links with journals, press and private companies can fetch low-cost page design work. RKC's can be converted into Local Service Providers (LSP) to provide Internet bandwidth for private companies, hospitals, education institutions and individuals with the help of banks and wireless companies. Another option is to link RKC's with cable TV operators, and get more advertisements from agricultural product companies.

In a country of over one billion, there are hardly about 5 million computers. 75-80% of these computers are used in offices. Hardly 20% is available for use in development. Therefore, there is no time to relax on the ICT front. RKC's will provide extensive hardware training for village community and allow them to provide low-cost services for companies, institutions and individuals. The RKC's can distribute SMS [local content] through cell phones to different kinds of people like academicians, traders, doctors, students, etc. RKC's will train rural youth for web-based training through distance learning.

RKC's will train and transform village youth into Database Managers, Administrative Assistants, Desktop Publishers, Systems Analysts, GUI Designers, Icon Artists, Data Entry Operators, Software Developers, Programmers, Web Designers and Typists.



## Conclusion

In a country of over one billion, there are hardly about 5 million computers. 75-80% of these computers are used in offices. Hardly 20% is available for use in development. Therefore, there is no time to relax on the ICT front. RKC's can open a world of information and access to village communities and allow them to provide low-cost services for companies, institutions and individuals.

RKC's can distribute SMS [local content] through cell phones to different kinds of people like academicians, traders, doctors, students, etc., train rural youth for web-based training through distance learning.

RKC's can be equipped to train and transform village youth into Database Managers, Administrative Assistants, Desktop Publishers, Systems Analysts, GUI Designers, Icon Artists, Data Entry Operators, Software Developers, Programmers, Web Designers and Typists. The possibilities are infinite.

In sum, the RKC programme to be successful one needs to address and ensure:

People focus and community ownership and

Multistakeholder partnerships and nationwide networks.

One should manage content creation, gathering, validation and dissemination, manage technology and connectivity and manage delivery of content on time.

Going beyond ICT, content and connectivity, knowledge centres can give a human touch to the whole programme of holistic development. Knowledge Centres should be seen as a means cutting across and facilitating development initiatives at the grassroots level.