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SEMINAR ON SOCIAL RESEARCH AND PROBLEMS OF RURAL LIFE  
IN CENTRAL AMERICA, MEXICO AND THE CARIBBEAN REGION

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Paper

by

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- I. The rôle of research and of the social sciences
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ANNEX

(1) This paper is written in a personal capacity and is not an official paper by Unesco.

1. The opportunities open to developing countries to raise rural living levels through technical progress depend on the growth of suitable markets for the products of rural areas, the availability of capital and skills, the extent of international aid, and the capacity of the countries themselves to generate technological change or to receive and digest it from abroad. Their receptive capacity will be influenced by many economic, social and cultural factors. The aim of this paper is to draw attention to the importance of these factors, and to the possibilities of constructively analysing and understanding them through social research.
2. The tools for the understanding of these factors lie in the social sciences, and this paper consists of four sections, first the general section which follows dealing with the rôle of the social sciences and the nature of research, succeeded by the section on basic research in rural areas and third, specific applications of research, and the final section on conclusions.
  1. THE RÔLE OF RESEARCH AND OF THE SOCIAL SCIENCES
3. The social sciences have been called the policy sciences and this has caused some misunderstanding. The position taken in this paper is that their rôle is not to determine policy - that is the task of statesmen and administrators, who must also be guided by the historical and moral disciplines - but to assist in the formulation, execution and evaluation of policy by providing the necessary scientifically obtained social facts and analyses upon which sound policy should be based.
4. Research is frequently costly and takes time and it would be useless to maintain that all action programmes should be preceded by surveys and prior evaluations. But administration is also costly, and as the scope and complexity of administrative action increases so the scope and magnitude of error is extended.
5. Considerable progress has been made in recent years in measuring the economic returns from research in the physical sciences. A striking case is that reported in an article by Zvi Griliches in the Journal of Political Economy of October 1958, entitled: "Research costs and social returns: hybrid corn and related innovations". Mr. Griliches' estimates show that as of 1955 the return on the average dollar invested in hybrid corn research in the United States was at least 700% per annum. A further article in the same journal of June 1959 by Allan Meltzer estimated that basic research expenditure in the physical sciences in the United States was less than  $\frac{1}{4}$  of 1% of gross national product. Not all research has been as successful as that on hybrid corn, but these two figures are striking indications of the immense economic return which can be obtained from the devotion of a tiny proportion of gross national product to research purposes in the physical sciences.
6. The results of research in the social sciences do not easily lend themselves to similar measurement in economic terms. None the less substantial evidence exists of high economic return resulting from applied social research in agricultural communities. Impressive examples are contained in such works as "Human problems in technological change" - a casebook by Edward H. Spicer published by the Russell Sage Foundation and "Cultural patterns and technical change" - a manual prepared by the World Federation of Mental Health, edited by Margaret Mead and published by Unesco, and in the other publications listed in Appendix I to this paper.

7. It seems clear from the above that research itself, and research tools, are themselves resource factors, and that in evaluating the utility of research, social scientists must apply to the analysis the same scientific rigour they are expected to display in evaluating other factors.
8. This involves a consideration of indirect as well as direct effects, and on this point it is useful to recall a passage in "Science in the Modern World" where Professor Whitehead wrote: "In order to understand our epoch we can neglect all the details of change, such as railways, telegraphs, radios, spinning machines, synthetic dyes. We must concentrate upon the method (of research) itself; that is the real novelty, which has broken up the foundations of the old civilization". Although there has been no world-wide revolution in social thinking comparable to that in the physical sciences, there have been far reaching changes in the "methods" and "approaches" to social problems used by statesmen and administrators which can be attributed to the progress of the social sciences.
9. Research undertaken by social scientists is generally described as either "pure", or "basic", or "applied", or "operational" according to its subject matter and scope. It may be called pure (or fundamental) in that it contributes, or is intended to contribute, to the development of a scientific discipline or the scientific body of knowledge as such. Or it may be called "basic" because it established and interprets the underlying data necessary for the understanding of the problems of particular countries, regions or areas. In this paper we do not discuss pure research as such.
10. In the second section of the paper which we have headed "basic research" we deal with research directed at the economic potential, the demographic data, the conditions of living and the social structure of rural areas; though in the process of interpretation resource has of course to be made to the general body of social science thinking, which is the product of pure research. We also deal with the contribution which social research can make in the application of specific action programmes.
11. A number of the examples and cases quoted in the paper relate to countries outside the region. They are given in the hope that they will provide discussions which will bring out at the seminar both the similarities and the differences in the problems of the countries covered by the seminar compared with other areas. Up to recently the tendency of anthropologists and social psychologists was to emphasize the differences between societies and the "uniqueness" of each culture. This is not surprising since the striking differences of behaviour and structure between societies was the main stimulus to the classic development of anthropology as a science. Today, while cultural differences and factors of "uniqueness" still need to be studied, the more modern tendency is to give greater weight to the process of communication and to the mutual interaction between cultures.
12. This change of emphasis is partly the result of the immense advance in recent years in physical means of communication and cultural contact. It is also the reaction of social scientists to the challenge of international efforts to stimulate economic and social development on a world wide scale and to ease international tension.

## II. BASIC AND APPLIED RESEARCH

Resource factors: ecological, demographic -  
economic human capital education

13. The first step in understanding the situation in any area where economic and social conditions are to be changed is the establishment of a resource inventory. Research on physical resources falls outside the scope of this paper, except as regards the problem of the correlation of physical with human resources and living patterns, and the need to plan research in both fields concomitantly. This need has not been adequately respected in the past, although terms like "shifting cultivation", "degraded forests" make plain the interaction of human and physical ecology. The modern trend, reflected in many FAO reports, is to recognize that programmes of agricultural development are inseparable from social evolution.

14. The first social question in rural development projects has normally to be asked of demographers. The following figures give the annual rate of increase of population from 1950 to 1957 by regions published in the United Nations Demographic Yearbook: Central America, 2.6%; Middle East, 2.5%; South West Asia, 2.4%; South America, 2.3%; East Asia, 2.0%; Northern Africa, 1.9%; Tropical and Southern Africa, 1.8%; South East Asia, 1.7%.

15. These figures show Central America as the area with the largest percentage increase over that period. The latest estimates for the countries covered by the seminar, based on the 1960 Census, are as follows:-

POPULATION GROWTH IN COUNTRIES OF  
CENTRAL AMERICA AND CARIBBEAN AREA  
1950-1960

Countries	Total Population <sup>(1)</sup>		Annual Rate of Growth
	1950	1960	
Costa Rica	800.9	1171.0	3.8
Cuba	5508.0	6743.0	2.0
Dominican Republic	2135.9	2994.0	3.4
El Salvador	1855.9	2612.0	3.5
Guatemala	2790.9	3759.0	3.0
Haiti	3097.2	3505.0	1.3
Honduras	1428.0	1950.0	3.1
Jamaica	1403.0	1607.0	1.4
Mexico	25791.0	34626.0	3.0
Nicaragua	1059.0	1471.0	3.3
Panama	797.7	1053.0	2.8
Puerto Rico	2210.7	2353.0	0.6
Trinidad & Tobago	632.5	826.0	2.6

To understand these growth rates it is necessary to study the birth rates and mortality rates country by country, since changes in population increase may be due to either higher birth rates or lower mortality rates.

(1) Estimates (unofficial) from figures provided by United Nations, Population Branch, in thousands.

16. The rates of increase indicate that many of the countries of the region are faced with the problem not only of raising the income of its existing population but of providing at the same time for a large population increase. The difficulties of obtaining a continuing rate of increase in agricultural production of 2 per cent or above are very great. Of all the countries in the world only the United States of America was able to maintain an annual increase of 2 per cent in agricultural production from 1934 through the 1950's. In the period 1910-14 to 1945-49 the United States obtained an average annual increase of 1.34 per cent. Between 1912-14 and 1945-49 Argentina obtained 1.65, and Brazil between 1925-29 and 1945-49 obtained 2.25 per cent. Over the period 1925-29 to 1945-49 Mexico achieved a 2.25 per cent annual increase of output. The long-term figures of increase in agricultural productivity of less than 2% annually over some twenty years is of course made up of a series of short-term trends. It is to be noted that Mexico has doubled its agricultural production since World War II (which would represent about an annual rate of 6.5 per cent). This is the scale of the effect required.

17. While this seminar is concerned with rural problems, rural development has to be seen in terms of overall development and the problem of industrialization and industrial employment to absorb both population increase and the under-employment in the countryside. This issue, which is no less than that of the total problem of economic development, falls in the competence of the Economic Commission for Latin America and will not be treated here. ECLA has been engaged for the last fourteen years on basic research on this subject. Of very direct relevance to this paper, however, is the research on the rôle of human capital in agricultural development - associated particularly with the name of Professor Schultz. Analyses of total inputs and total outputs in agricultural production which he has presented show that additional inputs leave unexplained a large part of the total additional output. The amount of unexplained additional output varies from country to country and is attributed to the human factor, i.e. education, skills, technology, etc. In the United States (between 1910-1914 and 1945-1949) only 17 per cent of additional output was accounted for by increased inputs, leaving 83 per cent attributable to this "residual" factor. For Argentina (1912-1914 to 1945-1949) the equivalent percentage was 62, for Brazil (1925-1929 to 1945-1949) it was 45, and for Mexico (1925-1929 to 1945-1949) the percentage was 50. This point is taken up further in paragraphs 47 to 53 on the rôle of educational information in economic development.

18. The estimates of ECLA for Latin America as a whole show that productivity (per capita product) in the rural sector is largely stationary and that increases of productivity are almost entirely confined to the non-agricultural sector which has experienced increases of as much as 50 per cent in per capita product over recent years. (A similar situation is apparent in Jamaica<sup>(1)</sup> where the proportionate contribution of agriculture to the national income has with the growth of industry declined between 1950 and 1956 from 31 to 16 per cent of GNP at factor cost). At the same time 60 per cent of the population are dependent on the agricultural sector for their living. This percentage must be higher for most of the countries covered by the seminar since these overall figures for

(1) See "A National Plan for Jamaica", Kingston, 1957, and UN A/AC. 35/E.336.

Latin America include a number of the more industrialized countries of South America. A table indicating for some countries of the region the type of information required for assessing the relative place of agriculture in the economy is given below. It is taken from the American Economic Review (May 1954, page 585). (Participants may like to bring with them more up-to-date figures, or the comparable figures for countries not included. They will note that the population figures given for 1950-51 have since been corrected - see table in paragraph 15.)

19. The explanation of the failure of the per capita product of the Latin American agricultural sector as a whole to rise has to be sought partly in the problems of the prices of agricultural products for export and their instability, and partly in the factor of population growth and the overall problem of economic development to which reference has been made above, but also in social and institutional factors with which the seminar is predominantly concerned. When the figures relating to the effect of the "residual factor" on agricultural output given in paragraph 18 are taken into account, it will be seen how profitable the study of this factor and steps to maximize its effect are likely to be.

20. The effectiveness of the "residual factor" in raising output depends very largely upon a country's educational system, and upon the social environment as a whole and the set of man-made institutions which make up the fabric of society. Significant in the structure of a number of the countries of the seminar are relics of social dualism and the persistence of traditional communities not yet fundamentally altered by the process of economic and social modernization. Statesmen in these countries face the task of creating a fully integrated social and economic structure which can support and profit from the introduction of modern technology through a widening and deepening of their educational systems, institutional improvements such as land reform. Better distribution of income is also involved - combined of course with an increase of the national product itself - since in per capita terms there is centrally little to redistribute. Integration in a number of cases does not necessarily imply uniformity, and national needs are not necessarily the same as local needs. Research can throw light on both the "felt needs" of the communities concerned, and their "real needs" in terms of centrally accepted indices of living levels. Field studies made by social scientists in various parts of the world show the dangers of deciding to accept a priori either "felt needs" or "real needs" as a rule for action, and suggest instead that each situation should be considered on its merits. The rôle of education and information in bringing about an assimilation of "felt needs" with "real needs" is of course paramount.

21. Research closely related to the question of "needs" and how these are seen by the population is also required on questions of timing and balance in introducing new agricultural techniques with limited resources. At the village level this question frequently solves itself, since the alternatives which present themselves are few. But it has importance when groups of areas or whole regions fall for action by governments or regional institutions. Typical questions needing answer by administrators are: should we set up agricultural credit institutions first and leave the people for whom they are intended to react positively to them; or should we precede the economic effort by a campaign in the field of education or community development; or what combination of action is appropriate?

	1 Population 1950-51		2 Per Cent of Population		3 Labour force as per cent of popula- tion	4 Per cent labour force in agri- culture	5 Per cent GNP in agri- culture	6 GNP per capita	7 Exports GNP (per cent)	8 Per cent of population literate
	Absolute (000)	Per Km	Urban	In Cities of over 100,000						
Nicaragua	1,088	7	33	10	31	72.9	41	155	27	30
Guatemala	2,887	27	26.6	10	38	73.1	56.7	120	15	35
Cuba	5,469	48	43.9	22	32	41.5	28	371	34	78
Mexico	26,332	13	33.5	15	33	65.4	17	205	17	48
Jamaica	1,430	125	18.2	14	42	48.1	40.1*	155*	17*	-
Surinam	233	2	40 +	-	29	63	23	265	36	70

\* Based on national income, not GNP.

+ Oil exports not included.

22. In emphasizing the value of such research it is necessary to take a realistic view of research resources and of the requirements of the action agencies. The emphasis on the special characteristics of each community and sub-culture should not mean that each situation is found to be so unique that working rules cannot be established for action. Action itself can never be unique since it has to be carried out through officials and agents who must be given a common conception of the project and certain methods and rules on which to operate. The value of the approach based on the uniqueness of each community is that it brings to the fore the process of interaction between economic, social and cultural factors in a community.

23. This leads us towards the questions: what is a community and how does it develop? What is the process of social change among groups? What is the part played by education and the information media? But first we must mention institutional and administrative factors.

24. Institutions (legal and administrative systems, land tenure etc.) as resource factors - Stable but flexible institutions and efficient and adaptable administrations are a resource asset of cardinal importance. Just as agricultural development takes place in a sociological context, so it will be influenced by and may itself influence the prevailing institutions and administrative facilities. Since these vary greatly from country to country and widely differing results have been obtained there is scope for fruitful comparative study of administrative and institutional facilities. Unfortunately hardly any comparative study has yet been done though a number of national studies exist. To give an example from another region, the Rockefeller Foundation study "Crete" made in 1948 commented as follows on the prevailing administrative conditions: "Government officials of all ministries at the provincial level had to await decisions from the central government on many things requiring immediate action for effective solution. For example, one of the some agriculturists needed a certain type of chemical for a newly discovered tree disease. But not even limited funds could be obtained through regular channels without months of delay. Thus a whole year of experimentation was lost on what might have proved to be a very costly disease. ... Local responsibilities for government and social organization were few".

25. The case of Crete is diametrically opposed, it will be seen, to another case from a different region (namely Norway) which is discussed later in this paper (paragraph 57). Whereas organized government really entered and influenced the Norwegian valley only a few years ago, in the case of Crete thousands of years of administration, mostly by external powers (and here no doubt lies the major cause) had not succeeded, according to the survey, in producing efficient government up to the time the survey was made. Care has also to be taken by the outside observer in distinguishing between the system of administration as a piece of social structure and its actual functioning on specific problems. In an account of his study of the Tagalog Family Structure, Professor Bartlett Stoodley writes: <sup>(1)</sup> "In this regard, 'red tape' is an interesting fetish. Governmental bureaux are full of it but, for the Filipino, red tape is a ceremony for status demonstrations. After such a demonstration the Filipino official is very likely to brush all red tape aside and get down to business with surprising directness".

(1) "American Anthropologist", April 1957.

26. Among institutions which affect agricultural development we must include the laws and practices of inheritance and the position as to rural credit facilities and the land tenure system. (See especially Post War Changes in Some Institutional Factors Affecting Agriculture, Chapter IV of the State of Food and Agriculture, 1957. Published by the FAO.) The Annual Report for 1960 of the Inter American Economic and Social Council and the ECLA Economic Survey for Latin America, 1960, give estimates that in Latin America as a whole between three and eight per cent of the landholders own 60 to 80 per cent of the arable land. In Mexico (some years ago) and Cuba (recently) major land reform measures have been put into operation which will be well known to the participants in the seminar. Steps have also been taken in a number of countries to remedy the absence of agricultural credit by creating specialized agricultural banks and government-backed credit facilities. Difficulties of a social nature have however arisen in the utilization of these facilities. Uncertainties of land boundaries or tenure rights, cumbersome legal procedures, bias in jurisdiction, the illiteracy of farmers, all tend together with a traditional lack of "credit mindedness" for production purposes to inhibit satisfactory results. Unfortunately research has at present little to offer on the economic and social implications of different forms of institutional changes of this kind.

27. For the purpose of aiding the planning and execution of broad programmes of technical change involving social change study is required of the basic structure of government and the institutional pattern in the areas affected, and of the need for this improvement, and for the adoption of community development projects. Two types of comparative study are needed. The first would concern the effects of different types of administration at the local level upon the programme. The second show how institutional development and social change should move in close relation, so that programmes conceived at the government or regional level can be made really effective when they reach the village.

28. Thus we are now brought face to face with this issue. The improvement of techniques of production is only part of the solution of the problem of poverty in the economically underdeveloped areas; for another part of the solution we must turn to institutions. Institutions are man's means for maintaining the structure of society as a going concern, and also in some cases for bringing about orderly change. They are national, regional or local, and have been created consciously for specific purposes. They can therefore be changed consciously for other purposes. But at the village level social change is conditioned by the functioning of another type of social organization namely the community, which is probably a mixture of both conscious and unconscious development, but is certainly an entity of great complexity. To tamper with community without a close understanding of what it is invites failure, and history is strewn with the white bones of whole armies of institutional and administrative decisions which died by the roadside from the capital to the village. We come now therefore to "community".

Community: education and social change

29. Since the subject matter of sociology is man studied in his social relations with his fellows, it is from sociologists that guidance has to be sought as to the nature of "community".

30. Community is described in current sociology alternatively as a form of a social organization, or process, or structure, or as a system of social interaction or series of inter-connected systems; and a great deal has been written on the subject which need not be repeated here. The word "system" has certain advantages, particularly in rural conditions in that it indicates the interacting nature of the different components.<sup>(1)</sup>

31. It is tempting to a sociologist to suggest that the prior research task would be to make a sort of general sociological map of the area for the action agencies, but it has to be recognized that this presupposes time and resources usually beyond the compass of the operational agencies. The approach best suited to the present subject is rather one of fact finding and analysis directed at specific problems, and of helping to formulate and then test the hypotheses upon which policies are based. This calls for social surveys and community and evaluation studies. But a number of concepts and approaches derived from the body of fundamental sociological research need to be utilized since conceptual frames of reference are necessary even for the most empirical studies.

32. Little is known with precision about the process which at a given moment causes a community to come into being, with a particular shape and type of organization. More is known about what happens when communities fall apart, just as in the physical sciences, the nature of the atom is sufficiently understood to break it into the components but not to construct it. Disrupting communities become "problems", whereas healthy growth is regarded as normal and is less likely to be brought under study. Studies made of disrupting communities show that when communities break up, while they react differently according to the cause of the disruption, they generally do not revert to a series of individuals operating as units but into a set of primary groups and factions. To throw light on the constructive forces causing community development we have to discover the process by which such groupings or factions transcend themselves into more complex forms of social organization.

33. For this purpose two main frames of reference appear necessary: (1) some kind of scale which will enable the different stages of the evolution of communities to be classified or distinguished; and (2) a set of indicators relating to the determinants of movement in the scale, which will illuminate the strategic components and determinants of change.

34. A frame of reference of the first kind can be established by the ordinary scientific procedure of setting up a result of observation two ideal types, and of working out a series of intermediate stages based on a scale. No one imagines that the ideal type exists - indeed they are defined by relation to each other rather than to an independent reality - and it is not necessary to suppose, in order to utilize the scale, that all aspects can be fully embraced under it.

35. The best known frame of reference of this kind is the so-called Gemeinschaft Gesellschaft continuum which has its origin in the work of Tönnies, the retention of the original German reflecting the fact that ordinary speech in

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(1) For a detailed list and classification of definitions of "community" see Rural Sociology, June 1955, George A. Hilary Jr. See also International Social Science Bulletin No. 2, 1957, "Social Change in Poland", p. 206, Dr. Galeski, "An individual village is not simply a collection of farms but a definite social entity. The village has a number of characteristics territorial, ethnic, cultural - which define it as an entity.....".

most languages does not use these concepts. (1) Social systems or organizations approaching the Gemeinschaft pole of the continuum are defined as spontaneous groupings which acquire a traditional, emotional or "sacred" character in the course of time. In such groupings the ends are often not dissociable from the means and the inner relations have an intrinsic quality of their own; as in the case of a clan, a club, or a family. At the Gesellschaft pole, the organization is rational rather than spontaneous and secular rather than sacred. The relations between the individuals composing the group are not primarily ends in themselves, but are the means to other ends; as in the case of the staff of a factory or the shareholders of a corporation. At the one end of the pole is the tightly-knit village community with a strong sense of local solidarity and loyalty to tradition, and at the other end is the type of modern city where the workers live in dormitory areas and have little contact with each other except as ratepayers and neighbours. In such cases the city and the dormitory area tend to be contractual or Gesellschaftlike bodies and the Gemeinschaft or "familistic" element tends to be lost. It is possible to establish a scale of characteristics bridging these two poles.

36. The second frame of reference is made up of the strategic factors affecting change. It will vary with each community but is likely to include the following features: the way the population is distributed on the land and the nature and distribution of property rights, the strength of the group bonds and local customs, the class structure, the nature and strength of domestic, educational and governmental institutions.

37. As an alternative formulation of this frame of reference we can take that given by Professor Charles Loomis in his book "Rural Sociology - the strategy of social change". He singles out eight elements as the key features of rural social systems, namely: the common ends or objectives which keep the community together, the norms or standards of behaviour which the members of the community have in common, the rôles and status which the community ascribes to its different members, the sources of power, the situation as regards social rank, the sanctions it brings to bear upon its members, the facilities it offers them, and the degree of definition which the community has as a territorial unit.

38. Whichever formulation is taken, the purpose is to determine the main factors which make a community the entity or system that it is; and which accordingly will undergo modification as the community moves along a scale or continuum of development under normal conditions of spontaneous growth. Action to influence social change has to deal with these key elements, and Professor Loomis finds there are four main processes involved which he calls: communication, decision making, boundary maintenance, and socio-cultural linkage.

39. "Communication" is self-evident as an instrument of change, but its functioning is complex and often unpredictable. Not only has change to be communicated, it has to be induced to take roots. This it can do most easily if it is auto-inspired, or at any rate appears to spring from the initiative of the person affected. Hence, the whole of "decision making" in the community

(1) Other frames of reference are: the movement from "sacred" to "secular" (Durkheim), from "mechanistic" to "organic" (Durkheim), from "familistic" to "contractual" (Sorokin), "folk" to "civilized" (Redfield), from "status" to "contract" (Maine).

is strategic to change. Under these two headings fall action in the field of education, discussion groups, co-operatives and local self-government.

40. "Boundary maintenance" is also self-evident, but the question of socio-cultural linkage is an extremely difficult one. It is a community's culture which distinguishes it from other communities and its cultural pattern is normally an integrated whole. At once, therefore, the issue of repercussions arises and there have been many examples in recent years of how induced change has had unexpected effects because of unsuspected cultural linkages which were overlooked.

41. Movement along this second frame of reference we have been describing is not automatic, or necessarily one way, or irreversible. Communities can remain fixed at given points, or move differently at different times. Movement moreover, does not take place at an even pace. There is a good deal of evidence that a process of cumulative causation<sup>(1)</sup> comes into operation at certain points enabling the whole development to enter a different phase with a new pace attached to it. This idea is reflected in the expression "the point of take off", associated particularly with Professor Rostow which has influenced community development in India; another image is "getting over the hump". All of the elements of this framework are systems or institutions created by human beings, and as such are malleable, and they are themselves in constant process of change as they react one with another.

42. In this section we began by considering two frames of reference: the first was a descriptive scale which showed that communities range from "Gemeinschaft-like" to "Gesellschaft-like" systems; the second was a set of dynamic indicators showing the various factors which were strategic to movement along the community scale. Earlier we had stated that as a third frame of reference we took the United Nations index of living levels to be the overall criteria of the desirability of change. From this it follows that the task of the action agencies, expressed theoretically, is to influence the components of the second set of indicators in such a way that progress on the first and the third scales are equalized and that when inequalities occur preference will be given to the third index.

43. We must make the final step on the progression we have followed in this paper from the economic context to the institutional and sociological and come to the individual. All the factors we have considered relate to group activities since our concern is with social phenomena, and in particular community. But man is an individual as well as a social entity and at the basis of the problem of inducing social change is the individual's own desire either to accept the status quo or to innovate. Different schools of thought in sociology and psychology place varying emphasis upon the rôle of the individual. Some regard him as "culture determined" almost from first to last in the sense that his attitudes, beliefs and customs are bound to reflect those of his culture or sub-culture; his views on monogamy or polygamy, for instance, or the value he places on work or leisure as alternatives, depend on his environment rather than on his own thinking. Developments in psychology (particularly "Gestalt Psychologie" and its later derivative Group Dynamics) place stress on patterns of perception and response rather than on traditional conceptions of subject-object relation.

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(1) See Appendix to "The American Dilemma", by Gunnar Myrdal for an analysis of the process.

Others retain the conception of the primary motivation of the individual and stress his rôle as the ultimate arbiter; they emphasize his potentiality for change; and in particular the influence of the individual innovator and the deviant.

44. Without expressing views on these alternative approaches, we may note that individuals may broadly be grouped into three categories in relation to social change. There are those who are so identified with the cultural environment that they not only conform to its traditions and standards, but they join in pressure on others to conform. A second type consists of those who conform externally for convenience, but would welcome change if it could be achieved with honour and profit. A third type consists of the people who are responsible for the initiation and the promotion of the innovation at present taking place in the community. In a relatively static area the innovation may be limited and such individuals may be few. They are likely to exist, however, in almost every kind of community and to fall into two sub-categories. First there are those who are fully integrated into the community, are well respected, conform largely to the community standards, and are regarded as successful by their fellows. In short they are innovators but not deviants. The second sub-category consists of the deviants, i.e. those who, for various reasons, do not integrate into the community and whose spirit of innovation leads them to reject overtly the community's standards and beliefs. Out of the above groups, clearly the second group and the first category of the third group are the most promising to work with in community development since, unlike the first group, their fundamental motivations are not opposed to change, and they do not, like the second category of the third group, encourage opposition by defiance of local norms.

45. Summarizing this section we conclude that the psychological factors of motivation and beliefs and attitudes, however they may be explained, condition very largely in the last analysis the possibilities of social change if they are linked with knowledge of the possibilities of change and the potentialities of co-operative effort. This leads into the rôle of the educational system - the most potent influence in the hands of societies both for the conservation of their cultures and traditions and for social change.

46. Education acts on a country's rural life in a number of direct ways. First it is the provider of the general stock of knowledge when applied to natural resources produce human wealth. Secondly it is the source of specific manpower skills required for agriculture through agricultural extension work, vocational training and higher education. Thirdly it is at the origin of the invention of new technology and methods of work (or their adoption from abroad) and their spread through the community.

47. Education, properly orientated, also operates powerfully in an indirect manner. It tends to create social mobility and to aid national integration. It promotes a sense of "legitimization"<sup>(1)</sup> among the less privileged section of the community and integrates their objectives into national objectives. In the nation at large it develops social mobility and aids the creation of a middle class likely to favour more stable democratic forms of government and a climate of enterprise and national "solidarity". It also tends to increase international understanding. But above all, from the standpoint of rural living conditions it has to be seen as a vital economic factor needed along with other components of the production function, as can be seen from paragraphs 17 and 18 above, to bring about the rises in output required to improve existing living levels and provide for the population increase.

(1) "belonging"

48. Full statistics are not available for all the countries covered by the seminar. The latest figures of enrolment and of the percentage of national income devoted to public education are as follows:

ENROLMENT RATIOS FOR PRIMARY AND SECONDARY EDUCATION IN COUNTRIES  
OF CENTRAL AMERICA AROUND 1950 AND 1960, AND PERCENTAGE OF NATIONAL  
INCOME DEVOTED TO EDUCATIONAL EXPENDITURE IN A RECENT YEAR

Countries	Percentage enrolment <sup>(1)</sup> in relation to age groups 5-14 and 15-19, adjusted for duration of primary and secondary school courses				Public expenditure <sup>(1)</sup> on education as a percentage of national income in a recent year
	Primary		Secondary		
	1950	1960	1950	1960	
Costa Rica	82.4	100.0	7.5	27.9	-
Cuba	81.7	87.9	7.2	11.2	3.5
Dominican Republic	66.6	100.0	6.2	6.0	-
El Salvador	51.0	81.3	4.3	12.5	-
Guatemala	37.2	46.2	6.9	6.1	2.3 <sup>(1)</sup>
Haiti	24.9	40.1	1.9	2.8	-
Honduras	36.0	55.1	2.8	6.4	-
Jamaica	85.1	86.2	3.9	7.5	-
Mexico	65.5	86.1	4.3	9.4	1.8
Nicaragua	40.4	59.7	6.7	4.5	-
Panama	89.9	96.1	20.0	28.0	4.0 <sup>(2)</sup>
Puerto Rico	100.0	100.0	-	31.0	7.4 <sup>(2)</sup>
Trinidad, Tobago.	100.0	100.0	11.5	16.7	2.8

49. Research on the rôle of education in economic and social development is increasing but is in its initial stages. A strong correlation has always been known to exist between ignorance and poverty illustrated in traditional wisdom by the Italian saying "Chi non studia porta". Professor Oscar Lewis' survey of a slum area on the outskirts of Mexico City, where the rural immigrants live in conditions of poverty, showed "a positive correlation of education with income; those in the upper income group of the sample have approximately one year more schooling than those in the upper middle group and about a year and a half more than in the lower middle and lower groups". At the poverty level education is such a positive factor in lifting income that even a bare modicum of extra primary education enables members of a poor community to outstrip the income of their neighbours. This is also the experience of the Unesco Fundamental Education Centre.<sup>(3)</sup> Data for the U.S.A. show that the return to an individual from his education is equivalent to an investment return of some 15 per cent

(1) Data compiled by Statistics Division, Unesco.

(2) Including Federal Government financial support.

(3) CREFAL.

per annum while if public costs are taken into account the percentage is 11. These calculations relate to a highly economically developed society but returns of the same magnitude or even larger probably apply also to students in less developed countries. Investment in education which results in bringing people from the subsistence in the monetary section of the economy also produces high returns.

50. However it is not enough, alas, to have at one's disposal an instrument of great potentiality. It is necessary that it should work for productive purposes, and as with other factors in production its operation has to be studied on the spot. The circumstances disclosed are not wholly favourable. Too often the distances from schools are too great, absenteeism is common, the schooling period is set at too short a period to make a lasting impact, the appropriate reading material for the follow-up of schooling or literacy campaigns is in short supply, curricula are outdated and not productively orientated. Here is a field of research utilization full of great promise for the future if education is designed to meet scientifically established needs, as well as of course maintaining its cultural contribution to a fuller life for the individual and society.

51. Allied to education is the spread of information through the mass media. Here also the situation in the countries covered by the region is not wholly satisfactory. The means of communication of information (newspapers, radio, etc.) are spreading but the possibilities of their contribution to economic and social progress in rural areas is still largely unexploited.

### III. SOME SELECTED SOCIAL RESEARCH METHODS AND TOPICS

52. If basic and applied research of the kind described in the first part of this paper is promoted, administration will become in a better position to know: which areas are those where programmes of technical change are likely to yield the best results on terms of the interrelation of economic and social resources; which are those where limited and concentrated projects are required and of what kind; which need an "opening" or a "loosening" of community ties; which need the creation of a more group action and local leadership; which must depend for further advance mainly upon legal and institutional changes; which must depend upon a series of specific agricultural measures such as irrigation and reclamation, land redistribution, changed patterns of agricultural production or new techniques; and which must look to the development of secondary or tertiary employment including the introduction of small scale industries, the setting up of trading estates; and finally which can only progress by the broadest possible combination of a number of the above measures, accompanied by a general programme of education and promotion of family welfare in order to create the necessary social infra-structure and incentive for development.<sup>(1)</sup>

53. The extent of the research required will depend on intensity of the impact which the programme of technical change is likely to have on living conditions and social structure, e.g. are the technical changes limited to specific production operations, or do they involve major switches in production patterns affecting a community's way of life, from extensive to intensive agriculture, from single

(1). For a comprehensive statement on social research needs in relation to the formulation and administration of programmes, see "Hernan Santa Cruz".

crop to diversified farming, from tenancy or wage labour to ownership, and from village life to living on scattered farms, or from agriculture to industry; do they open up new areas to cultivation? An appendix is attached to this paper setting out a list of questions which need to be taken into account in starting new projects.

#### The anthropological approach

54. Social anthropology is concerned with man in his cultural setting, the way in which his social system is structured and the manner in which the different parts are functionally interrelated. Accordingly the anthropologist is in a particularly strong position to study and assess the effect of technical change directed at particular points of the structure. Since the science of anthropology relies primarily upon deep first-hand knowledge of local conditions, it is at its best when dealing with single village communities or tribal units. Where the unit of observation is larger and the human components and social variables greater the sampling techniques of sociology and social psychology tend to be more effective as instruments to aid the administrator. None the less, anthropologists draw upon techniques common to the different social sciences: opened and closed interviews, questionnaires, rôle and status analysis, content analysis, etc. There is therefore no hard and fast principle as to whether an anthropologist or sociologist should be used in any particular case, and the techniques of anthropology previously confined to primitive tribes, are today in use in studies of factory conditions and observance of behaviour in highly developed communities. In fact the distinctions between sociology, social psychology and anthropology are tending to become only differences of emphasis.

55. In Mexico and Central America the rôle of social anthropology has been and must remain important because of the large population of indigenous peoples in the region. These peoples speak many different languages and have complex and differentiated traditions and customs and only by deep and painstaking study can their problems be understood and solutions found. The work of the Instituto Indigenista of Mexico and that of Guatemala call for special mention.

56. A document will be submitted to the seminar by the Mexican Instituto Indigenista and for the purpose of this paper it is convenient to refer to a single study, namely one undertaken as a part of a Unesco project on the influence of socio-cultural factors on productivity. The Instituto undertook an anthropological survey of Old and New Ixcatlan under the direction of Dr. Aguirre Beltrán showing the differences between two communities: one which had continued in its existing state and the other which had been moved to a new area as a result of a hydraulic project. The interesting findings of this study are too numerous to enumerate here but the following conclusions are important. "The appearance," the report states, "in this tropical region, of modern technological development disrupted the old ecological order and its social structure and induced changes in indigenous attitudes, which in their turn speeded up the process of cultural assimilation in all aspects of culture, especially with regard to productivity. This basic change of attitude was bound up with a social change undergone by the indigenous peasant settled on new land; he lost his subordinate status and acquired social equality with the national population. The transfer of the population played a decisive part in this change. It was due, in the beginning, to coercion from the government; the new community was then allowed to pursue its own evolution."

57. An example from Europe is worth placing beside this. In Rural Sociology for March 1957, Margaret Vine deals with the social change in a Norwegian valley community. She states "practically cut off from other peoples they have developed a 'sacred society' with an almost impermeable value system that is resistant to social change". She writes "since about 1920, when communications improved, they have had electricity, schooling, roads and government services forced upon them. Because their value system does not encourage change they have not particularly wanted these changes nor have they utilized them to the utmost advantage ... the result is that the people do not use farm machinery although they know it exists; they do not particularly want labour-saving electrical equipment although they have cheap electricity; they do not want to buy their food and clothes (instead of producing them themselves) although these items are available at local stores". This investigator goes on to say that "one of the significant factors producing social change is an external force - the Norwegian State Government". She explains that almost the only factors making for social change are the recent initiatives brought in by the government.

### Social surveys and community studies

58. Two major tools of applied research are the social survey and the community study. There are some problems of terminology in the use of these expressions. By community study we mean a field inquiry ranging rather widely over the main areas of community life, while by social survey we mean specific inquiries organized either centrally or locally which collect and analyse data on particular aspects and repercussions of administrative action. The nature and scope of such inquiries and the techniques to be used are well set out in a simple form in "Fact Findings with Rural People" prepared by the FAO, which is being circulated to participants, and they need not be enlarged on here.<sup>(1)</sup>

59. Survey techniques and community studies can help public administrator in (a) finding the right approaches and points of intervention for particular programmes; (b) finding out possibilities of local leadership and group action; (c) promoting the communication and diffusion of new ideas.

60. As regards (a) and (b) typical questions which can be illuminated through social survey techniques are:

(1) What are the rôles being performed by different individuals, groups and institutions in the area? (Clearly changes can be introduced more smoothly if they take into account the interrelationships which exist between the different social rôles.)

(2) The power structure, and the status and responsibility of its different elements. (The source of power may lie outside the community and the local rôles may be only intermediary or manipulative.)

(3) The incentives and rewards attached to maintaining the status quo, or alternatively to causing change or development. (These will be influenced by the rôle and the power systems in operation; but they may be independent of both).

(4) The prevailing customs and norms of behaviour of individuals and groups, (these may be conditioned by and interlocked with the rôle, power and reward, but they may be independent, having their roots in deep seated historical or ecological and biological causes).

(1) See too Father J.L. Lebrét "Guide pratique de l'enquête sociale", Paris, Presses Universitaires de France, and Professor M.G. Smith and G.J. Krijet - a sociological manual for extension workers in the Caribbean. Extra-Mural Department, University College of the West Indies, Jamaica, 1957.

Within the foregoing factors there will be elements which will stimulate resistance to change, and others which will provide a basis for improving community development. Analysis of these different elements can help in programme execution.

61. As regards (c) it will be noted that the problem is not only to discover the right means of stimulating the forces tending to development, but also to secure proper lines of communication so that the policy is not altered by the time it reaches the person it is intended to influence. (This may take place consciously or unconsciously because the motivations of the intermediaries are not the same as those of the initiator or recipient of the new measures.)

62. The same considerations apply to the acceptance of programmes. The person affected by the action will respond differently according to whether he feels he is involved in the policy and is actively participating or whether he regards himself as a passive beneficiary. This applies to some degree also to applied research itself. Surveys and studies have been conducted on the basis of the community participating in the surveys of itself, not only at the recipient but also at the action end of the research process. What such procedures gain in securing acceptance of the results of the research, however, they tend to lose in scientific precision and objectivity where social problems are concerned, since self survey is a difficult research task when well trained people are involved. But participation is a crucial issue at the level of execution, and research workers can give guidance on the choice of different methods of action by conducting small scientific controlled experiments. An experiment was carried out in the United States<sup>(1)</sup> to establish the efficacy of individual instruction or lectures as distinct from group discussion in introducing new methods of child nutrition. Both methods were tried and compared and the group discussion method proved far superior to individual instruction or lectures. Pilot experiments of this kind when carried out both scientifically and economically can guide operational agencies in their choice of working methods.

#### Attitude studies, experiments in group organization and leadership

63. In the foregoing we have been mainly concerned with the aid which can be given to the action agencies by indicating the strategic points of entry into the community to secure social change, and with problems of communication and acceptance of new ideas. It is however, also desirable to have available procedures for finding out the beliefs and attitudes which condition the thinking of the individuals and the community, and in particular the nature of the psychological processes which bring people to take initiatives in common. In rural communities it is particularly necessary to take into account religious beliefs: attitude to occupation or to leisure as ends in themselves: attitude to saving and the time span taken into account when deciding different courses of action: attitude to authority: the parents' attitude to children and to each other, and their ambitions: attitude to different types of occupation and activity, etc.

64. Well established techniques exist for studying attitudes and for ranking them in order of importance in relation to specific programmes. Substantial work has also been done on the question of how to change attitudes and as is

(1) See Cartwright and Zander, Group Dynamics: Research and Theory, p.294. (Row, Peterson and Co. New York).

well known this aspect of social research has been used by advertising firms to great commercial advantage. In the field of community development research of considerable value has been conducted on the dynamics or group action of leadership, associated particularly with the experimental work fathered by Kurt Lewin in the United States. R. Lippit: "An Experimental Study of Democratic and Authoritarian Group Atmospheres" in Studies in Topological and Vector Psychology, Iowa, 1940, Vol. I, No. 3.

65. For an example of the use of the Social Sciences in identifying leadership the reader could usefully study a paper by Mr. Marcel de Clerck called "The problem of the appointment of 'functional' leaders" which appeared in Fundamental, and "Adult Education", April 1954 published by Unesco.

Mr. de Clerck analyses the situation at Los Delicias, a community near Sitio del Nino, El Salvador, and utilises the techniques of the Sociogram developed by Dr. J.L. Moreno and his school.

66. An interesting sociological study (again using an example from another region) is that by David B. Lindstrom<sup>(1)</sup> of the diffusion of farm practices in Japan which was based on tests of attitudes to four major recommended farm practices and on the extent of the adoption of the practices. The study led him to the conclusion that "if the extension system in a country to which technical aid is to be extended has a stated policy 'not to force people to do anything against their will', then it must be recognized that adoption of new practices can come only if the people involved understand their importance, see them work out successfully in practice, and find in them distinct advantages over the old practices. This means that, although the conditioning influence can come through mass media, yet the influences leading to adoption must come from trusted and reliable agents in the community, who can find and convince those of influence among people to try out and use the new practice. Technological training is important, but it is not enough; agents must have training as well in how to analyse local social situations and how to work with the people and the groups of which they are a part".

#### Evaluation

67. Evaluation is a field in which growing use is being made of the social sciences. The techniques range from those of the basic resource survey through community studies and social surveys to case histories, attitudes scales, response evaluation of mass media campaigns, and experimental tests of the performance of groups in reaction to different types of programmes measured against "control groups" of persons unaffected.

68. Normally evaluation is of three kinds according to whether it takes place before, during or after the project. The first kind ("pre-project evaluation") is concerned with the choice and planning of projects. The second kind ("in project evaluation") deals with the assessment, guidance and redirection of the operation and administration of the project. Ideally, evaluation of this kind should be "built into" the project so that its effect will be similar to that of a gyroscope keeping a machine in balance. The third kind of evaluation ("post project") amounts to a post mortem, and while it is of little help to the project which is being dissected, it is likely to aid future action in different projects.

(1) "Rural Sociology", Vol. 23, June 1958, No. 2.

69. A further, if rather self-evident, point is that evaluation should seldom be pursued for its own sake. Many projects clearly evaluate themselves and "in project evaluation" which tends to be most expensive of the three kinds needs to be limited in its use to major or pilot projects and to complex and marginal cases which will throw light on the direction of subsequent operations. Also it is necessary to add that evaluation machinery, however effective, is no substitute for the day to day evaluation which should take place each time decisions are being made: every choice of a project and each operation unless of a routine character involves assessments which can never be of a mechanical character.

70. In "pre-project evaluation" the concern is with problems of choice and probability since by definition the project has not yet come into operation. The factors to be taken into account are: careful definition of the goals of the project; comparison with previous similar projects; analysis of the economic and social context, study of the institutional and administrative framework within which it is to work; interlock with other programmes bearing on the same area; relation of cost and effort to anticipated result as compared with other alternatives. The chief requirement here is the data provided by basic research extrapolated as necessary.

71. "In project evaluation" is greatly assisted if it is possible to establish a "basic line" in an area where basic research has already been undertaken; the necessary data may already be available but sometimes it may have to be collected afresh. In either case care must be taken to reduce the components of the base line to the absolute minimum compatible with the administrative needs, and with the available resources for maintaining the necessary record of changes as the project proceeds. For this purpose it is necessary to be clear in advance on the techniques to be employed for collecting the information and the periodicity of check.

72. So far as the problem of village development is primarily one of changing people's social behaviour the techniques of social psychology are particularly relevant but are at the same time perhaps the least known and widespread. Certain changes in rural life are relatively easy to measure (e.g. crop output, growth of personal income, morbidity rates) provided data collecting machinery is available. But to study changes in people's attitudes and motivations more subtle and complex techniques are necessary. By the establishment of base lines and giving scores to different practices it is possible to measure the effect of specific programmes and campaign on the behaviour of a community's population. The results are sometimes surprising.

73. Further, since the essence of programmes of the kind we are discussing is the stimulation of change and its spread to as many people as possible the social survey methods are a useful means of checking what communication has actually been effected. A study made by the Programme Evaluation Organization of the Government of India Planning Commission produced some remarkable results. Whereas an average of 68% of the villages had heard of the project covering their area, in one village as many as 85% had not heard. The techniques used in this inquiry were partly those of social survey and partly those of public opinion research.

74. Other forms of evaluation are more strictly in the field of social psychology, such as discovering what means are the most effective in producing participation in projects and group tasks. Most of these studies<sup>(1)</sup> emphasize the importance of securing discussion and involvement in decisions on the part of the people affected and confirm the statement by Lord Lindsay "that the primary cell of the democratic community is the discussion group".

#### IV. CONCLUSIONS: ORGANIZATION OF RESEARCH

75. Research activities of the kind discussed above can introduce an objectivity of judgement and a reliance on verifiable facts which can greatly help rural development programme.

It seems clear therefore that existing research institutions and universities could give more attention to the social problems of rural areas: in teaching and training activities, in influencing the choice of subjects for doctorates, in promoting field studies in vacation periods, in "adopting" particular villages or communities for continuing study.

76. The next step is the extension of existing research resources, either as a national or regional basis. Various patterns of action are possible. In the countries where the social sciences are more extensively developed the effort has been largely made through the existing universities. In countries where the social sciences are still at early stages of development the facilities of the United Nations and Specialized Agencies, and particularly of Unesco through its Department of Social Sciences, can be utilized. Various types of assistance are available according to needs. Assistance can be given in the establishment of new teaching faculties in existing universities, in the setting up of research utilizing particular disciplines, in meeting documentary and bibliographical needs.

77. Then there is the problem of creating trained research staff. Here again the international agencies can help. But the main responsibility must rest with the governments and research institutions of the countries concerned, and the initiative, even with limited resources, must come from them. This points to the need to create an "operational sense" among the social scientists concerned and a "research mindedness" among administrators. On this difficult point there has to be a spirit both of give and take, as indeed there has to be also between the various social sciences concerned. The problems of the rural areas are a challenge to the research potentiality and the practical capacity of all of the social science disciplines and the inter-disciplinary approach should be used wherever feasible, particularly in basic research.

78. The organizational action required therefore might be summarized as follows:

(1) Better use of existing research resources: greater concentration of effort on the social problems of rural areas.

(2) Extension of social science resources and setting up of new research institutions where feasible: use of facilities of international agencies.

(1) See Lippitt, "Training in Human Relations", Harper and Bros. New York, 1949.

(3) Training of the research workers concerned to be operational in their outlook when framing the problems to be studied and choosing the hypotheses to be tested, while not in any way compromising their scientific objectivity.

(4) Training of administrators to be aware of uses and possibilities of research and to exploit the full potentialities of the social sciences.

(5) Use of the interdisciplinary approach in basic research.

(6) Development of simplified research methods where possible, which can be sponsored by the government departments and agencies concerned without excessive cost, and which can be fitted into the framework of their programmes, particularly in the field of evaluation.

ANNEX

Technical change may bring about the opening up of the new areas to cultivation, or the introduction of new methods in already cultivated areas. In both cases capital and labour are required in addition to techniques and a new balance between population and resources.

As regards capital special regard must be paid to whether the investment is labour extensive or labour intensive. Normally, projects with a relatively low capital coefficient are likely to be most economic in the countries of the region owing to the general shortage of capital.

The following schedule, which is intended as a check list to be used in the introduction of new production, and for settlement project, is divided into three parts: a list of background factors, I. environmental, and II. social; followed by III. a list of questions which can be used to check on the project's relative economic and social advantages and its viability.

Not all of the background factors need to be studied nor need the questions be asked in all cases; at the same time it is better to err on the side of fullness of information than the reverse. This appendix does not claim to be complete, and is put forward simply as an exercise in pursuit of the "overlooked variable".

Background Data

I

Environment

(a) Altitude. Topography. Distance from centres of population, ports. (b) Climatic conditions. Temperature (temperature and humidity, average daily and annual variations). Rainfall (annual average rainfall and distribution). Winds (force, direction and regularity). (c) Character, analysis, and depth of soils. (d) General conditions of erosion and soil conservation. (e) Water table and possibilities for irrigation, rivers. (f) Natural vegetation in the area. Effects on climate and water supply. (g) Existing agricultural activities. Agricultural plagues, pests and diseases. (h) Forestry resources. Nature, density and composition of the forest. Stability of the forest formation. (i) Nature and extent of fishery resources, and extent and possibilities of exploitation.

II

Human and Social Factors

(a) Present population of the area, number, skills, nomadic and settled, morbidity, mortality, rate of growth. (b) Levels of living, monetary and subsistence. (c) Family structure. (d) Social organization at the community level. (e) Historical position of different groups and changes in process affecting their status and rôle. (f) Degree of participation in regional or central government. (g) Legal systems and institutions. (h) Land ownership and tenure. (i) Religions and cultural institutions and traditions. (j) Attitudes to work and to possibilities of technical and social change. (k) Educational and

training facilities. (l) Health factors other than climatic. (m) Social Welfare facilities and services. (n) Nutrition. (o) Local, regional or central administrative services available.

### III

#### Schedule of Questions

(1) Is full direct and indirect use being made at present of vegetation crops, and forests for economic purposes? (2) What new crops, production and new techniques can be introduced at what cost? (3) What is the market for them, local, regional, national, for export, at the cost indicated? (4) What is the state of railway tracks and equipment, or of roads and rivers for transport purposes? Are trucks, boats, maintenance facilities available and at what cost? (5) What is the availability and cost of fuel, maintenance facilities, storage equipment? (6) Why have new production or new techniques not been introduced before? Have attempts been made previously? (7) Is sufficient finance available at economic rates? (8) Have alternative uses of the finance been considered and with what result? (9) Are the necessary management skills available? (10) What will be the project's effect on the social and economic organization of the local population? (11) What are the changes as regards items (c) to (o) of the human and social factors set out above which can be foreseen as a result of the project, or are needed to make it economically and socially viable? (12) What educational measures are needed in the fields of (a) adult, (b) primary, (c) secondary, (d) technical or university education. (13) What measures of community development are required? (14) What is the contribution, direct and indirect, short-term and long-term, of the project to the economic development of the area, the region and the country? (15) What are its anticipated effects on the monetary and real income of the people affected?