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REGIONAL DEVELOPMENT AND AGRICULTURAL EXTENSION 1) 2)

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Introduction

The world is endeavouring to increase production in all branches of economic life. In tropical regions, in particular, increase in production is often not primarily a question of technics. The human factors, the factors which relate to social and cultural life and to mentality, also have to be taken into account in this connection; to a certain extent they are even decisive. The increasing of production demands renewal and change, not only as regards technics, but also, and especially, in the structure of social-economic and cultural life. Man, a social, economic, cultural and religious being, is concerned here both as an individual and as a member of the community. Increasing production calls for all man's energy and devotion, and at the same time for the alteration and renovation of technical methods, of social relationships and organizations, and of cultural institutions. Viewed from this angle, the increasing of production is identical with development – the development of human beings and society. Following Ruopp (1) we can define development as "the purposive adaptation to altered conditions (technical, social, economic, cultural) or the purposive alteration of those conditions." One of the criteria of development is, according to GINSBERG (2), "the growth of man's control over the conditions of life, i.e. his natural environment, his society and himself."

Man's natural environment is, in the first place, nature, which he tries to make subservient to himself by adapting his environment to the conditions of his life and, vice versa, by adapting the conditions of his life to environment. It is from this process that agriculture, inter alia, was born and developed, being that branch of national industry which, as the provider of food, raw materials and clothing, plays the most important and, moreover, the most prominent part in man's existence. The lines along which agriculture can be developed depend to a great extent on the demographic situation in the region. Sometimes – in the case of a sparse population – development of agriculture can take place directly by expansion, rationalization and intensification. Densely populated areas on the other hand, very often require industrial development. either beforehand or simultaneously, and/or emigration, accompanied by agrarian reforms. In most tropical territories, pressure of the population on the land constitutes a problem; the task of developing these regions is a difficult and formidable one, which demands that man should devote himself whole-heartedly to it.

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THE REGION AS UNIT OF RURAL DEVELOPMENT

In a memorandum prepared for the United Nations Scientific Conference on the Conservation and Utilization of Resources, De Vries and VAN BEUKE-RING (3) pointed out that the development of agriculture in the tropical wet belt has been determined in three directions, as regards the system of agriculture to be followed. In these humid regions, so the authors stated, the soils have, as a rule, been weathered intensively and lixiviated, as a result of heavy rainfall and high temperature; they are poor and, once exposed, are liable to the danger of erosion. An exception to this is formed by the soils of young volcanic regions, whose fertility is undeniable; but the soils of these regions are likewise subject to erosion. The populations of the humid tropical zone - so long as the population density allowed - adapted their system of land use to the poor soil conditions by applying a system of shifting cultivation in which, after having used the crop land for one or two years, the soil was given a period of rest lasting from 10 to 20 years in order to promote recovery of its virgin fertility. But what if an increasing density of population no longer permits such an extensive method of land use?

Traditional agriculture found two solutions for the problem of permanent utilization of the land on poor soils; modern tehnics and science added a third solution.

Traditional agriculture introduced perennials into its system of land utilization, Fields planted with food crops were no longer left fallow but were interplanted with perennial crops. The tree made its appearance in the agricultural system; frequently (for example in the case of coffee) the use of shade trees was also introduced. In this way permanent perennial cultures of rubber and coconut, and sometimes of coffee and pepper, were created, and so, too, large plantations of cocoa (Gold Coast cocoa farming (4)) came into being.

The second solution found by traditional agriculture consisted in terracing fields and making the transition to wet rice cultivation. In this connection irrigation was often a means of preserving the fertility of the soil. This method of rendering agriculture permanent involves a great deal — in fact, a very great deal — of work, and, in our times, the investment of large amounts of capital.

Modern technics and science, as already stated, added a third to these methods of permanent land use; they introduced the system of mixed farming, a system of land utilization in which livestock constitutes an integrating part of the farm, and in which rotation of pastures and crop land, and of crops and legumes (green manure) ensure maintenance of the humus content, and thereby the fertility and conservation of the soil. Mixed farming systems are also suitable for mechanical agriculture; they produce better, easier and cheaper results than can be achieved by wet rice cultivation. For the wet tropics, however, mixed farming is not a system of land use which is capable of immediate application; various problems, such as those of growing grass and upkeep of pastures, have to be solved locally before it is introduced. Nevertheless, it may be stated that perennial cultures, wet rice growing accompanied by irrigation, and mixed farming are the only three systems of agriculture which may be expected to preserve the fertility of the poor soils of the humid tropics, and protect them from erosion. In this respect the fertile soils allow somewhat more freedom, but the problem of erosion plays a part there too, so that, after all, these soils are also tied to the same agricultural systems as the poor soils of the humid tropics.

The conclusion to be drawn from all this is that any classification of land in the humid tropics will have to be seen against the background of these three systems of land use, in order to ensure the existence of a guarantee against exhaustion of the soil and erosion.

Land classification is not the subject with which we are dealing here. In

this connection, we would only say that this classification according to systems of land use will have to be directed towards preserving the fertility of the soil according to natural units. As a rule, the natural unit will be the river basin, because this is the type of area in which formation of soil and its destruction — the result of a combination of natural factors, such as rainfall, climate, topography, vegetation, etc. — are or should be kept in natural equilibrium. Land classification, with its background of soil conservation, finds in the river basin its unit of formulation and therewith its natural restriction. In this way development is tied by natural factors to the region — the region whose standard unit and maximum limitations are represented by the river basin.

The extent to which development is limited to the region is, of course, not only the result of the natural boundaries of the river basin. There are other — and no less important — units which delimit the region within which development should be viewed. It is the community itself, the community as a social and economic factor, which imposes this second limitation. One of the aspects of development is, as GINSBERG (cf. p. 1) observes, "the growth of man's control over the conditions of life — i.e. his natural environment, his society and himself."

In this statement express mention is made of the second sphere of limitation within which development can be independently formulated, viz. the society — the community, those circles of relatives and friends by whom social intercourse is experienced as a unit within which the same social, cultural and religious values obtain. These communities may be large or small, organised genealogically or territorially, open or closed, centralized or decentralized; but they are, and will continue to be, the unit in which life in all its aspects goes on, and inside the framework of which development will have to be effected and the individual will have to be enabled to exercise his natural gifts. Development thus finds its second form of limitation in the community itself. Development should therefore be formulated and effected on the basis of two elements, i.e. the river basin, and the human community which is recognised as a sociological unit within such basins.

Regional development, as meant here, has many aspects — technical, organizational, financial, economic, social, pedagogic, cultural, etc., etc.; and they are all interrelated. Agricultural extension is one of the features of this process of development. It will be further examined in the following pages.

AGRICULTURAL EXTENSION, AN INTEGRATING PART OF REGIONAL DEVELOPMENT

In almost all tropical regions agriculture occupies an important place in the overall picture of social-economic life, and the development of agriculture in these territories must be regarded as of primary importance. In the foregoins we have already observed that, from a demographic point of view, the situation in the densely populated regions of the tropics is frequently such that previous or simultaneous industrialization and/or immigration must create the conditions required spatial development of agriculture.

In thinly populated areas the expansion of the basis of farming, rationalization and intensification, can originate directly from agriculture itself, and industrialization can be achieved as a superstructure on a more developed agriculture. In all cases an appreciable growth, adaptation and education of the individual and the community will be necessary. Agricultural extension

will therefore have to be addressed to both the individual and the community. It will, however, not be possible to reach the community except via the individual. It may be said that the community is more than the sum of the individuals composing it, but, on the other hand, it is a fact that individuals are the living units of the community. "They (community and individual) are concomitants of the other; there is no community rebirth, no community development, where individuals remain unborn", says Ruopp (5).

Agricultural extension must therefore have the individual as its first objective. It goes without saying that, for this first, individual approach, persons should be selected as contacts who have influence in the community and who possess, to a sufficient extent, that insight and courage which are necessary to enable them to accept new points of view, methods and values. This personal approach requires of the extension officer not only tact, but also much knowledge of local conditions and relationships (Teko Soemodivirio (6)). As regards the former, no method or rules can be suggested; as regards the latter it may be stated that regional investigation, including an analysis of social relations, should precede the introduction of agricultural information. In this way an understanding of the problems of the region are obtained, this being a condition for the atmosphere of mutual confidence without which success in furnishing agricultural extension is hardly conceivable.

In making this individual approach with arrangements for agricultural extension, one should not aim too high, but keep within the limits of the knowledge, and of the capabilities, both personal and economic, of the person chosen to carry out the task, meanwhile working to increase this knowledge and these capabilities. Measures such as the introduction of new varieties of crops, and improved methods of cultivation and rationalization, particularly in respect of utilization of labour, have their proper place in the method of providing individual information. But, to give concrete examples: demonstration is the means par excellence of giving individual instruction. By going to work along these lines new degrees of prosperity may be expected; moreover, the information will be passed from one person to another.

It is obvious that the transmission of information by the individual method can not be other than a slow process. It will only be possible for results obtained by it to grow slowly - like an oil stain - from personal contacts. The person furnishing agricultural extension will, however, be very keen on reaching the masses more quickly. One method which attracts the masses is the competitive system. On the one hand, competitions always involve exchange of information, and personal contact; on the other hand, they reach the masses better and more easily than can be the case with information communicated to individuals. Competitions make an appeal to the instinct of rivalry which everybody possesses to a greater or lesser extent; the results obtained by competitions acquire an individual character that is judged per individual participating in them. In the competition system, the measures involved should be explained simply and concretely, so that they may be understood and appreciated. The criteria laid down for this appreciation should therefore be distinct and clear. Judging should be performed by a neutral committee, selected from the community and not taking part in the competition. The result of the competition and the award of prizes attached thereto should be accompanied by village festivities. It is recommended that, within the framework of the competition system, an endeavour should be made to make a community institution of it, organized by the community itself; the money required for the purchase of prizes, etc., should be raised by the members of the community, and the whole thing carried out as a community function.

Competitions are a powerful means of propagating and inculcating simple and concrete measures for promoting prosperity. In addition, they create the possibility of drawing comparisons, and so lead to a critical view being taken of what people do, thus making a contribution towards freeing agriculture from its traditional bonds. All this is important; but it is not sufficient. The community should not only be receptive to new methods, but should also be educated to apply them. In this respect the competition system as such is inadequate, and only the word "education" is appropriate to describe the measures which have to be taken.

Agricultural education has many facets; the questions of "by whom", "for whom", and "what type of education" should always be raised in considering the subject. There is reason to speak of different forms of agricultural education.

The first problem is always that of training the agricultural teacher. The situation everywhere in the world is such that the village teacher and the village priest exert great influence on the social life of the countryside. By giving the village teacher suitable training in agriculture and then charging him with the provision of agricultural education in the rural society a great need will be met as a rule. In the first place, these agricultural teachers, in addition to their task of giving ordinary elementary education in the elementary school, can hold courses for older pupils or for adults and independent farmers. These courses should only be of short duration (e.g. 4 months), and take up a few hours per week. The subjects to be taught should all be of a practical nature and related to the actual agricultural life of the community. Not more than one subject should be dealt with in each course, e.g. tobacco growing, control of erosion, the improved method of cultivating paddy, and the like. The courses should always be adapted to agricultural practice in the region, and be up to date. In pre-war Indonesia such agricultural courses led to the formation of agricultural societies which, inter alia, aimed at promoting among the members thrift, mutual grant of credits, co-operation in laying out terraces on steep slopes, joint buying and selling of agricultural products and agricultural requisites (7), etc., etc. These agricultural societies are of the greatest importance for the promotion of prosperity in rural districts; in course of time they develop into co-operative societies. According to Dr. Vroon, the management of these associations in the district of Kuningan (Java) was in the hands of agricultural teachers in 18 cases, in those of pupils in 13 cases, and in those of ex-pupils, village chiefs and village clerks in 2, 6 and 5 cases respectively.

The difficulties which presented themselves in agricultural education there were mostly related to the question as to how this education should be given to young people. Pre-war elementary education in agriculture and the pre-war schools of general agriculture and agricultural training schools were not satisfactory in Indonesia, for instance. The first-named form of education involved a continuation class at the elementary school (6th class), in which education was given an agricultural tinge by illustrating textbook information with

examples from agricultural practice. The schools of general agriculture, and the agricultural training schools aimed at training energetic farmers' sons to become independent and expert farmers in a two-year course, the students living as boarders. The general agricultural schools were unsuccessful because the instruction given was too theoretical and, in fact, was not agricultural education at all. The agricultural training schools, which provided practical training, were not successful because the pupils received such education at a very early age, and also returned to practical life whilst still too young to put into effect what they had learned, and too young to be able to start their own farms. Joosten (8) recommends that this type of agricultural education should be replaced by an elementary school of agriculture which will receive the young people after they pass out of the elementary village school and keep them for four years - or at least up to an age at which they may be sufficiently independent-minded to decide for themselves what they want to do. The object in view does not involve the pupils' staying at school the whole year round; on the contrary, during the first year they will attend school on only two days a week, and during the following years only one day a week. The result of this would be that the pupils, after finishing at the elementary school, could be put to work on their fathers' farms or elsewhere and at the same time be associated with a school or with a course of training, and would, in addition, have an opportunity of taking part in the work of youth organizations (analogous with 4-H clubs), etc. On school days instruction will be given in agriculture, and at the same time more understanding of and interest in the agricultural problems of the pupils' own region could be inculcated. If any form of agricultural education may be regarded as suitable to maintain regional development, it is certainly this form; it relates, as Joosten observes, to the problems of the region itself, that is, to both the natural and the community environments. It also has to be adapted, of course, to the environment of the pupils, an environment in which they were born and brought up, and in which they will live and work. All this has its advantages; but that is not all. It is on this level that a rural society gets a firm grip on its own development.

In the foregoing we have assumed that man is a being with a social, economic, cultural and religious life - an assumption which implies that proportionate attention will have to be bestowed on all these aspects if there is to be any question of harmonious development. In accordance with the restrictions we have imposed on ourselves we have only dealt with the one developmental factor of agricultural extension, which is very important in a rural society. This is the place in which to observe that similar attention will have to be paid to all aspects if social life is to flourish on a level like that just described in dealing with agricultural education. In this connection, the efforts of the Indonesian Government in promoting the foundation of rural development centres (Balai Pendicikan Masjarakat Desa) are very important (9). These centres, while devoting attention to all aspects of social life, aim at bringing about a balanced development of rural society. An endeavour is being made to achieve this by raising the general level of education by combating illiteracy, by instituting advanced education, by disseminating information, by organizing a system of clubs and co-operative systems, and by getting women to participate in public life. All this takes place in and around rural centres

where the people can assemble and where meetings, exhibitions or courses can be held, etc. In this way an effort is being made to effect reconstruction and education of rural communities via a general approach.

Conclusion

In the foregoing it was argued that development of tropical regions is dependent on conditions in the region concerned, bearing in mind the fact that on the one hand the region, for natural reasons, finds its unit in the river basin, and on the other hand, for sociological reasons, in the community or group of communities. Within this framework the part played by agricultural extension, in conjunction with agricultural education, in rural regional development is further analysed, the general being deduced from the particular.

The various ways of giving information should not be viewed as successive stages of extension, but only as different methods, which can be applied in turn or simultaneously, according to circumstances. No consideration was given to the means by which information can be imported, and of which extension, as a rule, makes use. Consequently, such means of extension as pilot farms, excursions and demonstrations (group methods), or publications and printed matter, radio, periodicals, newspapers, films, etc. (mass methods), personal visits, direct information and the like (individual information) were not touched upon. Here, attention is requested for only two recommendations, namely:

- a that agricultural extension in all its aspects (including agricultural education) should, to a large extent, be based on and supported by an adequate structure of research in the field of agriculture;
- b that various welfare services should co-ordinate their work and their information in a suitable manner, in order that the persons receiving information may be given this along agreed lines, and contradictions may be avoided.

It is of course necessary that the country girl and country woman should participate in the whole system of agricultural extension and education.

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