

1. EXTENSION EDUCATION : AN INTRODUCTION

S.V.N. Rao and A.W. van den Ban

A major objective of the Indo-Dutch Project on the Bioconversion of Crop Residues is to promote research which makes a real contribution to livestock development in India. This is achievable only under the condition that research identifies and develops new knowledge which makes this development possible. Also, the research findings should become known to extension workers and to the farmers keeping livestock. Therefore, cooperation between the extension services and farmers is crucial. Unfortunately, many agencies involved in animal husbandry development in India, only pay limited attention to extension and have only a few well-trained staff members in extension. Many workers who are active in extension in India have limited access to the international literature.

The BIOCON-Project was therefore asked to prepare a reader on extension education with Indian as well as foreign publications. Indian publications by authors who know the international literature, have the advantage that they can show how research in other countries can contribute to solving problems in Indian agriculture.

It is not possible in this reader to discuss all aspects of extension education. A selection is made of topics which are considered to be a crucial element of animal husbandry extension at the present stage of development.

Extension : inputs or knowledge

Animal husbandry development agencies perform many functions which are only a part of what is called extension, e.g. provision of health and A.I. services as well as the distribution of inputs, often at subsidised rates. They also try to increase the competence of farm families in animal husbandry through improved communication with relevant sources of information such as research scientists and successful farmers. That is their extension task, as clarified in the articles of Misra and Röling. Misra's article combines a good knowledge of the international literature with the experience in agricultural extension in India. It requires some translation to make it applicable for animal husbandry, but that is unavoidable with the lack of theoretical and practical development of animal husbandry extension. We have included only about 10% of the publication by Dr. D.C. Misra, because most of our readers will be able to borrow the full publication from libraries, e.g. at the Department of Agriculture.

Extension education can be seen as a branch of adult education as well as a branch of communication. Most Indian books on extension discuss mainly the educational aspect. Röling, who received his

Ph.D. in Communication with Everett Rogers, stresses more the communication aspects. His article helps in understanding what extension is able and unable to achieve. No organization will invest in extension unless it expects that this investment helps to realise its goals. Farm families will resist being influenced by extension organizations unless this helps them to reach their own goals better. Röling analyses this basic dilemma in extension.

Extension and policy

As a policy instrument extension has an important advantage over providing services or distributing subsidies. If an extension agent gives a farmer new knowledge, he does not lose this knowledge. Nothing prevents him to give the same knowledge to another farmer. But if the stockman or veterinarian provides the farmer or the cow with semen or medicines, he can not use this again. This is a reason why investments in extension give a high rate of return, if the extension organization is well managed and directed towards dissemination of new knowledge. Usually this rate of return is much higher than the return on other investments in agricultural or animal husbandry development (Birkhaeuser et.al, 1991).

Top down, participation and system specificity

Indian extension organizations are moving away from a top-down towards a more participatory approach. Based on experiences of the World Bank, Hayward (1989) has shown that a top-down approach can work well, if one has a technology which is profitable for all farmers and if the extension agents know these farmers and their situation well. This was the case with the introduction of the high yielding wheat varieties in Northern India, some 30 years ago. The situation in rainfed agriculture, but also in much of animal husbandry, is quite different. There, in order to solve farmer's problems it is necessary to integrate information from research with information from the farm families about their experiences, their goals and their situation. Many farm women know much better which fodder they can collect where and when for their animals than their veterinarian. Traditional top-down extension approaches will not be successful in this case, a more participatory approach is required. However, extension organizations have difficulties to change towards this approach. One reason is the lack of knowledge and skills, another reason is that this approach requires a change in the whole structure of the extension organization. A field level extension worker is not able to work in a participatory way with his or her farmers, when (s)he works in an organization with an authoritarian style of leadership. To discuss this problem we have considered it useful to include several articles which discuss the experience inside and outside India in changing towards more participatory extension approaches.

In the past, development projects supported by the World Bank often used a top-down approach. One now realises that this a major reason for the limited success of many of these projects. For this reason among the World Bank staff a systematic learning process has

started to discover how one can use more participatory approaches. A similar learning process is starting in some Indian Departments of Agriculture and Animal Husbandry. For this process one could profit from the experience of the World Bank. Therefore we included a small section of a report which describes this experience. This section helps to clarify the terminology used when talking about participation.

Communication

Indian communication scientists study how a more participatory approach can be used in rural development. A closer cooperation between these scientists and extension scientists would be in the interest of Indian farm families. Therefore we included an article by Ramanamma from a book on development communication. Other articles in this book can help to strengthen the theoretical foundation of extension research.

Indigenous knowledge

The work of Robert Chambers, a Britisher with considerable experience in India, has had much influence on thinking about rural development all over the world. This is partly because of his stimulating ideas, and partly because his books are published at an affordable price. We include an article on his Farmer First model, which challenges the idea that new ideas about farming come from research institutes. Resource poor farmers often profit at least as much from experimentation by their colleagues. Indigenous knowledge is now recognised as an important resource for agricultural development to a considerable extent as a result of the work of Michael Warren. An article by him and his colleagues discusses how this knowledge can be used in extension.

A danger with a new approach is always exaggeration: the idea that the new approach will solve all problems and the old approach is completely wrong. Also participatory extension approaches face this danger. Therefore van den Ban analyses in which situation a more participatory approach and in which situation a more top-down approach is desirable. He concludes that in most situations an approach somewhere in between both extremes is desirable, but often it should be more participatory than the approach used in the past. This article is influenced by discussions with participants in seminars at NIRD in Hyderabad.

Neither agricultural research nor agricultural extension can be successful if there is not a good linkage between them. However, often this linkage is weak. ISNAR, the International Service for National Agricultural Research, has conducted a large study in order to find ways to improve this situation. This research is briefly summarised in Kaimowitz' article.

A more extensive summary: D. Merrill-Sands and D. Kaimowitz, The technology triangle: Linking farmers, technology transfer agents and agricultural researchers, is available free of charge for those who write to ISNAR, P.O. Box 93375, 2509 AJ The Hague, The Netherlands.

An article by McDermott shows that many new technologies cannot be developed at research institutes, but only through a close cooperation between researchers, farmers and extension agents.

A major challenge lies in the organization of a good system of communication between their researchers and the farm families keeping livestock. Suggestions how this can be realised are made in another BIOCON report (van den Ban, 1994). At ICAR institutes the extension divisions should play a major role in this communication system. However, different people have different expectations about the role they should play, and it is impossible to meet all these expectations. Clear decisions should be made on which roles they should play in the system and which not. An article by van den Ban analyses which different roles these divisions could play in order to help to make this decision. This article is based on a visit to the Central Soil Salinity Research Institute, but at other ICAR Institute similar roles are possible. At NDRI the situation is more complicated, because it is also responsible for teaching M.Sc. and Ph.D. students and the roles are performed by three different units, the Dairy Extension Division, the KVK/TTC and the Operation Research Project.

In the Research-Extension Linkage System a major role of researchers is the training of extension Subject Matter Specialists. This requires decisions on how to train and what to train. Suggestions on how to train are made in an article by Radhakrishna, Etling and Bowen. They propose to use different training methods than those which are most often used at present. Accepting their proposals would have as a result that researchers learn in this training about problems and experiences of extension agents and farmers. An article by Byra Reddy discusses which competences extension workers of different levels should have. He speaks mainly of agricultural extension workers, but it is not difficult to apply his principles to animal husbandry extension workers.

The success of agricultural and animal husbandry development depends to largely on the managerial capabilities of the farmers. For crop production this is analysed by Byerlee, an economist of CIMMYT, but his main ideas are also correct for animal production. Lack of managerial capabilities is e.g. one of the reasons why a good deal of the production potential of crossbred animals is not realised. Farmers could get a higher return from their animal feed, if they were better able to calculate the optimal ration. A difficulty in increasing their managerial capabilities is that in India animal management is to a large extent the responsibility of the ladies and their educational level is low. According to the UNDP (1992) the female literacy was 35% in India in 1990, against 88% in

Sri Lanka, 72% in Indonesia and 94% in Thailand. In rural areas this rate is considerable lower than in the cities. Improved general and agricultural education of both genders could make an important contribution to crop and animal production.

Communication

The rapid development of communication technologies offers many new opportunities. Video is now widely available, although it does not always work well in villages, because of lack electricity or repair services. The combination of videos, CD-ROM and computers starts to offer exciting new opportunities. This may result in a technology driven communication system, whereas a user driven communication system is more effective (Leeuwis, 1993). The latter is a system that provides information and that uses communication methods for which the users feel a need. A problem is that we have very limited knowledge of the information needs of Indian livestock farmers and of the way they use various media. Fortunately Indian communication scientists start to analyse the potential of indigenous communication methods. It is likely that the results of Western communication research are not applicable in the Indian society without some modification. This issue is discussed in the articles of Sujana, and Dubey and Bhanja.

Adoption

Research on the adoption and diffusion of innovations has had much influence on extension theories, certainly in India. Fortunately, several reviews have been published. Best known is the review by Rogers (1983). Dasgupta (1989) published a review of 343 Indian studies and recently Rao, Kherde and Sohal (1993) reviewed about 50 studies on the adoption of dairy innovations, all these studies are different from those reviewed by Dasgupta. We have included this last study. Internationally there is now a move to replace the adoption research by research of Knowledge and Information System (e.g. Roling, 1988). Van den Ban (1994) will soon publish a discussion of the way in which this research can help to improve extension in India. This is not included here, because it is easily accessible to most of our readers.

Conclusion

This reader can give only a small selection of the literature relevant for improving animal husbandry extension in India. Therefore we end with a proposal for a library on extension education. It will be difficult to give good training in extension education without such a library. However, the choice of the books which have been included in this list and which have been excluded is subjective. It is also quite possible that there are valuable publications, which are not known to the editors. Clearly budget restrictions will not make it possible for many readers to buy all these books. Therefore, part 6 of this reader mostly lists references which are available free of charge.