

A Case Study

SWOT (Strengths weaknesses opportunities threat) analysis: A case study through PRA

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SUMMARY : Participatory rural appraisal (PRA) is the most effective tools which can be utilized to understand the technology adoption profit of the farming community and to get the first hand information about the needs, resources available, priorities, problems and prospects of the farming community. This process helps understanding the technology dissemination process, rural development activities, linkage mechanisms existing among research, training and extension, credit and input supply systems etc. (Jones, 1995). Highly productive/adoptive variety of moong like PDM 139 followed by K850 and Local variety in Table 5. Similarity, in Table 6 majority of production/adoptive variety of paddy Pusa Sugandh 4 and 5 followed by Pro-Agro 6444, Kranti and Mahamaya and in Table 7 High productive/adoptive variety of wheat like PBW550 followed by PBW 343, Unnat halana and Local wheat variety. The major problems were non- availability of seed at time, imbalance use of fertilizers, problem of milk sale at higher rate, degradation in soil health day by day, lack of small scale industries centre for youth, insect-pest incidents, blast disease, weed infestation, non- availability of labour at time of potato digging, non- timely supply of water in canal, problem to wild animals and paddy transplanting and lack of establish ponds/watershed and rejuvenate.

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KEY WORDS :

SWOT, PRA,

Strengths,

Weaknesses

BACKGROUND AND OBJECTIVES

Participatory rural appraisal (PRA) is an approach which emphasizes local knowledge and enables local people to make their own appraisal, analysis and plans to take action. PRA uses group exercises to share information, analysis and action among stakeholders. Why PRA: PRA is a means to people's participation, to understand the social aspects of the village, to develop common understanding on the village conditions and natural resource situation, to learn the criteria of farmers which to select appropriate technology available to encounter a problem (*i.e.* exotic or indigenous technologies), to observe the facts directly on the field, to discuss problems and solutions with farmers, to encourage resource poor and women to share their grievances for, to select appropriate technology available to encounter a problem (*i.e.*

exotic or indigenous technologies) to observe the facts directly on the field, to discuss problems and solutions with farmers, to encourage resource poor and women to share their grievances and to identify and prioritize the needs. Main thrust should be given on critical assessment of the available technologies in term of local farmers' natural and socio economic situations (Kar *et al.*, 2002). To study was conducted with the objective: to analyze the agricultural problems and prospects with reference to the local resource base, agro-ecology, technology dissemination planning and adoption for improvement of the socio-economic status of the villages.

RESOURCES AND METHODS

PRA was carried out by a multidisciplinary team of scientist in Endhausa of Barhpura block

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of Etawah district of Uttar Pradesh. It is located approximately 11 km. away from Krishi Vigyan Kendra, Etawah. The agro climatic is south western semi arid zone with extreme summer and winter.

Triangulations :

Different methods were used for data collection to ensure objectively of data. These methods are briefly discussed here. On the spot visualization, personal and group interview, key information interview, secondary data source, semi structured interview and cartographic representation or mapping.

OBSERVATIONS AND ANALYSIS

Table 1 in social survey majority 50 per cent belonged to SC category while, the OBC and general castes were 25 per cent, respectively. Maximum 95 per cent in male and 80 percentage in female of the respondents were found in the age group of 15-30 years, followed by 75 per cent (male) and 65 per cent (Female) educated in age range 30-40 years, 38 per cent (male) and 30 per cent (female) educate in the age range 40-50 years and only 15 per cent educated in 50 years and above but no any female educated in the age 50 years and above 50 years. Majority of 250 animals were like goat followed by 100 buffalo, 50 cows, 40 pigs and 08 oxen, respectively. Most of the farmers irrigated land with Diesel tube well (50%), followed by canal (35%) and Electric tube well (15%), respectively. Majority of respondents were having Agricultural implements 9 numbers like sprayer, followed by 4 numbers of Potato seed drill, Seed drill, Tractor, Cultivator, Tractor trolley and 2 numbers of Potato digger, Disc harrow and M.B. Plough, respectively. Maximum of the respondents 65 per cent were observed in the < 5 Bigha / <1 acre followed by 20 per cent in 15-25 Bigha / 1-3 acres, 10% in 25-30 Bigha / 3-5 acres and 5% in >6 acres, respectively. Majority 60 per cent of the respondents were having TV and 15 per cent have radio and News papers as a communication media. Maximum land was use in agriculture. Most of the cropping intensity 250 per cent in the village, 11 person mobilized to others city and 15 per cent persons agriculture labours. Main horticulture crops were Guava, Mango, Chili, Tomato, Brinjal, Garlic, Onion, Climber

Table 1: Socio-economic status of the village

1	Total population of village	- 3500
2	Total families	- 150
3	Total voters	- 725
4	Caste	
Sr. No.	Caste	Percentage
1.	General	25
2.	Backward	25
3.	Scheduled cast	50

Table 1 contd....

Table 1 contd...

5. Educational status		
Age (years)	Female percentage	Male percentage
15-30	80	95
30-40	65	75
40-50	30	38
50 to above	0	15

6. Status of animals				
Sr. No.	Animals	Local	Improved	Total
1.	Buffalo	85	15	100
2.	Cow	46	04	50
3.	Goat	210	40	250
4.	Ox	08	--	08
5.	Pig	14	26	40
	Total	355	85	448

7. Irrigation		
Sr. No.	Source of irrigation	Percentage
1.	Diesel tube well	50
2.	Electric tube well	15
3.	Canal	35

8. Agricultural implements		
Sr. No.	Implements	Numbers
1.	Potato seed drill	4
2.	Potato digger	2
3.	Seed drill	4
4.	Sprayer	9
5.	M.B. Plough	2
6.	Tractor	4
7.	Cultivator	4
8.	Tractor trolley	4
9.	Disc harrow	2

9. Land holding		
Sr. No.	Area of land	Percentage
1.	< 5 Bigha / <1 acre	65%
2.	15-25 Bigha / 1-3 acres	20%
3.	25-30 Bigha / 3-5 acres	10%
4.	>6 acres	5%

10. Communication media		
Sr. No.	Media	Numbers
1.	T.V.	60
2.	Radio	15
3.	News paper	15

11. Geographical area (300 ha.)		
Sr. No.	Particulars	Area(ha.)
1.	Irrigated lands	250
2.	Un irrigated lands	50
3.	Horticulture	01
4.	Agriculture	275
5.	Fallow and residential	25

Table 1 contd...

Table 1 contd...

12. Other			
Sr. No.	Particulars	Percentage	Remarks
1.	Agriculture labour	15	
	Lohar	02	
	Carpenter	01	
	Barber	02	
	Washer man	01	
2.	Mobilization from village	11 Nos.	
3.	Nursery	01	
4.	Piggery	01	
5.	Vegetable self help group	02	
6.	Women saving group	02	
7.	Cropping intensity	250%	
8.	Main horticultural crops		Guava, Mango, Chili, Tomato, Brinjal, Garlic, Onion, Climber vegetables
9.	Cropping pattern		Paddy-wheat Urd/ Mong-Vegetable-Potato Green manuring-Potato-Urd/Mong Maize-Potato-Wheat

vegetables and Cropping pattern were Paddy-wheat, Urd/Moong-Vegetable-Potato, Green manuring-Potato-Urd/Mong and Maize-Potato-Wheat.

Table 2 revealed that transects are observatory walks or tracks across the village and fields in any area. After establishing the extreme east and west boundaries of the village, as delineated by the key informants (KIs), an east to west farm walk was undertaken across the village and the observations made was given below in Table 3.

Table 3 revealed that in the time line, chronological sequence of events that have taken place in the village, belong to the history of village or to specific subjects or related sector such as education, health, agriculture, animal and others. Different agricultural activities were studied and these are given in the Table 3.

Table 4 revealed that Venn diagram describes working of organization in the village and their relationship with regards to overall development and welfare of the village people. The District. Head quarter have ranking I followed by organization of KVK, Intermediate college and D.D. Agriculture/Research. Similarly, Primary school, Graduate/Post graduate and Seed store, Animal health centre, Marketing Ekdil and Marketing Ekdil were place at for from the village, shows weak relationship with people. Milk Society is doing good job but it is not so important as compared to Seed store and block.

Table 2: Transect walk in Endhaava village

Attributes	Particulars of the village		
	Village	Plain land	Low land
Topography			Up land
Soil type	Loam	Sandy loam	Loam
Water table	75-100ft.	80-90ft	100-110ft
Crop	---	Wheat, Mustard, Gram, Paddy, Chilli, Brinjal, Point Guard, Okra.	Vegetables, Bajra, Maize, Athlat
Trees	Neem, Sheesham, Piple, anyan, Jamun	Neem, Sheesham, Eucalyptus	Neem, Sheesham
Live stock	Cow, Buffalo, Goat, Dog,	Goat, Cow, Buffalos	Goat, Cow, Buffalos
Primary land use pattern	Agriculture	Agriculture	Livestock rearing
Irrigation	Canal, Diesel pump set/tube well,	Canal, Diesel pump set/tube well,	Rain fed, Diesel pump set/tube well,
Horticulture	Mango, Jamun, Guava, Shabatut	Mango, Jamun, Guava	Mango, Jamun, Guava
Problem	---	Some time water logged due to canal	Rain fed
Opportunities	---	Seed production	Dry land farming

Table 3: Historical timeline of Endhaua village

Years	Historical events
1976	Motor cycle introduced
1985	Canal
1963	Urea was introduced
1999	Hybrid variety introduced
1974	Tube well
1981	Pesticide in paddy
1980	Paddy introduced
1984	Tractor
1995	Use of sprayer
1985	TV
1999	Mobile
1965	Pucca house in village
1984	Winnowing fan
1990	Zinc application

Table 4 : Venn diagram of Endhaua village

Sr. No.	Institute	Distance	Important ranking
1.	Primary school	In village	V
2.	Intermediate college	2 km.	III
3.	Graduate/Post graduate	8 km.	VII
4.	District H.Q.	9 km.	I
5.	C.D. Block	11 km.	VI
6.	Krishi Vigyan Kendra, Etawah	10 km.	II
7.	D.D. Agriculture/Research	10 km.	IV
8.	Seed store	2 km.	VII
9.	Animal health centre	2 km.	VIII
10.	Milk Society	4 km.	X
11.	Marketing Ekdil	1.5 km.	IX

Table 5, 6 and 7 revealed that the purpose of matrix ranking was to get better understanding of farmers' decision making process and to identify criteria used to prioritize and select certain items or activities over others. Highly productive/adoptive variety of Mong like PDM 139 followed by K850 and Local variety in Table 5. Similarity, in Table 6 majority of production/adoptive variety of Paddy Pusa

Table 5: Preference ranking for Mong varieties

Variety/criteria	Local	K 850	PDM 139/ smrat
Yield	3	4	5
Quality	2	3	4
Resistance	1	2	4
Duration	3	3	3
Cost of production	3	4	5
Price	3	4	5
Total	15	20	26
Rank	III	II	I

Sugandh 4 and 5 followed by Pro-Agro 6444, Kranti and Mahamaya and in Table 7 High productive/adoptive variety of wheat like PBW550 followed by PBW 343, Unnat halana and Local wheat variety.

Table 6: Preference ranking for paddy varieties

Variety/criteria	Mahamaya	Kranti	Pro-agro 6444	Pusa Sugandh 4 and 5
Yield	3	4	5	4
Quality	2	3	4	5
Resistance	1	2	4	4
Duration	3	3	3	4
Cost of production	3	4	5	5
Price	3	3	4	5
Total	15	19	25	27
Rank	IV	III	II	I

Table 7: Preference ranking for wheat varieties

Variety/criteria	Local Variety	Unnat halana	PBW 343	PBW 550
Yield	2	3	4	5
Quality	2	3	4	4
Resistance	1	3	2	5
Duration	3	3	3	4
Cost of production	3	4	4	5
Price	2	4	3	4
Total	13	20	20	25
Rank	III	II	II	I

Seasonal calendar :

Availability of fodder was more in June - August while its shortage was reported during November. Labour availability was reported more in month of May and September while problem of labour was reported only in November.

Problem cause diagram :

The problems were identified and prioritize by mutual interaction. The major problems were non-availability of seed at time, imbalance use of fertilizers, problem of milk sale at higher rate, degradation in soil health day by day, lack of small scale industries centre for youth, insect-pest incidents, Jhonka and blast disease, weed infestation, non-availability of labour at time of potato digging, non timely supply of water in canal, problem to wild animals and paddy transplanting and lack of establish ponds/watershed and rejuvenate.

SWOT (Strengths weaknesses opportunities threat):

According to observation of PRA (Participatory Rural Appraisal) in the village Endhaua, district Etawah, SWOT

analysis is following under taken.

Strengths :

The main strength of agricultural sector was (i) Approach road to village good (ii) Labour availability (iii) Huge scientific and technical knowledge from Krishi Vigyan Kendra and agricultural departments because this village near to this departments (iv) Canal (v) Land good (Sandy loam) (vi) Ambedkar village.

Weaknesses:

- Lack of good seed according to demand.
- Lack of awareness among the farmers regarding the diversified agriculture.
- Non- availability of fertilizers, chemicals at timely
- Problem to wild animals.
- Drainage problems.
- Problems milk sale at higher rate.
- Lack of artificial insemination service/breeding at timely.
- Lack of Small scale industries centre for youth.
- Lack of establish ponds/watershed and rejuvenate.
- Less capability in human resource developments and leadership.
- Degradation in soil health day by day.
- Average production less.
- General facility of education and health.
- Problem of market which give profit.
- Weed infestation.
- Non-availability of labour at time of potato digging.
- Non-timely supply of water in canal.
- Insect-pest incidents, Jhonka and blast disease.

Opportunities :

- Seed production programme for seed availability at timely in the village.
- Low cost production/ input cost for get more profit.
- Supply of implements from agricultural department.
- Soil health reclamation by Bhumi Sudhar Nigam, Soil testing, Bio-fertilizers and organic cultivation.
- Management of wild animals.
- Value addition / grading of milk, vegetable.
- Drainage water by peoples participation.
- Training to farmers and rural youth for animals, fodder and small scale industries.
- Vegetable self help group.
- Bee keeping, vegetables preservation for employments
- Intervention of new crop viz., Scented rice, summer ground nut, floriculture, Spice and banana cultivation.
- Breed conservation of Bhadawari buffalo and Jamunapari goat.
- Industrial develop based on potato.

Threat :

- Adoption of village and transfer of innovative technology for rural up-gradation and agricultural productivity by agricultural related institutes.
- Leadership/ capability/ life value addition/ self efficiency development in the village.
- Innovative technologies dissemination methodologically and practically by training and demonstration as plea of their peoples.
- Motivation to women for women empowerment / women prosperous.
- Break mobilization of rural to Mahanagar by village employments.
- Amore use agricultural implements in agriculture.
- Motivation to organic agriculture and conservation of soil health.
- Farmers scientist interaction to improve technology know how.
- Formation SHGs, FIG, Saving Group in village with establish/motivation helping nature, cultural value, people participation for proposed programme of line departments.
- Formation of better balance in Soil health, water, people, forest and animals and education, health, drinking water and quality production.
- To make interest in agriculture as industries, all round developments of rural youth, agricultural labour and an employ peoples, use of machineries intensity in agriculture, use f efficient irrigation method .

Conclusion :

PRA is an effective tool to get first hand information on available natural resources, technology and adoption, rejection, problems and prospects of the farming community in his situation. Highly productive/adoptive variety of Mong like PDM 139 followed by K850 and Local variety in Table 5. Similarity, in Table 6 majority of production/adoptive variety of Paddy Pusa Sugandh 4 and 5 followed by Pro-Agro 6444, Kranti and Mahamaya and in Table 7 High productive/adoptive variety of wheat like PBW550 followed by PBW 343, Unnat halana and Local wheat variety. Therefore, planning should be done according to their problems. The problems were identified and prioritize by mutual interaction. The major problems were non-availability of seed at time, imbalance use of fertilizers, problem of milk sale at higher rate, degradation in soil health day by day, lack of small scale industries centre for youth, insect-pest incidents, Jhonka and blast disease, weed infestation, non-availability of labour at time of potato digging, non timely supply of water in canal, problem to wild animals and paddy transplanting and lack of establish ponds/watershed and rejuvenate.

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