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Assessment of training needs for fish farmers towards improved technologies through 'PRA' technique

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Abstract

Semra village of Jasra block of Allahabad district was purposely selected in 2009 by Krishi Vigyan Kendra for the assessment of training need through PRA techniques. The village is situated 16 Km away from K.V.K, Allahabad. The selected village had a mixed population of various castes and sub castes of different economic status. Majority of villagers were farmers and some of them were artisans. Fish farmers were Mallah and Kewat in caste. Fish farming was secondary occupation to them. Village Semra possesses thirteen ponds with 11.88 ha water area for fish farming. Low yield of fish was identified as problem faced by fish farmers of the village along with other problems related to crop production and livestock. RBQ value of low yield was 31.5, AYLP was 22.5 and MV was 8419.95. Low yield of fish was identified as the top most problem in fish farming and ranked fifth among other agriculture related problems of Semra village. Different factors were socio-economic and bio-physical factors which hindered the yield of fish. Possible solutions were predicted by participating with farmers problems. A needful training list was prepared for practicing farmers and rural youth.

Keywords: PRA, training, fish farming, RBQ, M.V. problem.

Introduction

Fisheries sector has made significant contribution in Indian economy by way augmenting production of animal protein, employment, income generation and foreign exchange earnings. Human resource development training has been identified as one of the most important areas to be addressed for fishery sector in the country (Pandey & Prasad 2008). PRA is a tool, used for identification of training need of fish farmer.

PRA as a growing family of approaches and a method to enable local people to enhance their share and analyses their knowledge of life and conditions to plan and act. Evidence of data showed high validity and reliability of information shared rural people through PRA (Chambers 1992). PRA is an intensive, systematic but semi-structured learning experience carried out in a community by multidisciplinary team, which includes community members (Joachina & Heather 1991).

The purpose of conducting participatory rural appraisal is to prepare a plan at the end. This plan should be practicable and achievable and it should be prepared with the involvement of people concerned i.e. farmers. This action plan depending upon the problems and causes identified in the course of PRA. Considering the above fact in mind, a research study was undertaken to find out training needs of fish farmers and rural youth.

The objectives of the study were-

- To interact with fish farming community to know their priorities, problems in fish farming.
- To identify possible technological interventions to solve these problems and to find out training needs of fish farmers and rural youths.

Materials and Methods

Village identification and Location:

PRA makes use of an inside range of techniques like secondary data review, direct

observation, semi-structured interview to obtain the broader outlook of the village or specific topic in detail .This information can be obtained from various groups. Problem identification techniques involve ranking a set of problem /preference/priorities by a group of individuals on the basis of their criteria or preparations Semra, a village of Jasra block in Allahabad district was purposely selected by Krishi Vigyan Kendra for need assessment. The village is situated 16 km away from Krishi Vigyan Kendra, Allahabad. The PRA survey was conducted during summer 2009.The selected village has a mixed population of various castes and sub castes of different economic status. Majority of villager were farmers and some of them were artisans. Fish farmers were belong to Mallah and Kewat in caste. Fish farming was secondary occupation. Village Semra possess thirteen ponds with 11.88 ha water area for fish farming.

PRA and Triangulation:

PRA has emerged as the best method to study and identify the problems faced by rural people (Mascarenhas *et al*. 1991). PRA is a means for collecting information, identifying and mobilizing the intended groups by evolving their participation and also opening ways in which intended groups can participate in the decision making process, project designing, and implementation and monitoring. Triangulation, the main feature of PRA is mainly cross checking the information collected from an intended group by the other. PRA is about gaining the learning experience on the farmer's field (McCracken1988, McCracken & Conway 1988, Tarnutzer & Battig 1994, VanVeldhuizen *et al*. 1995). Different standard PRA techniques viz., Van Diagram, Time line, Time Trends, Activity Schedule, Matrix Ranking, different types of mapping etc. were used to study the socio economic conditions, natural resources, cropping systems, problem faced by the farmers in animal husbandry and farming (Mishra & Bihari 2003, Mishra *et al*. 1996, Prasad 1993).

The steps for training need assessment through PRA techniques

PRA makes use of an inside range of techniques like secondary data review, direct observation, semi-structured interviewing to obtain the broader outlook of the village or specific topic in detail .This information can be obtained from various groups. Problem identification techniques involve ranking a set of problem/preference/priorities by a group of individuals on the basis of their criteria or preparations.

1st step -Data collection and Problem identification techniques:

(A). Data collection

i) Selection of the respondents and data collection

For identifying the key problem of the village, a snowball-sample technique was adapted. First of all, a key informant was conducted .Three farmers were contacted separately according to the advice of key informant. Then, each of three farmers was asked to enlist various problem faced by farmers. They were further asked to rank the problem according to importance. Finally, they were asked to indicate the percentage yield loss with regard to each problem faced by villagers based on long stay in village. After this each farmer was asked from each of nine farmers contacted. In this way, thirty farmers were interviewed for the same purpose.

ii) Triangulation

The information provided by each group was verified by the other and finally with the help of government officials at Block and tehsil levels the information and statistics were cross checked.

(B) Data Analysis:

For identifying the top most problem of village, Rank based Quotient (RBQ). Average Yield Loss Percentage (AYLP) and finally

magnitude value (MV) of each problem were calculated.

i) Rank based Quotient (RBQ) was estimated as follows-

$$RBQ = \frac{\sum fi(n+1-i)}{Nn} \times 100$$

Where,

fi= Number of farmers reporting the particular problem under ith rank (i.e., frequency for the ith rank of the problem).

N= Number of farmers

n= Number of ranks.

A rank based quotient (RBQ) was developed by (Sabarathnam 1988).

ii) Magnitude value (MV):

The magnitude of the problem associated with the village was calculated by the following formula.

Magnitude value (MV)= RBQ x AYLP xArea under the crop in ha/ number of animals.

2nd step-development the problem diagram indicating causes.

3rd step- Action plan preparation- List of training, FLD, OFT were prepared by matrix ranking method indicating the problem cause and possible solutions.

Results and Discussion

Keeping in view the objectives, the results of the study are discussed below.

Rank based Quotient (RBQ), Average Yield Loss Percentage (AYLP) and Magnitude Value (MV)

PRA is an informal way of learning very quickly from local people about important problems and opportunity of the given area. The data of Table 1 revealed that low yield of fish was identified problem faced by fish farmer of the village Semra along with other problems related to crop and animal husbandry. Rank based Quotient (RBQ), Average Yield Loss Percentage (AYLP), Magnitude Value (MV) for low yield of fish were 31.5, 22.5 and 8419.95 respectively. Low yield of fish was identified as the top most problem in fish farming and ranked fifth among other agriculture related problem of Semra village.

Table 1 Problem related to fish culture and Rank based Quotient, Average Yield Loss Percentage, Magnitude Value

Problem related to fish culture	Rank based Quotient (RBQ)	Average Yield Loss Percentage(AYLP)	Magnitude Value (MV)
Low yield of fish	31.5	22.5	8419.95

Problem cause diagram on fish farming:

Low yield of fish was identified as top most problem in composite fish culture. The causes for the problem were analyzed with the help of problem tree. The problem tree was developed as a diagrammatic aid to sort out the inter related factors (Fig. 1).This helped in preparing action plan.

The problem cause diagram showed socio-economic factors and bio-physical factors for low yield of fish. Socio- economic factors for low yield of fish are traditional thinking, lack of technical knowledge, poor economic condition of fish farmer, high cost of input, fear of poisoning, theft & enmity. Bio-physical factors for low yield of fishes are, supply of small size fish seed, stocking of high density fish seed, improper seed ratio, non-availability of exotic carp seed, problem of disease, reduction of productivity zone, effect of carnivorous fish, non-use of feed, fertilizers & manure (Fig.1).Similar result were also reported by (David 2006).

Fig.1. Problem cause diagram on fish farming (Village- Semra; Block-Jasra)

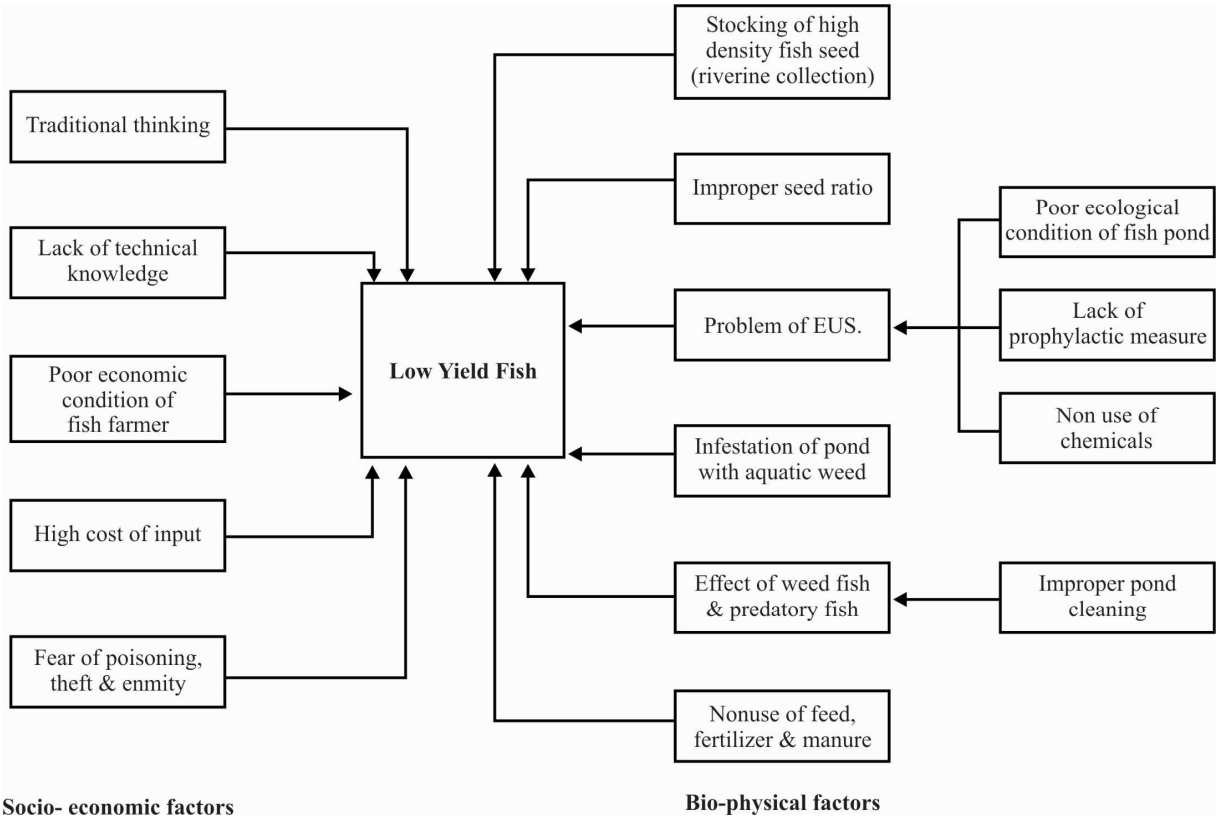

Table 2 Prioritization of problem associated causes (by using matrix ranking) and possible solution by fish farmers.

SN	Associated causes	Criteria						Possible solution
		Extent	Important	Severity	Frequency	Total	Rank	
1	Lack of supplementary feeds	60	50	60	50	220	i	OFT
2	Disease problem (EUS)	40	30	40	40	150	ii	Training/FLD
3	Low use of pond fertilization	20	20	20	30	90	iii	Training
4	Lack of pond cleaning technique	10	30	20	20	80	iv	Training
5	Seed related problem	20	20	10	10	60	v	Training/FLD

FLD –Front line demonstration, OFT-On farm trail

Prioritization of problem associated causes and possible solution by fish farmers

Table 2 Shows, prioritization of problem associated causes (by using matrix ranking) and possible solution by farmers. Lack of supplementary feeds, disease problem , low use of pond fertilization, lack of pond cleaning technique, seed related problem were causes of low yield of fish and ranked 1st, 2nd, 3rd, 4th and 5th respectively by fish farmers of the village. Possible solutions were given by farmers against each cause.

Table 3 Training needs for practicing farmer& rural youth of village Semra (Block Jasra)

SN.	Title of training programme	Priority ranks	Clientele	Venue (campus)	Duration (days)	Month
1	Integrated fish farming (Fish Duck, Pig, Cattle, Vegitables.)	I	P.F & R.Y	KVK	10	Aug-Sept
2	Composite fish farming	II	P.F &R.Y	KVK	10	Feb-March
3.	Fish disease management	III	P.F	Off	02	Apr-May
4.	Common carp breeding and rearing	IV	P.F	KVK	05	Jan -Feb
5	Fish seed rearing in seasonal pond	V	P.F	Off	02	May-June

P.F -Practicing farmer, R.Y-Rural youth

Training needs for practicing farmer& rural youth of village Semra (Jasra)

Table 3 depicts the training needs for practicing farmer and rural youth of village Semra (Jasra). The training needs are integrated fish farming, composite fish farming, fish disease management, common carp breeding and rearing, and fish seed rearing in seasonal pond .Fish farmers also suggested the venue and duration for training program. The duration of the on campus (at KVK) should be 10 days so that the farmers would be able to learn skill of package practice (David 2003).

Conclusion

As fish farmers belong to poor community, most of them desire financial help to adopt or to continue scientific fish farming .For adoption of scientific fish farming along with training and demonstration, financial help is also essential as a tool for motivating the poor fish farmers. The participatory research at farmers' field (OFT) could play crucial role in technology improvement and disseminations.

References

Chambers, R. 1992. Rural Appraisal. Rapid Released and Participatory. The Institute of Development Studies. Discussion paper 311 Brighton U K.

David, B. 2003. Training needs of fish farmers in scientific aquaculture. *The Allahabad Farmer,* **LVI(2):** 13-18.

David, B. 2006.Training need assessment through PRA techniques in fish culture. *New Agriculturist,* **17(1,2):** 181-184.

Joachina, T. & M. G. Heather 1991. Participating rapid appraisal for community development 2nd ed London, Pp 24-28.

Mascarenhas, J., P. Shah, S. Joseph, R. Jayakaran, J. Devaram, V. Ramchandran, A. Fernandez, R. Chambers & J. Pretty, (Eds.),1991. Participatory Rural Apprasial, PRA Notes No,13 *Proc. of the PRA Trainees workshop,* Bangalore,11ed, London,133.pp

McCracken , J. 1988. Participatory Rapid Appraisal in Gujarat. A trail model for Aga Khan Rural Support Programme *(India). 11ed , London,* 83 pp.

McCracken, J. & G.R. Conway 1988. Training notes for agro ecosystem analysis for development. *Ethiopia, 11ed , London,* 55. pp.

Mishra, A.K. & B. Bihari 2003. PRA for identification of natural recourses management related constrains in farming in eastern U.P.-A case study. *The Allahabad Farmer,* **LVI(2):** 26-41.

Mishra, A.K., D. Kumar, K. Swaroop, R.K. Singh , R. Chandra & S. Dhar 1996. Group report on field experience training (unpub.) *54th FOCARS NAARM,* Hyderabad, Pp. 185.

Pandey, D.K. & A. Prasad, 2008. Training need of fishery officers in Tripura. *Agri. Ext. Rev.,* **XX(2):** 30-33.

Prasad, R. 1993. Predictions of technology adaption; A case of alkali affected soils. *Indian J. Ext. Edu.,* **XXIX(1&2):** 69-75.

Sabarathnam V, E. 1988. Manual a field experience training for ARS scientists. NAARM, Rajendranagar.Hyderabad. p 30.

Tarnutzer, A. and Battig, C.H. 1994. Participatory rural appraisal(PRA) or rural livelihood systems in Sikkim with special reference to animal and crop husbandry. A joint study by Government of Sikkim and inter corporation. Study Group Of institutions, Human Action and Resource Management, Institute of Geography, *University of Zurich*, 105 pp.

VanVeldhuizen, L., A. Waters-Baye, & H. de Zeeuw 1995. Learning for participatory technology development. A training guide . *ETC Foundation, the Netherlands*, 389 pp.