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A Report on Farmers Information Needs Assessment



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**A Report on
Farmers Information Needs Assessment**

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Preface

The Arunachal Pradesh State of North-East India is blessed with rich natural resources. The fertile soil and abundant water resources provide ample scope for profitable farming. However, inadequate information access on advanced farm information and technologies, agriculture exhibits lowest productivity and farming becomes less remunerative. Hence, there is urgent need to assess the farmers' information needs. Based on the information needs assessment, appropriate agricultural information and technologies need to be delivered for the overall development of the farming. In this direction, an information needs assessment survey was conducted among 60 farmers of Yagrun, Tekang and Kongkang villages of East Siang District. Based on the findings, group discussions, demonstrations, training and multimedia shows, lectures through radio, information through internet will be planned and implemented in phased manner through the DSIR - TIFP sponsored research project titled "e-Arik: ICTs for Agricultural Extension" at Yagrun and near by villages of East Siang District.

Further, I sincerely hope that this report will serve as a reference material to initiate similar surveys in the state by the different institutions, departments and NGOs involved in the agricultural technology transfer process.

Pasighat

October, 2007

R. Saravanan

Principal Investigator, e-Arik

Executive Summary

Access to the appropriate agricultural information is a difficult task for the farmers of North-East India. Due to inadequate dissemination of advanced farm information and technologies agriculture exhibits low productivity and creates food insecurity problem. In this connection, a research study was conducted to assess the farm information input pattern, information needs and Information & Communication Technologies (ICTs) preference of 60 farmers of Yagrung, Tekang and Kangkong villages of East Siang District, Arunachal Pradesh State was conducted during August and September, 2007. From the findings, it is concluded that a overwhelming majority of the tribal farmers are not having access to the advanced agricultural information. Considerable proportions of the farmers have 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 farming. Further, they diagrammatically depicted the seasonal variations in crop cultivation, intercultural operations, pest and diseases occurrence, and farm produce harvesting. Further, the PRA exercise indicated that cent percent of farmers possessed radio. Most of the farmers preferred internet, radio, and television for getting agricultural information in the village knowledge centre.

INTRODUCTION

Access to the appropriate information for the agriculture and rural development becomes difficult task for the farmers of North-East India. Due to inadequate scientific farm information delivery to the tribal farmers, agriculture exhibits low productivity in North-East India in general and Arunachal Pradesh State in particular. Disappointing scientific information dissemination makes the farming become less remunerative and also creates food insecurity problem. Further, the upliftment of tribal economy mainly relies on the agriculture production. To increase the farm production, the tribal farmers need to be informed on recent scientific farm innovations. Farm information and technology dissemination to the tribal farmers provide opportunities for their self-development, improve existing knowledge, skills and enhance their capability. In this connection, ICTs hold lot of promise to deliver agricultural knowledge to the tribal farmers. In order to provide agricultural extension services through Information and Communication Technologies (ICTs), it is necessary to assess the information needs of the farmers so as to prepare and deliver specific messages or technologies and also to develop ICT based training modules as per the farmers' requirements. Hence, a research study was carried out with the following objectives;

1. To know the information input pattern of the tribal farmers
2. To find out the tribal farmers information needs
3. To understand the tribal farmers media preference

METHODOLOGY

Locale of the Study: The study was conducted in the selected three villages namely; Yagrung, Tekang and Kangkong of Pasighat circle in East Siang District of Arunachal Pradesh state.

Selection of farmers: Sixty tribal farmers were randomly selected from three villages for the individual household survey and 60 tribal farmers were randomly selected to conduct the Participatory Rural Appraisal (PRA).

Data collection: Data were collected by using pre-tested structured interview schedule and PRA methods.



Fig. 1 Map Showing the Study Area

Description of Study area: The selected villages are located in the Pasighat circle. The average annual rainfall is 440 cm. Generally, rocky sandy loam soil with the P^H ranges from 5.0 to 6.5 and sub-tropical climate condition favours cultivation of a wide range of crops. The major cultivated crops are rice, mustard, maize, mandarin orange, pineapple and vegetables in the foot hill and mid hill areas. The prevalence of shifting cultivation system involves slashing and burning of the vegetation on hill slopes and using the land for cultivation for one or two years. Then farmers move to new area for doing the same practice. After seven to eight years of interval, the farmers return to the same area for doing shifting cultivation.

FINDINGS

Table 1. Extension agency contact and agriculture information input pattern

(N=60 farmers)

Sl No.	Information source	Frequency of contact			Adequacy of information			Usefulness of information		
		R	O	N	A	LA	NA	U	LU	NU
		%	%	%	%	%	%	%	%	%
1	Progressive farmers/VL/OF	0	4	96	0	4	0	0	4	0
2	Agril./ Horti. Field Officers	8	10	78	4	12	2	4	14	0
3	ADO/HDO	6	8	86	6	8	0	6	8	0
4	DAO/ DHOs	8	0	92	4	2	2	4	4	0
5	Scientists: ICAR / KVK	0	0	100	0	0	0	0	0	0
6	CHF Professors	6	6	88	6	6	0	6	4	0
7	EP - Banks	0	6	94	0	2	6	0	6	0
8	EP - NGOs	0	6	94	0	6	6	0	6	0
9	EP - Co-op soc., Assoc.	0	6	94	0	6	0	0	6	0
10	EP - Input agencies	0	0	100	0	0	0	0	0	0
11	Ag. Business firms/ MNCs	0	0	100	0	0	0	0	0	0
12	Farm magazines/ Journals	0	0	100	0	0	0	0	0	0
13	News paper	0	0	100	0	0	0	0	0	0
14	Radio	40	36	24	30	28	16	28	2	10
15	Television	4	14	82	2	12	4	0	10	6

(VL-Village Leaders, OF-Other Farmers, EP-Extension Personnel, R-Regular, O-Occasional and N – Never; A- Adequate, LA- Less Adequate, and NA- Not Adequate; MU- Much Useful, U- Useful and NU- Not Useful)

Results indicated that most of the farmers getting the agriculture related information from the Radio. The Farm and Home programme regularly broadcasted by the AIR, Pasighat. Few farmers were getting information from the agriculture and horticulture departments. This is due to the fact that there is inadequate technical manpower in the agricultural developmental departments. Further, tribal farmers land holding is scattered and located far away from the villages, hence, for extension personnel it is difficult to visit number of farms. Further, the developmental departments runs with regular constraints such as; inadequate technical manpower, lack of standardized location specific technologies, lack of training facilities for extension personnel, lack of conveyance facilities, lack of essential teaching & communication equipments (AV aids & ICTs), non-availability of inputs in time and lack of quality inputs. The Krishi Vigyan Kendra (KVK), East Siang district was started during 2006, runs with few Subject Matter Specialists (SMS) and conducts limited number of extension activities. The private sector such as agri-business firms, input dealers, print media and NGOs involvement in agriculture technology transfer is negligible. Forty and thirty six per cent of farmers were regular and occasional listeners of radio, respectively. The radio programme on “Farm and Home” was regularly broadcasted during 5 pm to 6 pm. Twenty eight per cent of listeners were expressed that the farm related programme was useful for them. The radio programmes were broadcasted in Adi tribal dialect, and hence, an overwhelming majority of the farmers become radio listeners. In contrast to this, only 4 and 14 per cent of the farmers were regular and occasionally viewing farm related programmes in TV, which is due to the fact that majority of the tribal farmers not well acquainted with Hindi language.

Table 2, indicates that majority of the farmers expressed that they need all information related to farming. This is mainly because of inadequate scientific information and technology dissemination among tribal farmers. Due to inadequate technical manpower in the agricultural developmental departments and also lack of location specific research information creates information scarcity among the farmers.

From the results, an overwhelming majority of tribal farmers expressed desire to have information on diseases and pest management, suitable crop varieties, Package of practices and announcements related to the farmers training programme.

Table 2. Information needs of tribal farmers**(N-60 farm)**

Sl. No.	Areas of Information	Percentage of farmers
1.	Diseases and pest management	94
2.	Suitable crop varieties	92
3.	Package of practices	92
4.	Announcements related to the farmers training programmes	90
5.	Irrigation/ drip irrigation	86
6.	Farm credit/ subsidy schemes/	86
7.	Crop Insurance	86
8.	Government schemes on Agriculture, horticulture, processing	84
9.	Inputs (seeds, planting materials, fertilizer etc.,)	80
10.	Piggery	78
11.	Post Harvest Techniques	76
12.	Farm implements/ machinery	76
13.	Market information	70
14.	Weather information	68
15.	Soil & water conservation	68
16.	Organic farming	66
17.	Fertilizer application	64
18.	Intercultural operations	64
19.	Inter cropping	64
20.	Poultry	64
21.	Animal husbandry-Dairy	62
22.	Fishery	60
23.	Agro-forestry methods	56
24.	Input dealers address	54
25.	Vermi-compost Preparation	40
26.	Bio-fertilizer	38
27.	Medicinal Plants	34
28.	Mushroom Production	32
29.	Bamboo cultivation	30
30.	Sericulture	26
31.	Apiculture	26
32.	Integrated Farming system	24

.Table 3. Farmers Information Needs in Paddy Crop (N-60)

Sl.No.	Cultivation Practices	Farmers (%)
1.	Varieties	64
3.	Seed treatment	72
4.	Nursery management	48
5.	Planting Method	4
6.	Irrigation and water management	52
7.	Manures & Fertilizer management	78
8.	Herbicide application	50
9.	Weeding	44
10.	Thinning	52
11.	Pest management	92
	1.Stem borer	92
	2. Paddy case worm	88
	3.Leaf folder	88
12.	Disease management	88
	1.Sheath blight	88
	2.Rice Tungro virus	50
	3. Helminthosporium leaf spot	44
13.	Physiological disorders/ Nutrient deficiency	12
	1. Micro-nutrient deficiency	12
	2. Zinc deficiency	12
14.	Storage	62
15.	Cropping System	26

Table 3 reveals that an overwhelming majority of tribal farmers need information on pest management (92 per cent), disease management (88 per cent), manures & fertilizer management (78 per cent) and followed by seed treatment (72 per cent). Among the pests, paddy stem borer, case worm and leaf folder are the common problem among the surveyed farmers. The sheath blight diseases are commonly expressed by the farmers

Table 4 indicates that sixty farmers were interviewed and nineteen of them having mandarin orange orchards (32 per cent). Results indicated that all the mandarin orange growing farmers were expressed information needs on pest management and exclusively to control citrus trunk borer and fruit sucking moth. Further, majority of farmers expressed the desire to learn scientific and technological information on complete crop production and also processing aspects.

Table 4. Farmers Information Needs in Mandarin Orange

(N-60), (n-19)

Sl. No.	Subject matter	Farmers %
1.	Varieties	93.75
2.	Propagation methods	87.50
4.	Nursery management	87.50
5.	Planting Method	87.50
6.	Irrigation and water management	87.50
7.	Manures & Fertilizer management	93.75
8.	Herbicide application	75.00
9.	Weeding	18.75
10.	Pruning	18.25
11.	Inter cropping	62.50
12.	Mulching	18.25
13.	Pest management	100
	1.Citrus trunk borer	100
	2.Fruit sucking moth	100
	3. Citrus shoot borer	81.25
14.	Disease management	81.25
	1. Citrus sooty mould	81.25
	2. Citrus canker	81.25
	3. Pencillium fruit rot	25.00
	4.Alternaria fruit rot	25.00
15.	.Parasite-Ioranthus	18.25
16.	Harvesting	18.25
17.	Packaging & Processing	62.50
18.	Rejuvenation	18.25

Information needs in other areas

Farmers also expressed information requirements in following areas;

Government

Information on schemes related to village development

Application forms for birth and ST certificates

Fencing schemes

Flood control and relief programmes

Health

Information on free health camps

Health awareness information

Malaria eradication

Vaccination

Sanitation

Education

Information on Schools

School books availability

College information in North-East & outside of North-East

Information on professional studies entrance exam information

Fellowships information

Exam results of students

Others

Water harvesting information

Employment news

PARTICIPATORY RURAL APPRAISAL (PRA)

To conduct the PRA, 60 farmers were selected from the three villages. While selecting the farmers, care was taken to provide proportionate representation to the gender, education levels, and land holding size of the farmers. The selected farmers were divided into three groups. Each group was assisted with two PRA facilitators in local dialect.

Village Resource Map: A group of farmers were involved in village resource map drawing and during the process resource base (water, fertility, crops and constraints and opportunities were discussed). The main irrigation source is Maye river, Kime river and Tolem river. The predominant cropping system is wet rice cultivation, mandarin orange orchards and upland rice cultivation in Jhum lands.

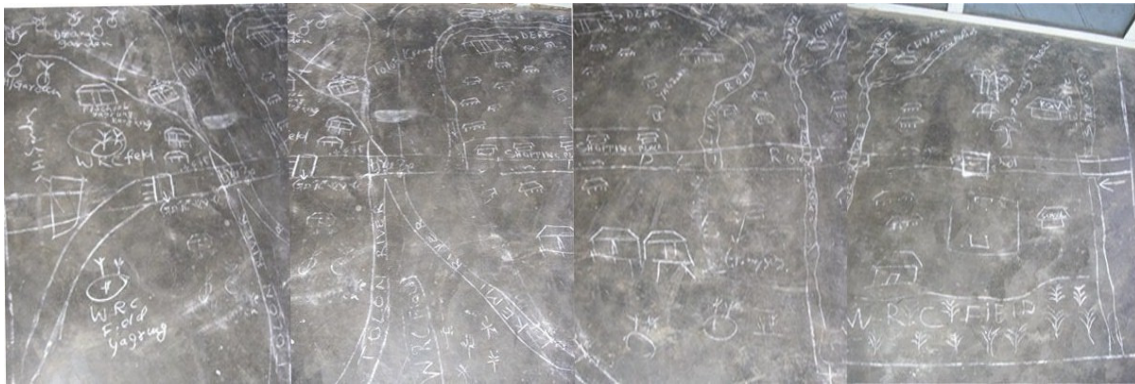


Fig. 2 Village Resource Map (Yagring-Tekang & Kongkang)

Farm Seasonal Calendar

In farm seasonal calendar (Table 5), farmers described seasonal variations in crop cultivation, intercultural operations, pest and diseases occurrence and harvesting of farm produce.

Table. 5 Farm Seasonal Calendar of Yagrung, Tekang and Kangkong Villages

Month	January	February	March	April	May	June	July	August	September	October	November	December
Crops	Colocasia Maize	Pear Pumpkin Brinjal	Bamboo Plant Banana Planting	Orange Pineapple Chilli Cucumber	Paddy Seeding / Nursery	Seasonal Ploughing and Paddy Transplanti ng	Seasonal Ploughing and Paddy Transplanti ng	Soya bean Upland (Dry field) paddy	Maize Mustard	Cabbage Coriander Tomato Potato	Potato Radish Chilli	Chilli, Bitter Brinjal
Intercultural Operations	Cleaning of dry field	Weeding of year old dry field	Festival season	Weeding of young plant in orchard or field	Making Fencing around the seeding growing field	-----	-----	Weeding in paddy field	Weeding in paddy field	Mandarin Orchard weeding	Bean and Soya bean Field weeding	Weeding of banana and Toko plantation
Pest and Diseases	Colocasia insect and pest inclu- ding grass hopper	Cricket insects and grass hopper	Banana insect and pest	Chilli shoot borer	Maize insects and pest	Paddy, banana insect and pest	Pest and insect of paddy	Cricket in paddy field	Cricket in paddy field	Insect and bug of seasonal crops	Mustard pest	Insect and pest of cabbage and potato
Harvest	Mustard Turmeric Yam Colocasia Owin (Pakkom leaf)	Fern leaf Mustard Owin (Pakkom leaf)	Pumpkin and Bottle guard	Wild Bamboo Seeding harvest	Arecanut Bamboo sucker	Wild Mustard Ginger	Pine apple Lemon	Pear Pine apple	Banana Guava Papaya and cucumber	Sugarcane Yam	Paddy Bhindi / Okra Brinjal Chilli	Paddy Mandarin Orange

Crop Specific Information Needs-Preference and Ranking Method



Fig. 3 Crop wise Information Needs Preference

A group of 18 farmers expressed information needs on the following crops, including market information needs. Based on their preference, percentage and ranks were worked out.

Table. 6 Crop wise Information Preference and Ranking

N=18

Sl. No.	Crop	No. of Farmers	Percentage	Rank
1.	Khasi Mandarin	15	83	1
2.	Assam Lemon	12	67	2
3.	Mango	11	61	3
4.	Pepper	11	61	3
5.	Paddy	10	56	5
6.	Bamboo	8	44	6
7.	Market information	8	44	6
8.	Litchi	6	33	8
9.	Guava	4	22	9
10.	Jackfruit	2	11	10

Household ICT Availability – Bar diagram Method



Fig. 4 Household ICT Availability

ICT availability among farmers was assessed using ICT pictures and stones for depicting bar diagram. Among 20 farmers, all farmers possessing Radio, 12 farmers had telephone and 6 farmers had Television.

Table. 7 Household ICT Availability

N=20

Sl. No	ICTs	No of Households having	Percentage of Households
1.	Telephone	12	60
2.	Radio	20	100
3.	Computer	0	0
4.	Television	6	30

ICT Preference of Farmers- Bar Diagram Method

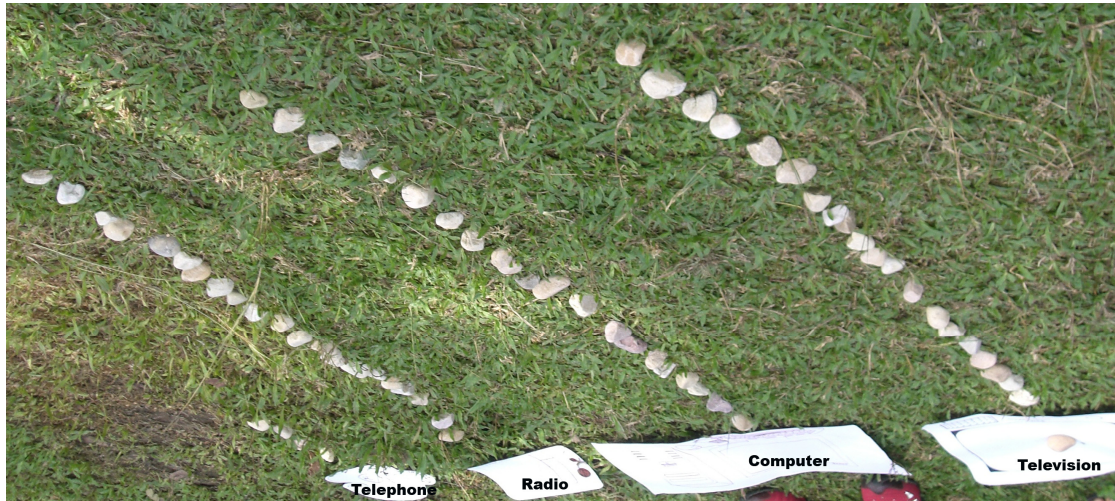


Fig. 5 ICT Preference of Farmers

A group of 25 Farmers were asked to express their preference for ICT for getting farm information, almost equal number of farmers preferred Computer with internet (88 Percent), Radio (84 Percent), and Television (76 percent). In contrast to this, only four farmers (16 percent) preferred information through Telephone.

Table. 8 ICT Preferences of Farmers

N=25

Sl. No	ICTs	No of Farmers	Percentage
1.	Telephone	4	16
2.	Radio	21	84
3.	Computer with Internet	22	88
4.	Television	19	76

CONCLUSION

From the findings it is concluded that an overwhelming majority of the tribal farmers are not having access to the advanced agricultural technological information. Considerable proportion of farmers had 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 greater proportion of farmers. Through Participatory Rural Appraisal, farmers analysed their resource availability, constraints and opportunities for farming. Further, they diagrammatically depicted the seasonal variations in crop cultivation, intercultural operations, pest and diseases occurrence, and farm produce harvesting. Further, the PRA exercise indicated that cent percent of farmers possessed radio. Most of the farmers preferred internet, radio, and television for getting agricultural information in the village knowledge centre.

IMPLICATIONS AND RECOMMENDATIONS

1. Regular awareness campaign, field demonstration, exposure visits and training on pest and diseases management measures in paddy and khasi mandarin crops need to be conducted.
2. Large numbers of rural households possess radio and they also having regular radio listening behaviour. Hence, radio need to be used as a prime communication method for farm information dissemination among the tribal farmers.
3. Farmers expressed greater preference to use modern ICTs such as; computer with internet. Hence, modern ICT tools need to be combined with traditional extension communication methods.
4. Apart from agriculture, awareness programmes on health, education, government schemes need to be conducted regularly for the benefit of rural tribal farmers.

APPENDIX
INTERVIEW SCHEDULE FOR ASSESSING INFORMATION NEEDS OF FARMERS

1. Information about the family members

Sl.No.	Name	Gender	Age	Education Level	Occupation	Experience in farming

2. Annual income of the family

Farming : Rs.....
 Others : Rs.....
 Total : Rs.....

3. Farm size [in acres]

Sl.No.	Type of Land	Land owned	Area leased in	Area leased out	Total
1.					
2.					
3.					
	Total				

4. Cropping and Irrigation intensity (Previous Year)

	Season and Name of the crop	Area[in ac]	Irrigated Area [in ac]	Total Yield	Income (Rs.)
a.					
b.					
c.					

5. Extension agency contact and Agriculture Information input pattern (Previous Year)

Which are the sources do you contact to get the farm information?

Sl. No.	Information source	Frequency of contact			Adequacy of information obtained			Usefulness of information		
		R	O	N	A	LA	NA	MU	LU	NU
1	Progressive farmers/VL/OF									
2	Agril./ Horti. Field Officers									
3	ADO/HDO									
4	DAO/ DHOs									
5	Scientists: ICAR / KVK									
6	CHF Professors									
7	EP - Banks									
8	EP - NGOs									
9	EP - Co-op soc., Assoc.									
10	EP - Input agencies									
11	Ag. Business firms/ MNCs									
12	Farm magazines/ Journals									
13	News paper									
14	Radio									
15	Television									
	Others, If any (Please specify)									

(VL-Village Leaders, OF-Other Farmers, EP - Extension Personnel, R - Regular, O - Occasionally and N – Never; A- Adequate, LA- Less Adequate, and NA- Not Adequate; MU- Much Useful, U- Useful and NU- Not Useful)

6. Broad Areas of Information Needs of Farmers

Sl. No.	Areas	MR	R	LR	NR
1.	Suitable crop varieties				
2.	Package of practices				
3.	Inputs (seeds, planting materials, fertilizer etc.,)				
4.	Diseases and pest management				
5.	Fertilizer application				
6.	Intercultural operations				
7.	Inter cropping				
8.	Irrigation/ drip irrigation				
9.	Post Harvest Techniques				
10.	Market information				
11.	Weather information				
12.	Agro-forestry methods				
13.	Farm implements/ machinery				
14.	Farm credit/ subsidy schemes/				
15.	Crop Insurance				
16.	Announcements related to the farmers Training programmes				
17.	Government schemes on Agriculture, horticulture, processing				
18.	Organic farming				
19.	Input dealers address				
20.	Soil & water conservation				
21.	Animal husbandry-Dairy				
22.	Piggery				
23.	Poultry				
24.	Fishery				
25.	Integrated Farming system				
26.	Sericulture				
27.	Apiculture				

