RESEARCH IN FIELD EXTENSION - AN APPROACH FOR SUSTAINABILITY

Kella Lakshmana, I.M. Iqbal**, R. Netaji Seetharaman*** and R. Ranga Swamy*****

Though the need for research in physical and biological sciences has been well recognised for centuries, the importance of research in social and behavioural sciences including extension was not recognised. The research in agricultural extension is of relatively recent origin traced back to mid 1950's. It was born out of practical considerations such as making improvement on extension work. Studies on communication methods and social change were needed to make effective interventions for increasing farm production. Though the research in extension is 40 years old. India is one of the important centres in extension research (Singh, 1998). The history of extension discipline in India reveals that organised effort in extension research started with establishment of discipline of extension in agricultural colleges and farm Universities. It was evolved through continuous rythemic shift with the changing needs of farming community and it need to be strengthened further in the 21st century with the changing concept in agricultural development.

India experienced a four fold increase in food grain production from I *9505* to 1998 eventhough the available land area for cultivation had decreased. The achievement was because of high intensity cropping and cultivation of HYV which were highly input responsive. Farmers used chemical and synthetic pesticides, fertilizers and growth promoters in higher quantities with a motive to get higher yields.

* *Ph.D Scholar, Extension Education Institute, ANGR Agricultural University, Hyderabad 500 030.*

** *Associate Professor, Dept. of AE & RS, TNAU, Coimbatore*

*** *Professor & Head, Dept. of AB & RS, TNAU, Coimbatore*

**** *Associate Professor, Dept. of Statistics & Mathematics, TNAU,Coimbatore.*

Paper presented in National Seminar on Extension role of Agricultural Universities in India held at UAS., Bangalore, June 8 — 9, 2001.

The concept of sustainability has been aroused because of increasing soil and environment pollution which were caused by injudicious land utilization with high intensity cropping and dumping of chemical and synthetic pesticides, fertilizers and growth promoters. At this juncture, there was an additional responsibility on agricultural research system to minimise the soil and environmental pollution, keeping the primary objective of achieving the targeted food grain production intact.

The two approaches to achieve sustainability in Indian agriculture are

i) Integrated Farming Systems (IFS)

ii) Blending of Indigenous Farm Practices (IFP) into modem technologies

These two approaches have advantage that they are eco-friendly, economically feasible and the IFS gives more income per unit area by reducing the cost of production and increasing income per unit area.

i) Integrated farming systems

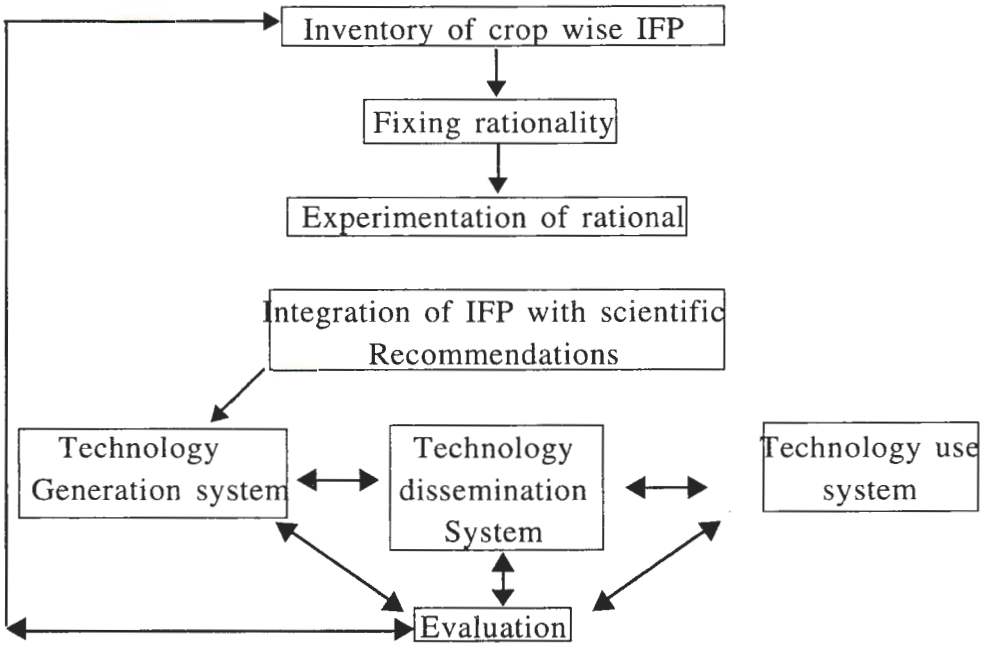
Farming system is defined as a unique and reasonably stable arrangements of family enterprises that the household manages according to its physical, biological economic and socio cultural environment in accordance with household's goal, preference and resource. The farm wastes are better recycled for productive purpose in the integrated system. A judicious mix of agricultural enterprises like crop production, horticulture, silviculture, sericulture, dairy, poultry, piggery, fishery etc. suited to given agroclimatic conditions and socio-economic status of the farmers would bring prosperity to the farmers.

In IFS, the waste products of rice formed 33 per cent of the poultry feed and the feed cost could be reduced by *57.5%* by substituting rice grain, maize, oil cakes of crop component and the Luceme grown around fish pond. In commercial poultry farm, cost of production per egg will be around 42 paise, by way of reducing the feed cost, the cost of production per egg under IFS was reduced to 19 paise. Thus the net income under the IFS was Rs.15,145/ acre (0.4 ha) while Rs.9,010/acre (0.4 ha) was obtained from the cropping system rice-rice-green manure (Rangaswamy *eta!.* 1988).

ii) Blending of Indigenous Farm Practices (IFP) with modern technologies

The study was conducted in Srikakulam and Vizianagaram districts of North Coastal Zone of Andhra Pradesh in two phases. First phase involves identification or documentation of IFP through informal interview with selected elder farmers and rationality was found out by referring questionnaire to 30 agricultural scientists and testing of awareness adoption and knowledge of farmers on IFP by administration of structural pre-tested interview schedule for 120 farmer respondents.

The results shows that out of 96 identified IFP on 6 major crops existing in the study area 80.21% were rated rational by the scientists. The respondents have more awareness, adoption and knowledge on rational IFP than the irrational IFP. This shows that rational IFP are more liable and compatable with the culture and traditions of the farming community hence it is very easy for the extension agency to disseminate such technologies. So identification of viable rational IFPs which are economically feasible can be disseminated by involving a



Suggestive model for effective harnessing of IFP

participatory extension approach. I would like to suggest a model for effective harnessing of IFP to achieve the sustainability in Indian agriculture.

In this model, extension workers are encouraged to identify the existing IFP intensively and test verification of IFP by discussing with the team of agricultural scientists for their rationality. Experimentation of selected rational IFP at farm and research stations to test the validity behind the IFP with integration of scientific technologies and for their cost benefit analysis. These integrated technologies further disseminated to technology user system for their adoption. Evaluation of these three systems involving a participatory approach further strengthens the scope for identification of unidentified IFP and their integration into modern technologies.

It could be concluded that the two suggested approaches are very much useful in keeping the environment pollution intact in addition to the primary objective of achieving targeted agricultural production. This is because rational IFP are eco-friendly, economically feasible and culturally compatible with the traditions of the society and IFS is an eco-friendly and economically feasible approach and give more income per unit area of land.

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