APPLICATION OF PRA TECHNIQUE FOR FIELD PROBLEM IDENTIFICATION

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This paper deals with the application of participatory rural appraisal technique for identification of agricultural field problems of Maroorpatti village. The economic importance of problems was also worked out. Based on the village magnitude value, mosaic virus affecting tapioca crop was identified as the topmost problem in the village.

The paramount importance of extension research in agriculture is to study the efficacy and the impact of different technologies developed for adoption in the farmers' field situation and to develop new technologies based on the needs of the farmers and the problems faced by them. Specific information from the researchers is passed on to the extensionists for transfer to farmers and the farmers problems are fed back to the researchers in order to develop the need based technology. However, in practice the former linkage is usually not well developed and the latter exists hardly.

By keeping this in view, the present study was undertaken to focus on two problems; (i) to study the gap between the already existing scientific technologies and their level of adoption at the farmers' fields; and (ii) to provide a solution to the problems currently faced by them by developing a new technology, which is not available at present. This study was undertaken by the authors as a team of multi- disciplinary scientists during their field

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experience training undergone at Maroorpatti village, Namakkal district (Tamil Nadu), as a part of the Foundation Course for the agricultural Research Scientists (FOCARS), The National Academy of Agricultural Research Management (NAARM), Hyderabad during a period from November 17th to December 16th 1997.

In the present paper, we discuss the application of the most widely used PRA technique, namely, Preferential Ranking Technique to identify the top most agricultural field problem faced by the Maroorpatti villagers.

Methodology

The following steps were followed to apply the preferential ranking technique (Sabarathnam, 1988) in carrying out the analysis.

Step (I) Key informants (KI)

Key informants, who were conversant with the village situations, like the panchayat president, rogressive farmers, local leaders were first identified. They were asked individually to list out the problems faced by the villagers in relation to agriculture. After knowing the loss or extent of damage due to each and every problem, they were asked to name three such problems in their village.

Step (ii) Identification of farmers

The farmers identified through the KI were also asked to list out the problems faced by them along with their economic importance. Then, they were also asked to list out other three farmers facing such problem. This technique was continued till 30 farmers were identified.

Estimating the extent of loss or damage, is equivalent of making use of the formula (Harish Kumar and Roy, 1990) :

$$\text{Percentage of damage due to the problem} = \frac{(100)\ (\text{number of affected units})}{(\text{total number of units})}$$

Step (iii) Quantification of data

The quantification of data was done by first ranking the problems based on the information obtained from the key informants and the farmers and then calculating the Rank Based Quotient (RBQ) (Sabarathnam, 1988), which is as follows :

$$R.B.Q. = \sum_{i=1}^{n} F_i\,(n+1-i) / Nn \times 100,$$

wherein Fi = Frequency of farmers/ KI for the i th rank of the technological need. N and n denote the number of respondents and number of problems identified respectively.

Step (iv) Computation of the rank correlation coefficient (R)

To choose a single RBQ value for each problem, we worked out the rank correlation coefficient (R) values and to know the degree of association in listing out the farmers and key informants problems.

$$R = 1 - (6 \sum_{i=1}^{n} di^2 / N^3-N),$$

where di is the difference in the ranks between the key informants and farmers' ith problem.

If the R value was significant at 5 per cent level, we take the average R.B.Q. value, else we consider the farmer's R.B.Q. value as the final one, Similar steps were followed to work out the final figure of average percentage loss for each problem.

Step (v) The magnitude value of the problem (MVP) was calculated as

M.V.P. = R.B.Q. X Average loss in % X Area under the crop.

Based on the village magnitude value of the problems, the top most problem (possessing the highest M.V.P.) was identified.

Results and Discussion

This study was conducted during November - December, 1997 as a part of the field experience training (FET) at Maroorpatti village in Namakkal district of Tamil Nadu. Six key-informants and thirty farmers were contacted to identify the technological needs and problems faced by the villagers.

Preferential ranking technique was utilized to identify the problems faced by the Maroorpatti villagers and also the loss or extent or damage due to the problems. In particular, eight different problems were identified. They were : (a) Water scarcity, (b) Incidence of Tapioca mosaic, (c) Incidence of Tapioca whitefly, (d) Incidence of Groundnut leaf minor, (e) Incidence of Groundnut red hairy caterpillar, (f) Inadequate counselling, (g) Non estimation of the yield before harvest, and (h) Non-availability of labour during peak periods.

The rankings given to these problems by different key informants and the farmers were outlined in Table 1 and Table 2 respectively, along with the corresponding economic importance of the problems. A Perusal of these facts indicates that mosaic virus affecting the Tapioca crops was given the top most rank by four key informants and thirteen farmers. Similarly the average loss due to this problem was found to be 47 per cent (in the case of the key informants) and 45 per cent (in the case of the farmers). Likewise, red hairy caterpillar affecting groundnut crop was given the first rank by two key informants and thirteen farmers, with the average loss of 39 per cent and 38 per cent respectively.

Based on the ranks given by the key informants and farmers for the different problems, listed

Table 1 : Problem ranks for key informants (sample size 6) and their economic importance

Sl. No.	Problem	I	II	III	IV	V	VI	VII	VIII	Avg. loss (%)
1.	Water Scarcity	0	0	3	2	1	0	0	0	20
2.	Incidence of Tapioca mosaic	4	2	0	0	0	0	0	0	47
3.	Incidence of Tapioca white fly	0	0	2	3	0	1	0	0	36
4.	Incidence of G.nut leaf miner	0	0	1	0	3	2	0	0	25
5.	Incidence of G.nut Red hairy caterpillar	2	4	0	0	0	0	0	0	39
6.	Inadequate counselling	0	0	0	1	2	2	1	0	14
7.	Non estimation Of the yield before harvest	0	0	0	0	0	1	2	3	11
8.	Non availability of labour	0	0	0	0	0	0	3	3	10

Table 2 : Problem ranks for farmers (sample size 30) and their economic importance

Sl. No.	Problem	I	II	III	IV	V	VI	VII	VIII	Avg. loss (%)
1.	Water Scarcity	1	4	5	13	7	0	0	0	26
2.	Incidence of Tapioca mosaic	13	13	3	1	0	0	0	0	45
3.	Incidence of Tapioca white fly	1	5	7	10	3	4	0	0	28
4.	Incidence of G.nut leaf miner	3	4	6	4	8	5	0	0	25
5.	Incidence of G.nut Red hairy caterpillar	13	6	9	0	0	2	0	0	38
6.	Inadequate counselling	0	0	0	5	7	12	3	3	14
7.	Non estimation of the yield before harvest	0	0	0	0	0	2	2	14	12
8.	Non availability of labour	0	0	0	0	0	4	13	13	9

Table 3 : Rank Based Quotient (R.B.Q.)

Problem Number	Key Informant (Rank)	Farmer (Rank)
1.	66.67 (3)	66.25 (3.5)
2.	95.83 (1)	90.83 (1)
3.	62.05 (4)	66.25 (3.5)
4.	49.99 (5)	64.58 (5)
5.	91.66 (2)	85.83 (2)
6.	37.49 (6)	40.83 (6)
7.	20.83 (7)	19.99 (8)
8.	18.75 (8)	21.25 (7)

out in Table 1 and Table 2, the rank based quotient was calculated for each problem and were presented in Table 3. It could be inferred that the Calculated R.B.Q. values, ranged from 95.83 to 18.75, in the case of key informants, and from 90.83 to 19.99 in the case of farmers. However, the highest value in both the case correspond to the incidence of mosaic virus problem in Tapioca crop.

In the next stage, in order to arrive at a single R.B.Q. value for all the problems, the rank correlation values were worked out and were found to be 0.97 and 0.976, with respect to the listed problems and the average loss due to the problems respectively. As these two rank correlation values were highly significant, the average values of R.B.Q. and average loss due to the different problems were taken as the final R.B.Q. value and the final average loss (per cent) for each problem (See Table 4). In the same table, the village magnitude values (V.M.V.) for all the problems were also provided. It may be noticed,

Table 4 : Magnitude value of the problems

Problem	R.B.Q.	Avg. loss (%)	Area (acres)	V.M.V. ('000)	Preferential Ranking
1. Water Scarcity	66.46	23	215	328.644	II
2. Incidence of Tapioca mosaic	93.33	46	140	601.045	I
3. Incidence of Tapioca white fly	64.38	32	140	288.422	III
4. Incidence of G.nut leaf miner	57.29	25	75	107.419	VI
5. Incidence of G.nut Red hairy caterpillar	88.75	38.50	75	256.265	I V
6. Inadequate counselling	39.16	14	215	117.872	V
7. Non estimation of the yield before harvest	20.41	11.50	215	50.64	VII
8. Non availability of labour	20.00	9.50	215	40.85	VIII

that the maximum V.M.V. value (601045) was attributed to the mosaic virus affecting the Tapioca crop. Thus, the preferential ranking technique was successfully utilized to identify the mosaic virus affecting the Tapioca crop as the top most problem.

References

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administrators from both the systems will increase sincerity and accountability of personnel and thus enhance the quality of interaction between them. For example, in a monthly workshop, frequent inspections and on-the-spot guidance and resolution of conflicts by the Director of Extension/Research of the SAU or even an occasional visit by the Vice-Chancellor may improve the process a lot.

To sum up, it can be said that though a chain of mechanisms exists for research-extension linkage, yet at operational level they are found wanting. To ensure that research and extension systems meet the challenges of sustainable agriculture in the new millennium, number of steps need to be taken to strengthen their linkages including adoption and promotion of consistent policy, explicit responsibility and accountability, educative discussions, visible leadership, collaborative approach, specific trainings adequate resources and facilitative supervision and so on.

Bringing preservation of baby com

Use of vegetable baby corn in salad and several culinary preparation is increasing in recent years. Baby corn is generally preserved in fresh form at low temperature or processed by canning method which is a costly proposition. At IIHR, a simple method of short term bringing preservation of baby corn has been developed. Baby corn packed in a brine solution containing additives and stored under ambient conditions retained its freshness, texture and colour for three months.