ORGANIZATION OF CAPABILITIES AT INTERNATIONAL RESEARCH INSTITUTES 
OR OTHER CENTERS TO DEAL WITH SOCIAL AND ECONOMIC PROBLEMS 
OF AGRICULTURAL DEVELOPMENT

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Since this is not the first time this topic has been discussed, one form the paper to open the present discussion might take would be to try to summarize previous discussions and then outline various lines of action that might be considered. I have been present in several of the earlier discussions, in the United States and Asia, but not in those that have undoubtedly been proceeding elsewhere. Consequently, I have chosen not to attempt such an overall review, but instead to outline the general situation we face as I understand it, and then to propose a particular possible response to it. Such a procedure admittedly runs the danger of being influenced by personal biases, but I assume that the subsequent discussion can be counted upon to deal with that.

I. The Situation

A. The Relevance of Economic and Social Research

Within the past few years there has been increasingly widespread recognition of the importance of economic and social research related to agricultural development. The relevance of such research is perceived at four points.

First, it is relevant to the rate of exploitation by farmers of new technology. Farmers' incentives to adopt new technology are affected by yield response and cost implications, by relative prices of farm products and farm inputs, and by land tenure systems. Their opportunities have an impact also. The degree to which they know about new technology

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1 Relative prices of farm products and farm inputs also influence the rate of development in the nonagricultural sectors of an economy through their impact on food prices in the cities and by the demands that price subsidies make on public revenues. Policies with respect to land tenure and tenancy affect the distribution of political power at the same time that they affect the economics of farming.
and how to use it, the efficiency of arrangements to make farm inputs locally available, the convenience and terms on which credit is available, arrangements for timely and efficient marketing and transport of farm products --- all of these affect farmers' opportunities and all could be improved by appropriate economic and social research.

Second, economic and social research are needed with respect to a wide variety of off-farm agri-support and rural service activities, inter-sectoral relationships, and general social and political situations that both affect and are affected by agricultural development. Problems of these types include changes in employment opportunities, in income distribution, and in requirements for processing, storage and transportation of farm products. They include the erosion of long-established patterns of economic and social interaction among the populace of rural communities, shifts in political power, and changes in requirements for rural social services such as education and health and in trade patterns within and between countries. In recent years, several of these have been spoken of as "second generation" problems implying that they did not exist prior to the Green Revolution. However, some of them would have become more acute in recent years even without the Green Revolution because of the upsurge of population growth, increasing pressure on the land, and increased rural-urban migration. What the Green Revolution has done is to increase certain rates of change, having a differential impact on different groups of people, making certain problems still more acute and urgent.

Third, there are urgent problems with respect to the organization of farming in many countries. What constitute appropriate adjustments to rapid rural population growth in the presence of extreme land pressure and farms already very small? What are the reciprocal relationships of farm equipment and farm size? Knowledge of what has been happening within socialist countries in recent years is raising critical
questions about the advantages and disadvantages of various forms of farm organization and management and about their applicability within different social and political contexts.

Fourth, there is increasing concern about the process of agricultural planning itself. All of the foregoing types of problems have implications for planning but beyond those there are urgent economic and social problems with respect to planning itself. To what extent should it be production planning? To what extent should it be planning of public policies and programs only? How restricted or widespread should participation in planning be? Should it be left to professional planners and legislators alone? How far should technologists be involved? Public administrators of implementing programs? Farmers? Urban groups affected by agricultural policies?

Part of this increasing concern about planning has to do with its form: what are the relevant categories of planning, the most useful forms of disaggregation or aggregation within it, and the most useful criteria for establishing priorities. Another part has to do with the degree to which agricultural planning can be cast in forms that take advantage of current statistical, econometric, and computer technologies.

B. The Response of Technical Assistance Agencies

Various private and public, national and international technical assistance agencies are already giving attention to these problems, and that attention has increased in recent years. It has taken two forms. One has been directly to conduct indicated types of research, either
in-house or on contract. The other has been to give technical and/or financial aid directly in support of specific research projects conducted by appropriate entities in each of selected countries.

The question before us for discussion today is whether the situation calls for setting up some new international arrangement to concentrate on dealing with one or more of these problems. Our announced topic implies that any arrangement set up should attempt to deal with this set of problems, but we should recognize that there have been several proposals to go the other route, selecting a single one of them for concentrated attention. My reading of the factors involved leads me to conclude that the former procedure is to be preferred and I hope this paper will demonstrate why I come to that conclusion.

Moreover, previous discussions have demonstrated that the question before us cannot be answered except when it is posed in terms of the proposed nature of such arrangements, their terms of reference and objectives, and, at least in general, their modes of operation. That is because any decision must be based not only on the importance of the topic or topics to be dealt with but also on the feasibility and likelihood of being successful in dealing with them through the arrangements chosen.

C. Salient Characteristics of Economic and Social Problems

Any new international arrangements that might be set up to deal with one or more of them will need to take cognizance of several salient

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2 The OECD employment study is one example. The study of the social implications of the green revolution by the United Nations Research Institute for Social Development is another. The FAO study of the spread of high-yielding varieties in the Philippines is a third. The contracts that the U.S. Agency for International Development has negotiated for research with respect to agricultural credit, the impact of relative prices, and new techniques of sector analysis are other examples. So are the 211(d) arrangements AID has made to build institutional competence to deal with problems of agricultural development in U.S. universities.
characteristics of economic and social problems.

The first of these is that the "solutions" to many economic and social problems depend for their effectiveness on their congruence with the economic, social, political and cultural environment in which they are introduced. Many of them are distinct to individual countries and must be studied and solved within each national context. But even within each country the national context keeps changing so that "solutions" at one point in time are no longer adequate shortly thereafter. Moreover, a satisfactory "solution" of certain problems in one country automatically creates problems for other countries, as when a country that has been importing a commodity becomes self-sufficient, thereby reducing the foreign demand for present exporting countries.

A second salient characteristic is that economic and social problems of agricultural development are not separable from related problems in other parts of each national economy. A rise in the price of a major food increases the incentives to farmers but simultaneously increases costs to industrial employers. A public subsidy of the cost of a farm input makes demands on public revenues that reduce the resources available for other development activities. Consequently, much more than the "agricultural sector" of each economy is involved in the social and economic problems of agricultural development.

A third characteristic is the dependence, particularly of economic research, on other disciplines for the alternative technologies between which it makes judgments. The end products of most economic and social research are not themselves technologies (except when these are technologies of an organizational or operational type). Instead, they are
analyses of situations and policy recommendations with respect to the ways in which, and the degree to which, biological, engineering and organizational and operational technologies could most desirably\(^3\) be applied and combined. Sometimes improved technologies do not exist. Economic and social research cannot create them but it can identify needs for specific types of new technology and stimulate the search for them. Information about alternative technologies that do exist is not always available in any one place. Consequently, economic and social researchers either must go to the sources of information about these technologies wherever they may be or have other effective means for drawing upon them.

A fourth salient characteristic of economic and social problems is that to give effect to an economic or social solution through governmental action depends on complex bureaucratic and political decision-making and implementation processes. Consequently, if the results of economic and social research are actually to be used, effective contacts of one type or another must be established and maintained with policy makers and administrators in each country, and even then the outcome is uncertain.

These salient characteristics of economic and social problems persist. They cannot be eliminated. Whatever arrangements are set up to deal with economic and social problems must take them into account.

D. Current Restraints to Conducting More, and More Pertinent, Economic and Social Research

Unlike the salient characteristics of economic and social problems that must be lived with, there are a number of current restraints to

\(^3\)"Desirably" because value judgments about social goals are implicit in such decisions and these vary not only between countries but among different segments of the population of each country.
conducting more, and more pertinent, economic and social research that could be substantially relaxed by appropriate action. The most important of these, in my judgment, are the following. They are not listed in any order of priority; all of them are important.

One restraint lies in the number of trained research workers who are presently available. The absolute number of social scientists with advanced training in Asia, Africa and Latin America is small. Many of them are in teaching positions with only a limited amount of time for research. A few are in research institutes where they make little contribution to training additional research workers. Many of them get drawn at an early age into administrative positions where they have no time for research. Increasing numbers are being employed by business firms in the private sector. Yet a great many of them could put more of their effort into research, given adequate facilities and incentives, and many of them would like to.

A second restraint, closely related to the first, is the lack of effective personal interaction among geographically dispersed researchers. Only in the capital cities and major university centers is such interaction now readily feasible. There are persons with basic economic or social training in many other places in each developing country who are not now engaging in research but who would like to do so, and whose capacities could be considerably enlarged if adequate provision for effective interaction with others interested in the same problems were available along with provisions for financing cooperative projects involving the participation of widely dispersed researchers.

Another closely related restraint is the lack of effective
communication of research results among countries, even for researchers in capital cities and major university centers. Research workers in a developing country usually are much more up-to-date on what is happening in major developed countries as reported in professional journals than they are with respect to studies in nearby countries facing the same problems they are. This lack exists among the research centers of individual countries, as well. About two years ago, Dr. Castillo compiled a detailed review paper of economic and social studies completed by the University of the Philippines over the past fifteen years. Very little of this information is available at other centers, even in the Philippines.

Still another important restraint is the weakness of existing rapport between policy makers and social science research administrators. Partly this is because policy makers have not been impressed by the immediate value to them of past economic and social research. However, it is also partly because no one has given sufficient attention to bringing the two together.

Another restraint is the paucity of dependable data for economic and social research in most of the developing countries. Much of modern social science research, especially in economics, takes statistical data gathered by others as its starting point. The systematic gathering of such data is gaining ground everywhere, but much of it is not in a form social scientists can use, there are many questions about its accuracy, and the publication of what is compiled is often long delayed. 4

4Dr. Koffsky, in an earlier memorandum, suggested that this problem should receive first attention by a new international program in the field being discussed in this paper.
Still another restraint, more fundamental in character, is the shortage of disciplinary theory with respect to certain important types of economic and social problems. For example, we are a long way from having an adequate understanding of the relationships between income distribution and economic development. Similarly, we are in need of much better theory with respect to the allocation of resources among intranational regions of differing growth potential. These are only two examples from a much longer list of theoretical deficiencies.

Another major restraint is the lack of intimate interaction between biological and engineering research scientists, on the one hand, and social scientists, on the other. Problems cross the boundary between the two. Frequently there are alternative solutions to the same problem; one technological, the other social or economic. This is true with respect to farmers' incentives. It is true with respect to making improved farm equipment available for use on small farms. Most economic and social problems have technological components, and vice versa.

Finally, I believe there is currently a serious problem of usurpation of the priority-setting function in research by external agencies. It is natural and desirable for external agencies to be concerned about research priorities. But when they launch major international projects, and offer substantial honoraria for national researchers to engage in them, they may draw scarce research talent away from problems that in particular countries are of more current importance than those externally selected. Some way needs to be found to reconcile the participation of both national researchers and external agencies in selecting priorities for social and economic research.
As we proceed through this paper, it will be discovered that I take these restraints very seriously and suggest that relaxing certain ones of them should be given the highest priority. Our resources for economic and social research are severely limited; we should take steps to make the best use possible of those we have and here I believe a new international program could help. In the longer run other improvements can be made, but in the long run the primary focus of any international institute can change also.

II. General Propositions

Based largely on the review of the situation outlined up to this point, I would suggest six general propositions as guide-lines in determining what kind of an international agency or agencies it might be wise to set up at this time.

1. Because of various differences in priority problems and in present international arrangements in different parts of the world, and to facilitate interaction between a new agency and national agencies in each country, any new organization or organizations set up in this field should be regional in scope rather than having global responsibilities. These regions could be demarcated in different ways. One that would seem to make sense would be to have one for Latin America, one for South and Southeast Asia, one for the Middle East and North Africa and one for Africa south of the Sahara. These might be linked to each other eventually, but each should be largely autonomous within its region. They would not need to be set up simultaneously, nor would they need to operate in the same way or concentrate on the same activities, although they might.
2. Any international agency devoted to studying the economic and social problems of agricultural development should operate in such a way that, from the very beginning, it utilizes most scientists of each country where they now are, instead of moving them into a new international center. A small professional staff at the Center would be essential, but the staff of the agency should be construed to include a much larger number of social, physical and biological scientists located and working in their home countries. This can greatly enhance the quality of research undertaken, because of the diversity of forms and contexts of individual problems in different countries. The data for studying each problem are different for each country. Each problem needs to be studied in close contact with its local variations.

To proceed in this manner could simultaneously improve the quality of the research undertaken by the new agency and hasten the improvement of national research capacity in each country.

3. The present commodity-oriented international institutes are to be commended for including economic and social research in their programs. This aspect of their programs is important, both to determine and evaluate the economics of proposed new technologies and to examine broader policy questions particularly germane to the commodity or commodities studied. However, commodity-oriented research organizations are not an adequate base, even if they were greatly strengthened, for international efforts to deal with the broad range of economic and social problems of agricultural development. Many important problems cut across commodity lines. Others are almost independent of commodity production
patterns. There is considerable to be said for separate international regional arrangements to concentrate on the economic and social problems of agricultural development in addition to what can effectively be done by commodity-centered research organizations.

4. No new agency should be looked on as a substitute for present programs of existing technical assistance agencies, preempting the field. Diversities of approach are an advantage. Considerable economic and social research related to agricultural development is now being carried on by international technical assistance agencies. The relevant question is: are there important activities that could best be conducted by an additional new agency?

5. Whether by a new international institute or by individual technical assistance agencies, the range of types of national institutions in which the study of economic and social problems of agricultural development should be encouraged is quite broad. The national agencies that should be considered in these efforts include governmental research institutes, departments of faculties of agriculture, departments of general universities, research institutes of universities, institutes of business and management, and the research sections of operating agencies of national and state governments. That all of these are pertinent to strengthening economic and social research related to agricultural development is indicated by the fact that at least parts of the subject matter dealt with by each of these types of agencies are relevant to problems of agricultural development. In addition, when one lists the research workers on each continent who are actively conducting significant research related to agricultural development they are found scattered among all of these different types of organizations.
Some might argue that it is wasteful to have scarce competent researchers scattered among so many types of national agencies, and that efforts should be made to bring them together in fewer and distinctively research institutes. My reply would be that in order to give basic training to additional research personnel it is important that many economic and social researchers be in universities. Consequently, arrangements should be made to utilize their abilities where they are.

6. If the new organization were to be designated a "research" institute it is important that the word "research" be broadly construed. In an earlier meeting, Dr. Wortman made a number of comments that are pertinent to this point. He pointed out that frequently what is most helpful is not new formal research but getting past knowledge to those to whom it can be helpful. He remarked also that it is not the findings of formal research alone but whatever knowledge would be useful in planning about which we must be concerned. Certainly, structured social science research is important but so are the experience gained in experimental and pilot projects and other information that would not be covered by a narrowly construed definition of research.

III. A Specific Suggestion -- for Asia

Because my experience has been limited almost entirely to Asia, the remainder of this paper outlines a specific suggestion for a regional international institute or center for South and Southeast Asia, honoring the General Propositions stated above.

My suggestion is presented here as a set of four "activities" to be engaged in by the Institute, each contributing to and supporting the others.
Activity I - Bringing Researchers of All Countries of the Region
Into Effective Interaction and Collaboration

Central to the program of the Institute should be a set of activities designed to focus the attention and facilitate the collaboration of researchers of all types in countries of the region on selected social and economic problems of agricultural development.

That purpose should be implemented through a combination of three sub-activities: (1) sponsoring several series of continuing seminars and workshops on selected topics, to increase personal interaction and collaboration among researchers, policy makers and administrators throughout Asia; (2) setting up arrangements for the widespread distribution of research results and other pertinent information to those who could use them; and (3) organizing, financing, and participating in selected research projects.

Seminars and workshops. Some of the seminars and workshops should be limited to researchers alone. Discussion in them would center on research priorities and methodologies, and on the formulation of project plans for specific research projects that might later be undertaken either with national financing or financed in whole or in part by the Institute. The mix of types of scientists -- biological, physical and social -- would in each case be pertinent to the problem to be tackled.

Other seminars and workshops would be made up of a combination of researchers and policy makers, both in individual countries and from different countries, to discuss research findings, identify unanswered questions with respect to particular topics, examine the degree to which current research is responsive to the needs of policy makers, and suggest priorities for future research.

Still other seminars and workshops would concentrate on problems of teaching in Asian universities because of the urgent need to train
more researchers and to give them better training than they now receive.

An outside organization has an advantage in sponsoring such seminars both within individual countries and internationally because it can select the most appropriate persons for the seminars without regard to internal hierarchies or organizational responsibilities. Consequently, invitations to participate in all of these types of seminars should be issued to individuals by the Institute itself, rather than by asking governments to select representatives. This is necessary in order to get the right persons: professionally active researchers interested in particular topics wherever they may be located at home, and policy makers and research administrators who are themselves decision makers, rather than their assistants.

**Distribution of research results.** The second part of Activity I would be arrangements for distributing research papers and other pertinent materials to interested researchers and teachers throughout the area served by the Institute. This could be done on the basis of highly classified mailing lists, so that individuals would get the documents in which they have a special interest.

**Research projects.** The Institute should stimulate, engage in, and in some cases finance research on selected problems with preference given to international projects but not ruling out some projects in individual countries. These might or might not be projects that had been developed in Institute seminars or workshops. Past experience indicates that a number of projects developed in seminars and workshops might be picked up for national implementation without Institute funding. Projects funded by the Institute would not be limited to a list of priority topics selected by the Institute in advance, but the Institute
would influence the nature of research topics submitted in the future for financial support through its selection of topics for seminars and workshops.

**Activity II - Library and Documentation Center**

It is a tragedy that there does not yet exist anywhere in South or Southeast Asia a really first-class library and documentation center on the economic and social aspects of agricultural development. There ought to be at least one first-class center of this type in each country. Building up a library and documentation center for the Institute would immediately make one such facility available for members of the Institute's staff and for those who could travel to it. In addition, it could aid in strengthening national library facilities by making copies of important documents available.

**Activity III - Staff Participation in Research**

The Institute should itself have a small staff of social science researchers engaging personally in selected research projects in addition to participating actively in Activity I. They would be an important part, but not all, of the wider "staff" of the Institute.

Activity I would be made central to make more effective use of research personnel already in place in individual countries. Those present research personnel are, and should be, scattered in numerous locations in each country. They are, and should be, responsive mainly

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*It could be argued that this staff should include biological and physical scientists as well. However, it is implicit in this whole approach that the active "staff" of the Institute should be construed as including biological and physical, as well as social, scientists of all countries in the region. Similarly, it should be construed as including the staffs of IRRI and all other scientific agencies in the region. To include biological and physical scientists in the full-time staff of the new Institute itself would immediately raise questions of which of many scientific specialties should be included. All could not be.*
to presently perceived national research priorities.

The professional staff of a regional international Institute ought to supplement and interact with those national resources in two ways. One would be by adding to the presently available research personnel in the region. The other would be to provide, at one location, a strong multidisciplinary staff of social science researchers who are not constrained by presently perceived national priorities.

Consequently, the function of this Institute staff would differ, in a subtle but important way, from that in the present international institutes. Here its function would be to participate professionally (1) in all phases of Activity I, (2) being simultaneously engaged directly in selected research projects, and (3) participating critically in the determination of future priorities for Institute activities.

In order to serve those functions, the amount of direct research in which each member of the Institute's staff participates (whether individual, or in cooperation with other Institute staff members, or in cooperation with national research workers) should be limited to what he can accomplish in one-half of his time each year. The other half of his time should be devoted to consulting with researchers, policy makers and administrators in individual countries and to participating in the broader program of the Institute.

In addition, having a professional staff to undertake these tasks would enable the Institute to play a significant role in the training of additional researchers. That could be done by having selected graduate students do their dissertation research at the Institute under the direction of one of the Institute's staff members on the basis of appropriate arrangements with their respective universities.
This professional staff should be composed of from perhaps eight to twelve social scientists representing different disciplines or fields of specialization, recruited from anywhere in the world.

**Activity IV - Visiting Research Scholars**

Finally, I would suggest that the Institute make provision for the support of perhaps six to twelve visiting research specialists at any one time, each working at the Institute for from three to perhaps twelve months. He might devote full-time to his own research, outlined in advance, or he might serve as an additional member of a research team made up partly of members of the Institute's own research staff. Persons chosen as visiting research specialists might be in mid-career, or they might be persons who had recently completed graduate study and were awarded what would be, in effect, post-degree research appointments. Within this program it could be made possible for a visiting research specialist to bring one or two of his own graduate students with him, combining their dissertation research with his own study while at the Institute.

A question that could well be asked is why I do not propose establishing a larger Institute staff in Activity III. My judgment on this is based partly on the consideration that the staff of the Institute should be interpreted as including all agricultural scientists throughout Asia rather than just those employed by the Institute. It is based partly on a preference for securing a larger resident but constantly revolving staff for the Institute by adding Activity IV rather than by having more continuing full-time staff members. In its total program, the Institute would, at any one time, have a resident staff of fourteen to twenty-four, with six to twelve of them being temporary.
visiting research specialists. If more members were to be added to the full-time staff, consideration should be given to stationing each of these additional staff members at an appropriate national institution somewhere else in the region and not at the Institute itself in order to have more day-to-day contact with participating national institutions.

Provision of Facilities for Quantitative Research

In such an Institute as here proposed, it would be essential that facilities for conducting sophisticated quantitative research be available. Techniques of linear programming, recursive programming, systems of simultaneous equations, and simulation models employing various combinations of these and other techniques are now widely used in many countries and more are being developed every day. They are being applied to the study of more and more economic and social problems. All require computer equipment for their use. Consequently, it would be imperative, if an Institute were to be established with a research staff of its own and with visiting research specialists temporarily in residence that fully modern computational facilities be made available. Along with that, the "library" discussed as Activity II should be expanded to include the standardized computer programs that would be useful.

III. Concluding Comments

It should be recognized that in drafting this discussion paper I have set aside several earlier proposals that emphasized different specific problem foci for such an Institute. One of those was the proposal that the Institute concentrate on developing viable agricultural policies.

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6This arrangement would facilitate giving effect to the suggestion of Dr. Edgar O Edwards of setting up temporary task forces to study particular problems.
Another was that the initial thrust be an attempt to expand the agricultural data base, country-by-country. A third was that international arrangements be developed specifically to study the so-called second generation problems. A fourth is that the Institute should concentrate primarily on refining methodologies at the frontiers of economic and social research.

The focus suggested here does not rule out activities related to any of these. Instead, it concentrates on providing the framework within which researchers of all disciplines throughout Asia could work together on problems selected in accord with the perceived and changing priorities of each country and of Asia as a region. Second generation problems would inevitably receive attention. Data needs would lead to a concerted effort to improve them. The adequacy of existing methodologies would be certain to be called into question and the search for better ones would proceed in the context of individual problems being studied. Significance for policy determination should be a major criterion in determining priorities.

My preference for not adopting a single problem focus for the Institute is based on several considerations mentioned at various points earlier in this paper:

1. that economic and social problems (even those of unquestioned crucial importance) are so numerous that for an Institute to concentrate on any one of them alone would be unduly restrictive;
2. that economic and social problems which are common to several countries involve sufficient differences because of different national settings that they need to be studied in each country rather than primarily at an international Institute;
3. that research priorities keep shifting from year to year, so that being limited to a specific problem focus would restrict the usefulness of an international Institute;
that determining research priorities is a function to be stimulated country by country, with international agencies concerned about it, contributing to it, but not dominating it.

It is conceivable that after a few years of operation a very few research topic foci might emerge as being the most important ones to deal with. But if that happened it would have emerged out of the process of the interaction among researchers, policy makers and administrators of different countries -- an interaction that the proposed program of the Institute would have made possible.

My other concluding comment is that the need for strengthening and extending the training of social scientists remains and must be dealt with. No substantially enlarged program can be mounted, either nationally or internationally, unless that is done. There is great need for revising undergraduate programs, for subsidizing the production of teaching materials, for strengthening graduate training in Asian universities, for involving graduate students in major research activities, and for expanded programs providing graduate assistantships at Asian universities and fellowships for Ph.D. study, both within and outside of Asia. This is a major need that in my judgment cannot adequately be met by a new Institute devoted primarily to research on economic and social problems, although it can help. As with the present international institutes, there would be an opportunity for graduate students of various universities to do dissertation research in conjunction with the new Institute and the Institute would undoubtedly mount special training programs of its own, but it could not meet the major part of the need. The continuation and strengthening of other activities of technical assistance agencies will be needed in each country to that end.