



e-Arik

For Empowerment...

ICTs for Agricultural Extension



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July to December, 07

A Half yearly News Letter of the DSIR, MoS&T, GoI Sponsored Research Project and Implemented by the College of Horticulture and Forestry, Central Agricultural University, Pasighat, Arunachal Pradesh

About the Project

India's North-East is endowed with rich natural resources for development. The average rainfall in the region is highest in the country. However, the region has exhibited most backwardness. The economic upliftment of the entire region depends, to a large extent, on the progress of agriculture sector. The non-income poverty in terms of inadequate information on advanced farm technologies, market intelligence and rural development schemes create the income poverty in the region. The limited technical manpower, lack of transport and communication facilities, inadequate financial support to the technology transfer and less infrastructure facility create huge technological gap among the rural tribal farming community. Further, difficult terrain, mountainous periphery and frequent natural disasters hinder the development of the region. Due to non-availability of improved technological information to the tribal farmers, agriculture becomes less remunerative and it is also creating food insecurity problem. In this existing scenario, it is expected that application of Information and Communication Technologies (ICTs) in agricultural information provision to the tribal farming community of Arunachal Pradesh State of North-East India will help to foster the socio-economic empowerment of the tribal farming community.



Yagrung Village

Hence, e-Arik ("Arik" means "Agriculture" in the *Adi* tribal dialect of Arunachal Pradesh State), a research project to experiment the application of ICTs in agricultural extension services provision and find out its impact among the tribal farmers has been implemented in "Yagrung" village of East Siang District of Arunachal Pradesh State. This two year research project is funded by the Technology Information Facilitation Programme (TIFP), Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India.

The project proposes single window system for the improved agricultural information and technology delivery, all time expert consultation on agriculture production, protection and marketing aspects through ICTs. The project also promises to provide training on ICTs and capacity building among the rural tribal children, youth, women, farmers, school teachers and others.



Village Knowledge Centre

"Arik" means "Agriculture" in the *Adi* tribal dialect of Arunachal Pradesh State

Farmers' Information Needs Assessment

Focussed Group Discussion

At the beginning of the project, a number of formal and informal focussed group discussions on "information needs" and "use of ICTs" were undertaken with the multi-stakeholders of the village such as: village tribal council, farmers, ATMA self help groups, anchal samiti members, women farmers, school teachers, village youths, students, officials of developmental departments, agricultural scientists and extension personnel.



Group Discussion with Villagers

Farm Family Survey

Data on farmers' information needs were collected by employing pre-tested structured interview schedule. Information needs on broad areas like agriculture, education, health, governance and other areas were enumerated. Further, crop-specific information and technological needs were also identified from the selected 60 farmers of three villages.



Information Needs Assessment

Participatory Rural Appraisal (PRA)

The Participatory Rural Appraisal was conducted with 60 farmers of three villages to understand the farming situation, information needs and farmers' preference on ICTs for the agricultural communication. The PRA methods such as village resource map, transect walk, seasonal calendar on agriculture crops, farm operations, disease and pest occurrence, ranking on farm information needs and preference on ICTs were undertaken by the farmers with the help of PRA facilitators.



Participatory Rural Appraisal

Survey on ICT Indicators

A structured interview schedule was developed based on the International Telecommunication Union (ITU) and United Nations Conference on Trade and Development (UNCTAD) identified indicators on the "Access to", "Usage Indicators" (on Age, Gender, Education, Frequency, Purpose) and ICT infrastructure information was collected from the individuals and households.



Village Resource Map



Crop wise Information Needs Assessment



ICT Preference of Farmers

Project Activities - I

Field Visit

The project staff regularly undertake farmers' field visits and observe the crops. The project staff interact with the farmers on crop production, protection and other related aspects. Based on the observation, the project staff provide timely advice to the farmers. By the digital camera, the project staff document the nutrient deficiency, pest and diseases symptoms of the crops.

Pest and Diseases Diagnosis

The digital photographs are sent through email to the scientists. The multi-disciplinary team of scientists diagnose the problem.

Digital Documentation and Expert Advice

The farmers' crop history is digitally documented with the expert advice. The expert advice is mailed to the Village knowledge centre and passed on to the concerned farmers by the project staff.

Scientist-Farmer Interaction

For better credibility on expert advice regular field visits are undertaken by the project scientists. On farm advice on crop production and protection aspects discussed with the farmers.

Farmer-Farmer Communication

From one village one farmer was identified as a farm resource person. The identified farmer is trained on recent advances of farming and encouraged to disseminate the recent advanced farm information to the other farmers. This approach helps to disseminate the farm information in *Adi* dialect.

Demonstrations

The farmers' need based demonstrations on pest and diseases management measures are undertaken regularly. For example, citrus fruit drop, trunk borer and soybean leaf folder control measures are demonstrated to the farmers.

Multi-Media Shows

Regular multi-media shows on diverse aspects of farming are arranged to create awareness and motivation among the farmers.

Farm Inputs Familiarisation

Bio-fertilizers, organic pesticides and fungicide samples are kept in the village knowledge center for the familiarisation among the farmers.

Computer Training

ICT awareness lectures, regular computer training are underway for the students, village youth, farmers and school teachers. The computer training is handled by the project staff, computer trained college girl student as a volunteer from the village and also a computer instructor from the private computer centre, Pasighat.



Field Diagnosis by the Project Staff



Expert Field Visit with Farmers



Farmers Viewing Multi-Media Show



Computer Training for the Educated Youth



High School Teachers Undergoing the Computer Training

Building the Digital Resources for Farmers



A web portal for the farmers is under construction. The portal proposes to provide information on agriculture and rural development, education, health, governance and other related areas. Further, weather link, market information, announcements, farmers log in, farm decision support system and FAQs is under construction.

Agriculture and Rural Development

Agriculture section provides information on khasi mandarin cultivation and management aspects, boardeux mixture preparation and their uses in khasi mandarin orchard, powerpoint slide show on integrated diseases management, post harvest technology of khasi mandarin, production and post harvest management of ginger. The e-Arik portal also provides information on developmental departments such as; agriculture, horticulture, animal husbandry and veterinary, fisheries, farmers training centre, state soil testing laboratory, district rural development agency.

Education

Education section provides information on central government scholarships for ST students such as; scheme of post metric scholarships, central sector scholarship scheme for top class education for ST students, research fellowships and national overseas scholarships.

Health

Health section provides preliminary information on Aids awareness and malaria awareness.

Governance

Governance section provides application forms for issue of income certificate, ST certificate, trade licence and building assistance.

Extras

Extras section provides information on Telephone directory of East Siang district.

Village Agricultural Library



Multimedia CDs and farm publications were collected from the Indian Council of Agricultural Research (ICAR) Complex for the North- East Hill Region, Central Agricultural University (CAU), KVKs and other agricultural & rural developmental departments. The farm publications and CDs were kept in the "Agricultural Library" at the Village Knowledge Centre, Yagrung village, for the ready reference of the farmers and others.

Market Information

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Current Market Rate at Pasighat, So-Arik Project (Surveys) & Revised local market rate of Fresh Items (i.e. Meat, Fish, and Vegetables) as fixed by District Rate Board as on 06.08.2006 (Approved by the Deputy Commissioner).

Updated Date: 13.12.2007

Item	Current Market Rate (Rs./kg)	Comments
Dal	14	Nil
Rice	20	Nil
Red rice - KRT	20	Nil
Red rice - Normal	18	Nil
Red rice - High	15	Nil
KT	20	Nil
Green	20	Nil
Maize	20	Nil
Mustard	14	Nil
Kaibung	17	Nil
Beanyal	18	Nil

Weather
Market Information
Announcements
Farmers Log In:
Sign Up / Log In
Decision Support System
FAQs

Market survey on agricultural produces is regularly conducted by the project staff and the market information database is regularly updated. The database provides market information on rice, dal, fresh vegetables, local indigenous vegetables, fruits, meat and fish.

Project Activities - II

Farmers Training and Demonstrations

Regular training and demonstrations were conducted on crop cultivation and management aspects of major crops such as, paddy, khasi mandarin and other crops such as, pineapple, maize, soyabean, sweet potato and colacasia.



Group Discussion and Awareness Meetings

Weekly group discussions and awareness meetings on need based topics by the project staff with the farmers were conducted at the farmers field or e-Arik- Village Knowledge Centre or village common places.

Village Advisory Committee Meeting

Representatives from Village tribal council members, farmers, students, and project staff reviewed the progress of the project. They also formulated the action plan for the next cropping season.



Farmers' Self-Help

Fifty farmers from Yagrung, Tekang and Kongkang villages constructed Adi tribal's traditional type "Farmers Training Centre" in the premises of the e-Arik-Village Knowledge Centre, Yagrung. The training centre was constructed with every house contribution of bamboo and toko leaves.

Computer Training

Regular computer training was conducted for school students, village educated youth, farmers, and school teachers. Second batch of 16 students are undergoing the computer training.



Market and weather information

Market survey was conducted regularly and market information was updated in the project portal. Further, market, weather and information related to the farmers training programmes were regularly displayed in the notice board at the Village Knowledge Centre.

Cultural Programme

After completion of the farmers' training programmes, meetings, group discussion and other activities, as per tribal tradition, Adi tribe's traditional dance "Ponung" was performed by the self-help group.



Publications

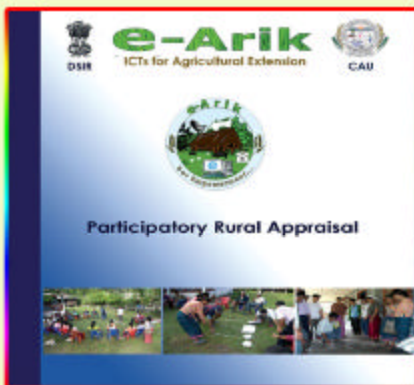
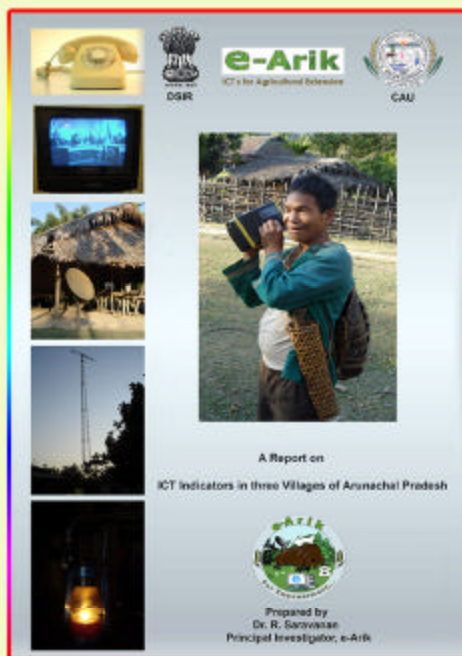


A Report on Farmers Information Needs Assessment

A survey was conducted among 60 farmers of Yagrung, Tekang and Kongkang villages of East Siang District, Arunachal Pradesh State. It is reported that an overwhelming majority of the tribal farmers are not having access to the advanced agricultural information. Considerable proportions of the farmers are having regular radio listening behaviour for getting farm related information. Most of the farmers require information on all farm based activities. Pest and diseases management information for paddy and khasi mandarin crops were demanded by a greater proportion of farmers. Through Participatory Rural Appraisal, farmers analysed their resource availability, constraints and opportunities for the sustainable farming. Further, they diagrammatically depicted the seasonal variation in crop cultivation, inter cultural operations, pest and diseases occurrence, harvesting and market price.

A Report on ICT Indicators in three Villages of Arunachal Pradesh

A report on ICT indicators on the "Access to", "Usage indicators" (on age gender education, frequency and purpose) and ICT infrastructure. Information was collected from the individuals and households and report was published. Findings indicated that four-fifths of rural population possess radio, and nearly one-third of farmers are having TV and fixed phone line. However, very few possess cellular phones, with no one having computer and internet facility in three villages. More than half of the households (56 per cent) are not connected with electricity. Very few number of students and degree holders are aware and also using the internet, that too, occasionally. Among ICTs, radio is widely possessed (80 per cent) and used for getting agricultural information.



A Multimedia CD on Participatory Rural Appraisal

Multimedia CD on Participatory Rural Appraisal (Duration: 17 minutes) is prepared. First part of the CD provides glimpses of e-Arik project activities such as; project familiarisation, project staff / scientist field visits, farm advisory services, digital documentation, digital information dissemination, village agricultural library, multi media shows and computer training. Second part of CD has Participatory Rural Appraisal exercise by the farmers and facilitators. PRA methods such as; village resource map, crop wise information needs assessment, farm seasonal calander, household ICTs availability and ICTs preferences are documented.

e-Arik: One Step Single Window System for Agricultural Extension



For More Details

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