AGRICULTURAL EXTENSION
IN THE DEVELOPING COUNTRIES

A BIBLIOGRAPHY

WAGENINGEN/THE NETHERLANDS/1968
Agricultural extension in the developing countries

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PREFACE

This bibliography is intended to serve in the first instance all those who are charged with the training and guiding of agricultural extension personnel in the developing countries in identifying sources of information that would help them in their job. An attempt has been made to include the most relevant publications for this purpose, but experiences with agricultural extension have been discussed so frequently that it was not possible to include all publications. A choice of the literature of related sciences, dealing with subjects on agricultural extension, is included.

In general, only literature in English, French and German, mostly published during the last decade, has been mentioned.

A serious effort has been made to classify the publications under the appropriate headings, but the reader will understand that classifying often is arbitrary, because many publications are covering two or more topics.

In making the annotations, use has been made of the valuable knowledge gathered in "Tropical Abstracts" and in "World Agricultural Economics and Rural Sociology Abstracts" (WAERSA). Due acknowledgements in this respect are paid to the Editors of both abstracting journals, viz. the Royal Tropical Institute at Amsterdam, and the Commonwealth Bureau of Agricultural Economics, Oxford, U.K.

The author feels indebted to Dr. ir. A.W. van den Ban, Professor in Extension Education at the Agricultural University in Wageningen (Netherlands) for his advice during the preparation of this paper.
GENERAL WORKS ON AGRICULTURAL EXTENSION AND COMMUNITY DEVELOPMENT


The writers present many aspects of the subject and give numerous examples of projects leading to failures or to satisfaction.


A comprehensive textbook on community development.


The book gives the experience of the author particularly in S.E. Asia. Only extension principles applicable in Asia and the Far East are described, illustrated with practical examples.

Id. / Increasing food production through education, research and extension. Freedom from Hunger Campaign, Basic study 9, FAO, Rome, 1962. 78 pp.

This study, based on known facts and agreed conclusions of experts, briefly reviews agricultural education, research and extension in the developing countries. A good coordination of these three closely interrelated services is essential, and can best be obtained when the three functions are under one administration. In most countries, however, agricultural schools and colleges are under a ministry of education, while research and extension are under a ministry of agriculture. Secondary schools of Agriculture have not been successful. The development of agricultural research, education and extension in developing countries is a matter of vital importance in the movement for increasing food production (Tropical Abstracts 1963-1969).

A clear view of the methods which appeared to be useful to stimulate development in the less developed countries.

A textbook on community development adapted to the circumstances in India.

A textbook grown out of actual extension experience in India, as practised in the extension project, carried on at the Allahabad Agricultural Institute. This project is divided in three parts: a pilot extension project in some 400 villages, a training programme for extension workers and a programme for the production of extension materials. The Gaon Sabhi is the extension agent in the Allahabad Extension Project.

This manual was drawn up as a model for member countries by a committee set up at the first session of the FAO regional working party on Farm Management for Asia and the Far East in Japan, 1961, and was approved in 1964. It is written for agricultural advisory workers with sufficient schooling and aims to provide answers to three main questions: 1. Why is such a manual needed. 2. What are farm management programmes under extension. 3. How should extension workers help farmers? The main part of the book is devoted to question 3.

A presentation of the major phases of extension education with which all extension workers should be familiar. Three chapters are devoted to the organization and the county unit in extension in the United States. As the author feels, India can modify the successful features in the U.S. extension scheme to meet local conditions, and avoid weak and cumbersome features. The early movements of agricultural extension in India and the launching of the Community Development Plan in 1952 are outlined. Stress is laid on the importance of personal meeting, the group discussion method, visual and audio-visual aids and youth clubs. The responsibilities of the village teacher, the local leader and the gramsevak are covered. Each of the 28 chapters is followed by questions for study and discussion and by a list of references for further reading (WAERSA 1963-2520).

Compilation of ten previously mimeographed papers, used in extension at the Graduate School of the Inter-American Institute of Agricultural Sciences. Subject matters treated are extension, education, philosophy, evaluation in extension work, specialists in extension, extension organization, local leaders in extension, principles and guidelines, prerequisites to progress in agriculture, coordination and the United States Cooperative Service (WAERSA 1964-1035).


A textbook on agricultural extension cooperation.


A well known U.S. textbook on agricultural extension. Explains what extension is, how it works and what its programmes are. Chapters on methods and programme preparation and development. Mainly drawn from United States experience. A chapter is included on the application of extension principles to other countries.

Id. / Trabajo de extensi6n agricola.


A translation of "cooperative extension work".


The book is published on the occasion of the tenth international extension summer school at Wageningen. It contains articles by many authors. Most of the articles deal with certain critical aspects of extension work. Subjects included are: the role of rural extension in developing countries, comparative extension studies in Asia, extension and community development, social aspect of rural extension, evaluating of rural extension, agricultural cooperatives in more and less developed countries, etc. (WAERSA 1964-1943).

A textbook, divided into two parts: 1. extension principles and methods. 2. extension practice.

A textbook on supervision in agricultural extension.

A practical guide to those who have the task of training advisory and extension workers and local leaders in agriculture and community development. It aims to help field workers to improve their methods of securing the cooperation of farmers in their efforts to transform land use and farm management practices.

A review of the vast range of activities carried on under the name of extension services. The authors describe the scope of these activities and evaluate them critically. They indicate possible lines of development in the near future. The authors give separate treatment to each of the two main kinds of university extension that have developed in the United States, the so-called general extension, and the agricultural extension carried on under the auspices of the Cooperative Extension Service.
They point out that, in virtually every university, the two services are under completely separate jurisdictions. The advantages and disadvantages of this separation are set forth, and the possibilities of a unified service are discussed.

A survey conducted by the Agro-Economic Research Centre of Allahabad University (India) in a village only 37 km away from Allahabad revealed that less than one-third of the villagers knew of the existence of 5-year plans. Among students and cultivators only 40% had this knowledge. All media of mass communication should be used in order to create plan-awareness in village people. On the basis of the present survey it is expected that the spoken word will have the greatest impact. Teachers, students and other educated people should form the spearhead of a movement to spread information on the development plan in villages.


A summary of the empirical findings from farm practice adoption research.


In this study the same farm practice was studied in seven different villages in West Bengal. Each village is a social system and is different from the other villages. They vary in such factors as religion, caste structure, education, land tenure, urban contact, etc. It is reasonable to assume that a new practice will meet with different kinds of reception in different villages. In fact, this has happened, as is evident from the data. While the logistic curve has been fitted to the data of all villages, you can read from the curves different slopes. Nevertheless the same result has been obtained. It is noted that similar curves of diffusion have been found in both India and the U.S.A.


To examine the nature and interplay of the various factors governing choice of crops and techniques being adopted by cultivators, data were collected from four to seven holdings in each of 14 randomly selected villages in the Delhi territory. The need for family food, and fodder and feed for cattle
are shown to be the principal determinants of the cropping pattern in the area. Production credit was most needed to buy improved seeds and fertilizers. High interest rates, high cost of membership of cooperatives and low credit-worthiness under existing systems were the most mentioned difficulties in obtaining credit (WAERSA 1966-1970).


Data were obtained from farmers by interview and questionnaire while secondary sources are also used extensively. Traditional and improved practices in wheat cultivation are examined and stages of adoption are identified. The findings indicate that among the various practices, the responses are very positive to fertilizers, insecticides and pesticides. The reasons identified for non-adoption of improved seed bring out the superiority of the local seed over the improved seed. The lack of irrigation or unsuitability of water is considered to be the major factor for non-adoption of fertilizers (WAERSA 1966-1971).


A description of adoption of innovations.


A case study on the use of fertilizer was carried out in 1962 in a village in the Delhi territory. The average rate of application of nitrogenous fertilizers was only 16 lbs. of nitrogen per acre of irrigated wheat, compared to the recommended 40 lbs. The observed gap appeared to be related to the size of the farm, literacy, and irrigation facility. It is concluded that unless the technological change is of a particular magnitude, it does not have a significant impact on the farm economy. There is a long gestation period between the knowledge of a technological change, such as the use of fertilizer, and its adoption (WAERSA 1966-4124).

FLIEGEL, F.C.; P. ROY; L.K. SEN and J.E. KIVLIN /
Innovation in India. The success or failure of agricultural development pro-
grammes in 108 Indian villages. Research Report no. 9. Project on the diffusion
of innovations in rural societies. National Institute of Community Development,

A research report concerned with the human factors involved in the diffusion
and adoption of improved agricultural practices in Indian villages. It is a
part of a larger study carried out in three countries: Brazil, Nigeria and
India. The project consisted of three phases. In the first phase, the village
was taken as the unit of study; factors that facilitate or inhibit the success
of agricultural programmes for the whole village were studied. The present
report provides results from the first phase. In the second phase, the focus
of the study will be on the individual farmer. The third phase of the project
will be devoted to a follow-up study of an experiment in mass communication.

HAVENS, A.E. / Testing a social psychological model for predicting the

JONES, G.E. / The adoption and diffusion of agricultural practices.
WAERSA 9, (1967) 3: 1-34.

A review article mentioning 468 references.

Id. / The diffusion of agricultural innovations. J. Agr. Econ.,

The article deals with innovational activity at the level of individual adopters.
Three groups of factors are involved: 1. characteristics of the innovations;
2. communications media; 3. personal and sociological characteristics of
potential users. Emphasis is on the human factor, too often neglected by
agricultural advisory services. Adoption and diffusion of appropriate social
organizations and individual patterns of behaviour are essential complements
to technological progress (WAERSA 1963-2581).

JUNGHARE, Y.N. / Factors influencing the adoption of farm practices.

A study to determine the effect of selected factors influencing the adoption
of recommendable farm practices in the rural community of Nagpur. A
random sample of 129 farmers was interviewed on the following variables:
1. adoption of practices, 2. extension contacts, 3. formal social participa-
tion, 4. socio-economic status, 5. education, 6. age, 7. social status, and
8. economic status (WAERSA 1964-1997).

The book presents a comprehensive and clear view of the factors influencing human behaviour. Opinions of friends and neighbours appear to be of determining importance.


The most important factors associated with the adoption of improved agricultural practices were found to be factors concerned with the farmer's financial position, education, contact with extension, leadership functions, attitudes, degree of progressiveness, knowledge of practices, aims and efficiency of production. The results of this study in a Bantu farming community agree in general with overseas findings within the Western cultural pattern.


Data were received from 457 farmers on recently introduced farm practices and changes made in kinds or brands of farm supplies purchased. Analyzed were the questions where the farmer first learned about the new practice, where he got additional information about it, and the information source most influential in his decision to adopt or use it (WAERSA 1966-4130).


Participation in agricultural programmes among caste-groups in North India.


Generally the farmers are willing to participate in agricultural development by changing farm practices, provided suitable technical information is presented to them in an acceptable manner (WAERSA 1963-968).
Studies undertaken to assess technological change in Indian agriculture are critically examined. Most of the investigations on technological change and its impact are confined to the "Package programme". It is concluded that farmers with larger holdings more readily adopt technological change, which then gradually seeps down to farmers with smaller holdings; secondly, farmers who accept one type of improved practice also readily accept other similar types of practice. If extension efforts are concentrated on the most important improved practice, namely fertilizers, which a very large proportion of farmers can adopt profitably under their present methods of cultivation, then they will also be induced to adopt other improved practices like plant protection, improved implements, etc. (WAERSA 1966-4126).

98 farmers were included in a farm management study in Mysore state, where ragi forms an important food crop, were interviewed to assess how far improved practices had been adopted, and their impact on yields. The results showed that 20 percent of the farmers had adopted no improved practices, and nearly 70 percent only one or two. The introduction of such practices, especially in combination, could possibly double current yields (WAERSA 1965-2110).

The author discusses various types of projects which hold pride of place in most agricultural extension programmes of developing countries. They include: 1. the introduction of better varieties of food crops, 2. the introduction of better agricultural techniques, 3. the use of fertilizers, 4. the use of green manure, 5. soil conservation, and 6. the control of pests and diseases. The reasons why the measures mentioned under 1. and 2. were generally successful, whereas those under 3, 4, 5, and 6 had only a modest success, are explained. It is considered that the acceptance of agricultural methods depends not only on technical and economical factors but that the social background is of vital importance (Tropical Abstracts 1965-940).

The study is based upon interviews with 63 land owners in an agricultural
village. The adoption of four newly introduced practices and the patterns of informal communication among the villagers provide an interesting comparison to other studies on the diffusion of ideas and adoption of practices. The four practices studied include: line sowing of rice, use of insecticides, use of chemical fertilizer, and growing wheat. Impersonal sources of information were much more important in the "awareness" and in the "information" stage, while formal personal sources (agency, personnel) were most important in the "trial" stage (WAERSA 1961-1516).

A sample of 339 farmers was selected at random and interviewed. Results show that farmers with large farms increasingly made use of information media and adopted more farm practices. Contact with agricultural extension officers was convincing to farmers. On the other hand, farmers who consulted the village headmen, who are fast losing administrative control, were likely to have reacted negatively (WAERSA 1964-2873).

An extensive review of a large number of studies on the diffusion and adoption of agricultural innovations.

Through improved "diffusion" between the U.S. and the Netherlands of findings and methods, the quality of research on the diffusion of innovations in both countries can be raised. In the Netherlands, more attention could be given to building a theoretical model of the adoption of innovations and to analysing the relationship between farmers' goals and their cultural values. In the United States (and elsewhere) investigations of the relationship between the diffusion of new farm ideas and cultural norms will be fruitful (WAERSA 1963-1816).

Information sources and the reasons for non-adoption are discussed. Among the economic factors affecting adoption are: uncertainty, capital requirements, income level or economic status of farmers, expectation of net
marginal returns, suitability of the practice to a particular locality, distance of locality from marketing and educational centres, and size of holding and tenancy. The investigation reveals that a large number of farmers could not adopt new technology because they could not be contacted by any agency, and because demonstrations arranged were out of their reach. A large number of recommended practices did not promise attractive returns over local practices. The problem of supplies is of great importance and proper technical guidance is also required at the village level (WAERSA 1966-4127).


The author presents 3 cases of rejection of agricultural innovations in the Indian States of Orissa, Madhya Pradesh and Andhra Pradesh as a consequence of insufficient recognition of economic and socio-psycho-cultural factors. The introduction of the improved maize hybrid Ganga-10 failed mainly because the new variety was difficult to digest, and because it matured late and hence hampered the cultivation of the subsequent cash crop, mustard. The introduction of the Japanese method of rice cultivation failed because transplantation in lines and application of fertilizers were not accompanied by intercultivation or weeding in accordance with the traditional method (Tropical Abstracts 1966-2683).


The author studied this problem in a field survey, conducted in two villages in Uttar Pradesh State (India). The study reveals that the relative importance of different casual factors, which give rise to uncertainty in agriculture and consequently prevent adoption of improved practices, are different for different farmers cultivating holdings of different sizes (WAERSA 1964-2362).


A random sample of 200 cultivators was interviewed in 1962, covering two villages in the Punjab and two on the frontier, in each case one was irrigated and one not. Basic data were collected on acreage, labour, crops grown, equipment and marketing, and information obtained on the changes made in any of these in the previous year, and changes that farmers would like to
have made and motives. About 34 percent had made changes, mainly in the
crops grown, the type of seed, or the increased application of fertilizers,
mainly manure. Some 93 percent would have liked to make changes, partic-
cularly acquiring more livestock, better farm implements, more fertilizers
or better seed. The motive in most cases was economic. Sometimes there
was a physical lack of fertilizer or other materials wanted. No one consid-
ered making changes in the time or method of planting or harvesting, despite
governmental recommendations for improvements and the fact that this
required no additional credit, and no one considered altering methods of
storage or marketing, though there was considerable scope for improve-

STURT, D. W. / Producers response to technological change in West Pakistan.
A study was made to determine the extent and types of changes in farm
practices occurring on farms in N.W. Pakistan, and the reasons for such
changes. The greatest number of changes occurred where farmers were
made able to bear the risks involved. The major motivation appeared to be
the desire for more food for family consumption (WAERSA 1965-2111).

WE LCSH, D. E. / Response to economic incentive by Abakaliki rice farmers
The introduction and subsequent expansion of a new crop, rice, into the
Abakaliki area is described. For centuries yams were the chief crop. The
results of the project accord with the hypothesis that the small farmers
affected respond to economic incentives by allocating very efficiently the
factors of production at their disposal, and that their investment decisions
tend to maximize returns to scarce resources. The economics of rotations
explain the rapid adoption and expansion of rice production. However, the
initial development impact of rice appears exhausted, and only the introduc-
tion of a bundle of new, profitable factors of production will give further
impetus to development (WAERSA 1965-3143).

WILDE, J. C. de, et al. / Experiences with agricultural development
A great part of vol. I is devoted to factors affecting receptivity and incen-
tives to change (p. 45-70), and to agricultural extension (p. 157-197).
Vol. II presents the case studies on which this evaluation is based.
The present study is an attempt to determine the extent to which the goals of "profit", "quality of the product", "case and convenience", the desire to "keep up with the best farmers" and "maintaining good relationships with others" enter into making different types of farm decision. The study sample is 139 dairy farmers of Rock County, Wisconsin, and the five goals mentioned above are considered in relation to 14 types of farm decisions relevant to dairy farming. The analysis deals with: 1. "the variation in goals" considered by type of decision, 2. "the effect of status and role of the farmers upon goal orientation"... and 3. "the influence of the priority of goals on adoption of specific farm practices". "Profit" emerged as the most frequently recognized goal in the 14 decisions, followed by "case and convenience" and "quality or standard" (WAERSA 1961-2721).