AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY
Batch 52

1. SUBJECT CLASSIFICATION
A. PRIMARY: TEMPORARY
B. SECONDARY:

2. TITLE AND SUBTITLE
A methodology for indicators of social development,final report

3. AUTHOR(S)
Wilcox,L.D.

4. DOCUMENT DATE: 1977
5. NUMBER OF PAGES: 92p.
6. ARC NUMBER: ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS
Iowa State

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)
(In Sociology rpt.no.127)

9. ABSTRACT (DEVELOPMENT R & D)

There is a growing interest in social planning in developing countries where a great deal of development planning is directly concerned with instigating social changes considered necessary for self-sustaining economic growth and national development. Most of the social indicators have been designed for use in statistically advanced countries. It is necessary to design and implement social indicators adapted to the needs of development planning and social policy in less developed countries. This is an extensive review and analysis of the many methodological approaches to social indicator design and development recently proposed, coupled with a general inventory of operational indicators that are applicable to sector planning in the areas of health, nutrition, education, demography and agriculture. The primary objectives of the review are the identification of methodological approaches for the selection, design and use of social indicators that are especially applicable to the planning contexts of less developed countries and to assemble a compendium of measures that have been proposed as indicators for sectoral planning. The orientation of this report is primarily toward an analysis of the process of selection and design of indicators and argues that an operational or problem oriented approach to social indicator development may prove more beneficial to less developed countires than the social accounting and social systems approaches advocated for more statistically developed countries. There is a brief description and analysis of current social indicator research and its applicability to the needs of less developed countries. The remainder of the report focuses on the development of some of the basic methodological problems and procedures of an operational or policy-oriented approach to social indicator design.

10. CONTROL NUMBER
PN-AAD-270

11. PRICE OF DOCUMENT

12. DESCRIPTORS

13. PROJECT NUMBER

14. CONTRACT NUMBER
CSD-3642 Res.

15. TYPE OF DOCUMENT

AID 590-1 (4-74)

CSD-3642 GTS
PN-AAD-270

A METHODOLOGY FOR INDICATORS OF SOCIAL DEVELOPMENT
Final Report

Leslie D. Wilcox

Contract AID/csd-3642
Submitted to: U.S. Agency for International Development, Washington, D.C.

SOCIOLOGICAL STUDIES IN SOCIAL INDICATORS.....Project Co-Directors: Leslie D. Wilcox, Gerald E. Klonglan, George M. Beal; Project Associates: H.C. Chang, Richard D. Warren, Robert Crown; Project Assistants: Wm. Alex McIntosh, K. William Wasson, Dan Tweed, John Callaghan, Kerry J. Byrnes, Saundra M. Hunter, Song-Min Kim, Jaleh Shadi-Talab, Susan Evers, Anan Chiamcharoen; Editorial Consultants: Rowena James and Janet Griesch.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY.....IOWA STATE UNIVERSITY of Science and Technology, Ames, Iowa
April 1977

Sociology Report No. 127

(This report does not necessairly reflect the views of The U.S. Agency for International Development)

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INTRODUCTION

During the past two decades, both the requirement and opportunity for social planning have increased enormously in all parts of the world. This growing interest in social planning has been especially true in less developed countries (LDCs) where a great deal of development planning is directly concerned with instigating social changes considered necessary for self-sustaining economic growth and national development.

In response to the growing need for improved social information to assist social planning and public policy decisions, an increasing number of research institutes, national governments and international organizations have engaged in systematic efforts to design social indicators and improve the statistical basis for decision making. For the most part, this work has been carried out in economically advanced countries, and has focused primarily on efforts to index various aspects of social life and the measurement of social change processes characteristic of statistically advanced countries. Far less effort has been invested in research to design and implement social indicators that are uniquely adapted to the information needs of development planning and social policy in LDCs.

This study has attempted to address that problem by undertaking an extensive review and analysis of the many methodological approaches to social indicator design and development that have recently been proposed, coupled with a general inventory of operational indicators that are applicable to sector planning in the broad areas of health, nutrition, education, demography and agriculture. The primary objectives of this review have been: (1) the identification of methodological approaches for the selection, design and use of social indicators that are especially applicable to the planning contexts of LDCs, and (2) to assemble a

compendium of measures that have been proposed as indicators for sectoral planning.

The scope and intensity of the work undertaken to develop social indicators during the past decade is impressive. Currently most of the economically advanced countries of the world are engaged in some type of official program related to social indicator development. Yet, despite a very considerable investment of money and effort social indicators have been slow to emerge. In fact, few, if any, new indicators have appeared during the past decade that have had a significant impact on public policy decisions. This failure to produce policy relevant indicators does not seem to be as much the technical problems of measurement as it does the conceptual and theoretical problems of identifying useful and needed indicators.

For this reason, this report is primarily oriented toward an analysis of the process of selection and design of indicators and argues that an operational or problem oriented approach to social indicator development may prove more beneficial to LDCs than many of the social accounting and social systems approaches advocated for more statistically developed countries. Chapter one provides a brief description and analysis of current social indicator research and its applicability to the needs of less developed countries. The remainder of the report focuses on the development of some of the basic methodological problems and procedures of an operational or policy-oriented approach to social indicator design.

CHAPTER 1

The Social Indicator Movement

A. The Origins and Nature of the Movement

Current interest in social indicators was triggered during the 1960s by a growing awareness that the rapid economic development and growing affluence of Western Nations had been accompanied by a number of serious social problems that required more direct public attention. Since that time the interest in social indicators has become so widespread that it is now popularly referred to as "the social indicator" movement. The stimulus for the movement has come from a variety of sources and has focused on the measurement of an ever widening list of social conditions, to the extent that the movement is now highly amorphous and ill defined. Three major sources of interest in the development of social indicators has been especially important in determining the nature and scope of work now associated with this movement.

In the policy world, interest was stimulated by a desire to develop improved means of making quantitative assessments of social conditions that could pave the way for more informed policy decisions and for the monitoring of the effects of public policies. This led to a search for aggregative measure to measure social change and monitor national trends. At the program and project level, the continuous push to develop improved program planning, budgeting and evaluating procedures provided further stimulus for social indicator development. As a result, governmental interests and programming problems have stimulated a widespread search for indicators of many kinds, with functions that are descriptive, predictive or prescriptive. Hence, some think in terms of a widely

ranging compendium of indicators covering all kinds and levels of information needs confronting various levels and types of government administration. Others think in terms of a limited set of aggregative measures that are patterned along the lines of national economic accounting systems.

Paralleling the policy interest in the subject has been that of statisticians. With the elaboration of the economic accounts largely achieved, statisticians in government have turned their attention increasingly toward the elaboration of social statistics. This work has progressed along two lines. One has been an effort to improve individual social statistical series, and the other has been toward the creation of large social accounting systems to integrate social and demographic statistics. One of the best known of these efforts is the demographic and social accounting system proposed by Richard Stone (Stone, 1971). The basis of this system is designed to monitor the stock and flow of population through various active and passive phases of life from birth to death. In principle, such a scheme can accommodate most kinds of information on the states and movements of members of a population. In practice, however, the statistical requirements of these systems are high, and it will be a very long time before social accounting systems of this type can be made fully operational, even in the most statistically advanced nations.

A third source of interest in social indicator work has come from academic social scientists. Generally the work carried out in academic circles has focused on the development of improved techniques for measuring change and in evolving explanatory or predictive models. These efforts have been concerned with the measurement and modeling of both

subjective and objective human conditions. The primary thrust, however, has focused on summarization and use of existing data series, improvement in measurement techniques and the development and expansion of social scientific theory. In this sense, the work done by academicians has more often had scientific rather than policy-oriented objectives.

Due to the broadly based interest in social indicators, it is not surprising to find that one of the more salient features of the movement has been a general inability to attain concensus on the purposes for which social indicators are to be designed or the uses to which they will be applied. As a result, the term "social indicator" clearly means many things to many people. This lack of concensus largely accounts for the amorphous and ill defined nature of the term. Sheldon and Freeman (1970:98) have noted this lack of integration in the movement:

> The term social indicator must be regarded as an elusive concept... The elusiveness of the concept...stems from the multitude of views on the relevance and purpose of developing and organizing statistics about the state of affairs in the country and its constituent parts... The vagueness of the concept encourages persons to advocate their own particular perspectives, further increasing the confusion about the utility of social statistics.

To a great extent the elusiveness of the concept largely stems from the abstract nature of the term "social" and past tendencies to juxtapose it with the term economic. Dunn (1974:103), for instance, has observed:

> The advocates of social indicators are locked into a catch phrase that contains little semantic capacity for differentiating concepts. The result is that each advocate adopts a definition matching his perception of the data requirements that serve concepts important to him. The most diverse meanings, therefore, come to be attached to the same expression... The use of the term "social" as a differentiating adjective only compounds the problem. There is hardly a more general or abstract term in the language. It pertains to all of the human and social system interrelationships that constitute society. In order to give the term differentiating power, we find it being defined in the strangest ways, as in the case of its use to differentiate

> noneconomic from economic indicators; or again, in its implied use for differentiating external from internal operating environments. In either case, can one be designated as more social than the other? The inevitable results is that the term comes to mean what people want it to mean...

There is little doubt that a great many innovative and potentially valuable proposals have been produced in this movement, despite the disintegration that is so obvious. The problem for the practitioner, however, is to sort out those proposals and indicators that can be useful to him in his applied work from those proposals that will have greater relevance for some other form of social scientific inquiry or analysis. This is by no means a simple task. For this reason, the immediate applicability of so much of this work to the planning context of LDCs must be questioned for several reasons.

The first constraint for implementing currently proposed social indicator or social accounting systems in LDCs is the heavy data requirements imposed on a country. Although some good statistical data may be found in almost every country, planning in most LDCs is severely handicapped by widespread lack of information. Most LDCs have only elementary statistical services and their statistical organizations are almost invariably weak and ineffective. Thus, both the quantity and quality of data available in most LDCs is generally considered to be inadequate for most conventional forms of social and economic planning.

At the same time, there is a great difference between the limited immediate needs for planning data in most LDCs and the ambitious, seemingly insatiable, programs of statistical reform advocated by the experts. Because of this, few government authorities in the poorer nations have seriously entertained any thought of executing the sometimes grandiose and costly proposals for statistical betterment which foreign

advisers make (Waterston, 1969). Most of the current proposals for social indicator and social accounting systems do little to solve this problem. On the contrary, they too often involve even more grandiose statistical schemes than those that have been suggested to leaders of LDCs in the past. For this reason alone, there is reason to believe that so much of current social indicator work in advanced countries will have little appeal to leaders of LDCs unless it can be clearly demonstrated that it will further their nation's development.

The problem of demonstrating that current social indicator work will further a nation's development implies a second constraint to the application of this work to LDCs. For the most part social indicator research in the Western World is largely experimental in nature and the relevance of most of the proposed indicators to planning and policy formation is by no means clear. For the most part, social indicator work has been concerned with: 1) the identification of gaps in existing data series and in generating new statistical series to fill those gaps; 2) the problems of measurement of social change; and 3) the analysis of relationships between statistical series.

Even though one of the major arguments for the need for social indicators has been to serve the requirements of public policy, advocates in the field have not addressed the question of the policy relevance of their work very well, and in some instances seem to display some reluctance to move in that direction. For this reason, the type of social indicators currently being developed might best be thought of as indexes that may contribute to the background enlightenment of planners and decision makers, and possibly may serve to infuence the choice of goals and strategies, rather than aiding directly the decision making

process. At their best, this type of indicator could give a pointed summary of: 1) the state of society in given fields; 2) social changes relevant to them; 3) outstanding social problems of the day or emerging social problems; and if appropriately chosen, 4) the effects of social programs. Such functions could be of great help in providing information for more informed decision making, however, the limited resources that most LDCs have to invest in data systems suggest that a more practical problem or policy-oriented approach to social indicator development may be more desirable for less statistically developed countries.

The lack of attention to the policy relevance of social indicator work points to a third interesting characteristic of the social indicator movement in more advanced countries. This is the marked tendency for the selection and design of social indicators to be undertaken largely in isolation from the potential user. A vast amount of the work that falls under the heading of social indicator research has been undertaken by academic or private research organizations, and under conditions where both the conceptual and measurement decisions have been left primarily to the discretion of the researcher, rather than to the potential user. Even in the more publicized efforts of national governments and international organizations, the practitioner or data user has been brought into the design process of social indicator development primarily at the abstract level of identifying areas of policy concern. But rarely have they played an active role in the considerations of the actual selection and design of the measures themselves.

There is now good reason to believe that the failure to maintain close collaboration between data users and data producers largely accounts for

the failure of current social indicator research to produce new indicators that are able to play a meaningful role in social planning and policy decisions. The fault seems to lie with both the producers of statistical indicators for failure to address more effectively the information needs, objectives and constraints of decision makers, and with those in decision making roles for not taking a more active role in creating a statistical system which permit them to choose the indicators they need and to make use of them.

The experiences gained in past social indicator research, therefore, seem to suggest that policy relevant indicators cannot be effectively developed in isolation from the actual processes of decision making and action in which they will be used. Rather, there is evidence to support the view that the selection and design of policy relevant indicators is most effectively carried out when made an integral part of the decision making process of development planning and public choice (De Neufville, 1975).

B. Approaches to Development Indicators

International work on development indicators has progressed along three lines: the theoretical, empirical and operational (Baster, 1972). Each approach has strengths and weaknesses. In the short-run, the operational approach seems to offer greater possibilities of producing policy relevant indicators. In the long-run concerted effort in all three areas will, no doubt, be required to produce valid and reliable development indicators.

In the theoretical approach, existing analytical models are used as the starting point for selecting indicators and moves from these to the design of measures and the collection of data. The difficulty in

using this approach stems from the fact that, even though there are many models of development available, there is no agreement about a general model of development. As a result, most of the indicator work done from this perspective has had a clearly discipline bias.

Considerable effort has been devoted to the conceptual refinement of social systems models and the expansion of sociological, economic and political science models to embrace a wider range of social issues (Drewnowski, 1970; Fox, 1974; Rosenstein-Rodan, 1969; Sametz, 1968; Young, 1972 ; Pye, 1968; Deutsch, 1961). As current theory is systematically brought to focus on common problems there will, no doubt, be a gradual convergence of perspectives that may result in the formulation of a general model. In the meantime these various theories and perspectives lend themselves to quite different perspectives of development and to the specification of quite different sets of indicators.

Since current development models are, at best, partial models that reflect the biases of the various academic disciplines, they have serious limitations in devising indicators for problems that are trans-disciplinary in nature. The search for knowledge and understanding proceeds well on the traditional scientific values of discipline research. When we turn our knowledge to use, however, there seems to be a need for a broader set of social values. For this reason, we believe that more progress is likely to be made, in the short-run, by integrating variables from different disciplines within an operationally-oriented approach.

Efforts to empirically measure development normally start from existing collections of data that seem relevant, and look for systematic relations between statistical series. Among the more publicized

efforts to evolve indicators through empirical analysis is the earlier indicator work of UNRISD. The primary objective of this study was to construct a synthetic index of development which is more representative and sensitive than per capita G.N.P. The index was constructed from eighteeen highly intercorrelated variables. Nine of these variables were economic in nature and the remainder were more social (level of living) in nature. A number of other studies have sought to develop indicators that are sensitive to developmental change through the selection and summarization of statistical series, using various forms of statistical analysis (Adelman and Morris, 1967; Beckerman and Bacon, 1966; Harbison, 1970; Szczepanik, 1972).

These efforts have provided insights into the problems of measuring development and will, no doubt, prove helpful in analysis of development problems. They have, however, been criticized in their failure to take into account geographical and natural resource situations, their inability to deal with distributional problems and especially heavy reliance in factors which lend themselves to easy quantification (UNESCO, 1971). In nearly all cases the choice of indicators are governed by the availability of data rather than by the conceptual problems and objectives of development plans and programs. For this reason there has been little success, as yet, in relating these measures to public policy.

The more fruitful efforts to design social development indicators seems to be t.ose that have been selected and designed in a planning or policy-oriented context, in which the primary focus of concern is the generation of information required for decision making. In such a context, values and objectives can be clarified and indicators designed

to measure progress within the context of those broader values. Most development programs are defined in terms of trans-discipline problems and often require analysis of a number of variables drawn from several different disciplinary approaches. Therefore, an operational approach provides an integrative context in which relevant theories or sub-sets of theories, as well as empirically derived measures can be brought to bear on important development problems and issues. It is believed that in this type of context that the link between a statistical measure and policy objectives can be established in the creation of usable social indicators.

CHAPTER 2

Development Indicators In An Operational Context

While both the requirement and opportunity for social planning have enlarged enormously in the last decade, there is still considerable uncertainty among planners and policy makers concerning the choice of indicators that can effectively serve their purposes in formulating realistic development policies, and in mounting an effective attack on the multiple problems confronting their countries at various stages of development. This uncertainty arises, in part, because of the complexity of the problems they confront, coupled with the scarcity of theoretical knowledge and deficient national statistics. It must also be, in part, a lack of conceptual clarity on the part of policy makers concerning their perceptions of the nature of development problems and an inability to come to consensus on clearly defined development policies.

Whatever the reason may be, however, it is clear that the choice of development indicators is a complex and difficult task. The evolution of reliable and valid indicators will, no doubt, require considerable interdisciplinary research and collaborative efforts by researchers and policy makers to permit the testing of the different assumptions made about the nature of development problems, the sorting out of the methodological problems of measurement and the empirical verification of the indicators chosen, and this will take time.

The focal concern of this chapter is centered on that selection process and argues that in the short run at least, indicators that will have utility for development programs must be selected and designed

within the operational context of development planning and decision making. But first, it is useful to examine the nature and definition of indicators within the context of development.

A. Development Indicators

By definition an indicator represents something, or at least purports to. Development indicators are, therefore, social or economic variables (usually quartified) that represent some aspect of the development process. Social and economic variables or statistics, however, are not indicators in and of themselves. They can be conceived as indicators only to the extent that they represent some aspect or concept of development that is theoretically or normatively relevant. In other words, indicators are not simply statistics, and statistics are not indicators, unless some theory, model or hypothesis makes them so by relating the statistical variable to a broader concept or phenomenon associated with the development progress (McGranahan, 1972).

An effort to select and design development indicators, therefore, constitutes an attempt to quantify some conception, definition or model of development. Both the scope and nature of the indicators chosen, as well as the design of the measure will largerly depend on that definition or conception. Since there are many definitions and theories of development, it follows that indicators that are most likely to be used and beneficial in public decisions are those that most accurately reflect the particular perceptions, purposes and models of development that are brought into play in the formulation of development strategies and policies in specific operational contexts. The selection and design of development indicators, therefore, cannot be conceived simply as a process of summarizing existing statistical series; nor can it be viewed

solely as a process of statistical reform. Rather the selection and design of a development indicator must be conceived as a conscious and systematic attempt to measure some process of social change that is defined as relevant and important to development planning within a specific operational context.

B. Development Values and Operational Indicators

It is now generally recognized that development is a multidimensional process of changes involving changes in social structures and social institutions, as well as growth and distribution of output. However, social changes that are considered developmental are not random or indiscriminate, rather they are directly related to development values. In this sense, development can be conceived as a process of social change leading toward the attainment of preferred conditions or preferred states in an social system or society.

From the point of view of measurement and analysis, it is helpful to make a "distinction between development as a normative concept and development as an empirical process" (Baster, 1972:2). As a normative concept, development involves values, goals and standards that make it possible to compare a present state against a preferred state. This of course poses the basic dilemma confronting any effort to assess development progress, namely "Whose values are to be taken into account in the measurement of development?" "Are these to be impersonal market values?" "The values often hidden in the structure of social and economic theory?" "The values of planners or political elites?" "The values of the people to be influenced by development action?" etc.

In the realities of development planning these various sources of value standards do come into play in decision making in varying combinations

and in varying degrees of scope and intensity. The planning process provides a means by which leaders in LDCs can define and clarify problems, establish goals and take action on them. Because the chief objective of social development is to improve the life conditions of people and the operating environment in which they live, the planning process must be responsive in some degree to needs and problems of different interest groups, as well as to externalities that bring pressures to bear on the decision making process. It is in this context of decision making and action that relevant values are brought into play in the identification of problems, the weighing of alternatives, the setting of priorities and the articulation of the social objectives that define the scope and content of planned social development.

The planning process also provides a means through which policy relevant and operationally usable development indicators can be selected and designed that are consistent with the models and objectives of social development that evolve from the planning process. Since the indicators chosen to measure social progress greatly influence the way in which one thinks about social problems, as well as the way in which development plans are implemented, the selection of indicators should be made a conscious and systematic part of the decision making processes. In other words, if decision makers are to maximize their opportunities for choice, and maintain planning flexibility, they must also understand and control the choice and design of the indicators they use. The choice of development indicators therefore should not be an indiscriminate or random process any more than the choice of objectives; rather they should also be chosen in relation to the development values and models involved in the operational context of decision making and action. This is especially true where the concepts involved are vague

or policy objectives unclear, for once an indicator is selected it has an inherent tendency to take over the problem defining functions.

C. Concepts and Measurement

When indicators are chosen with a view of measuring social conditions it must be made clear which aspects of the social condition are to be measured. The failure of past social indicator research to produce policy relevant indicators centers largely at this point. If the purpose of measurement is primarily concerned with the advancement of scientific knowledge and technique, the choice can be largely left to the interests of the researcher. If the purpose of measurement is to assist the formulation of public policy, or to aid the planning of development strategies, the determination of what should be measured falls more heavily on the shoulders of the user of the indicator than on the producer.

In part, the failure to produce policy relevant indicators must be attributed to a failure to draw researcher and statisticians more fully into the decision making processes of development where they can be sensitized to the problems and issues under consideration. But it is also due to the complexity of development and the vagueness of many of the policy relevant concepts with which planners and policy makers are involved. For this reason, it is now generally recognized that the problems of creating new indicators that are policy relevant is both conceptual and technical in nature, requiring close collaboration between the designer and user of indicators. Measurement can be attempted only on something which is conceptually quantifiable. Before proceeding to measurement, it must be made clear exactly what is to be measured and then it must be determined whether it is a measureable concept.

One of the major obstacles to designing new indicators is the fact that many of the significant concepts of development concern are either too vague to quantify or there is too little agreement on the nature and dimensions of the concept to establish a generally accepted definition that is measurable. The concept of "development" itself is a case in point. In the past, per capita income and GNP were used as indicators of development because they functioned as aggregative indexes which were indentifiable, measurable and manageable and could serve the purpose of international comparison. These indicators, however, ignore the social component and, at best, are only an indirect measure of the level of living possibilities, but not of actual patterns of living. To compensate for this, extensive efforts have been directed toward the development of indexes of "quality of life," "social well-being" and "levels of living." To date, little progress has been made in establishing a generally accepted definition of these concepts or in specifying the basic dimensions of these social conditions that should be included in an index. Even more than that, the technical problems of combining various dimensions of these social conditions into a general index has, thus far, proven insurmountable. At the same time, the data requirements of the proposed indexes are of such a nature that even the more statistically advanced countries are hard pressed to even partially meet them.

Many of the same problems hold, however, when you examine separately some of the basic dimensions of human well-being. A central social concern in all nations is that of health, and considerable expenditure of public resources is spent annually for improved health care. Yet, a generally accepted index of health is still unavailable largely because of the basic conceptual problem of deciding what good health is. In the

absence of a health index the trend has been to rely heavily on negative indicators such as morbidity or motality indexes. But, even these indexes require a fairly sophisticated system of vital statistics which are frequently not available in LDCs. Education is also a major concern in nearly all countries. However, an index of education is also unavailable that actually measures the qualitative aspects of learning. This too is largely due to the basic conceptual problem of deciding what quality of education is. Thus, much of current educational indicators focus on the processing of people through the educational system and the number of formal years of training received.

The process of formulating a measurable concept has often proven to be a long and difficult task even when exposed to concentrated effort. Work on health and education indexes have been underway, in more advanced countries, for at least two decades. Even some of the more common economic indicators such as the unemployment index has also been in the process of refinement for nearly two decades. Basically, the process of evolving policy relevant indicators that are measurable and manageable take time to develop because they involve not only data and measurement problems, but also require concentrated effort to clarify values and test assumptions about the nature of social problems. Normally, the establishment of usable indicators is not something that is accomplished on the first attempt, but usually involve an extensive period of trial and error in which measures are designed, tested in the decision making arena, and often, sent back to the drawing boards for redesign. Hence, the evolution of measureable concepts that are directly relevant to development policy may require a fairly long run iterative process of conceptualization, measurement and use.

The planning process provides an institutional context in which this type of iterative process between the designer and user of indicators can take place. It is here that the conceptions and models (images by which one arranges and order's thinking about development or about social problems) that guide development policy and action are formed, clarified and articulated into strategies of development action. It is in the context of the dialogue and debate, that normally surround the decision making processes of development planning and policy, that values are clarified and objectives defined. The action phases of planning provide opportunity to test out the applicability of each indicator. To allow an iterative process of this type to work, it is imperative that the selection and design of indicators be made an integral part of the decision making processes of development planning.

An operational or policy-oriented approach to the selection and design of social indicators, therefore can be conceived as involving a number of steps that should go on in parallel with the planning and implementation process of development:

1. The clarification and definition of major development problems or themes of development policy;
2. The clarification of the major dimensions of the problems and the concepts involved;
3. The designs of measures or operational indicators of those different concepts and dimensions;
4. Analysis of the linkages between operational indicators selected;
5. Evaluation of the utility of the indicators chosen within the operational context of development planning, decision making and action;
6. Redesign of indicators if that fails to provide the type of information required.

The operational approach to indicator design, therefore, suggests the importance of establishing an iterative process between researchers, concerned with indicator design and measurement, and policy makers and planners involved with their use. Such an iterative process permits the testing of the different assumptions made about the nature of development problems and the empirical verification of the indicators chosen. But more important, it provides a context in which the values, models and concepts of importance in the planning process can be more clearly defined, for precision in measurement is dependent on conceptual clarity. In other words, the act of designing measures of concepts forces policy makers to clarify their concepts so that they can be measured. Greater conceptual clarity, in turn, allows for more precision in measurement. The two process feed back upon one another in ways that are beneficial to both.

D. Development Objectives and Development Models

There is an underlying assumption running through the previous discussion that development, like all other forms of purposeful action is based on models. To initiate action one must have some presumption about the results of one's action. This requires some assumptions, or understandings, about which features of the environment are important and how they may interact and respond to possible courses of action initiated. In development planning these models (usually not explicit) are basically normative in nature, in the sense that they describe preferred conditions against which to measure the actual. Such normative models play critical roles in defining development problems, establishing program goals and

initiating development action. They are also of fundamental importance in the selection and design of policy relevant indicators.

Since development indicators are concerned with measurement of social progress toward the attainment of preferred conditions, one way to begin to cut into the problem of creating measureable concepts that are policy relevant is by systematic efforts to make those normative models that define preferred conditions more explicit. Within the context of development planning in LDCs, normative models of development are derived from a number of sources and often pose quite different definitions of development problems, as well as strategies for their resolution. The analysis and understanding of these models, and the way they come into play in the context of decision making, is important to the designer of indicators in gaining an understanding of how problems are defined in a given setting, and the type of indicator that may be useful in that setting. In reality every decision maker will have his own unique model of preferred conditions. A comprehensive typology of decision making models is, therefore, impossible. There are, however, several important sources of normative models of development that do, often, influence policy decisions in LDCS that can be noted.

One important source of normative models of development that influence decisions about preferred conditions is the socio-cultural history and traditions of a country. The culture of any society provides a range of value standards that pertain to nearly all facets of life. These standards not only provide perspectives concerning preferred conditions, but also, regulative standards concerning appropriate behavior, human interrelationships and culturally approved means for achieving goals. While developmental change is frequently concerned with changing some of these

traditional institutional patterns, other value standards are considered of fundamental importance in any society, and thereby, play significant roles in the problem defining and action processes of development planning. Development programs that are not sensitive to these unique cultural definitions of preferred conditions are certainly destined to failure.

Because cultural standards may vary from one country to another, there is good reason to believe that the preferred conditions or objectives of social development may also vary considerably. For this reason, it is assumed that the goals, and hence the indicators, that guide development planning must be formulated by each society consistent with the values of that society. This cannot be done by outsiders, or by researchers primarily concerned with social measurement, but must be done by competent scholars and officials of each country for that country. The decision making process of public choice provides a means, whereby these values can have expression. The wider the popular participation in that process, the greater will be the capability of a people to create the type of society they prefer. Indicators that will have high utility in that society will be those that are designed in full recognition and understanding of those preferences for social development.

A second source of normative models that influence development decisions derives from the development experience of other countries (or other regions and strata of the same country). One of the primary sources of the thrust toward modernity and development in less developed areas of the world is, for instance, the development experiences of more economically developed countries. The belief that LDCs may achieve accelerated development through imititation of advanced countries has been a significant factor in many development decisions over the past three decades. From

the point of view of measuring development progress, the central concern is not whether such a model is desirable for a country. Rather, the imperative concern is that, whenever these models are used, they be made explicit so that indicators can be chosen which accurately reflect the intent of programs. Clearly, this type of model may provide quite a different set of criteria for defining development problems, and for establishing program goal and strategies, than models based on the unique culture and history of the country.

A third source of normative models of development are the various social and political ideologies that continually strive for recognition and commitment in LDCs. Ideological models not only include the traditional political ideologies of capitalism, socialism and communism, but also, social ideologies such as "Small is Beautifulism," humanitarianism, materialism, mass consumerism, intermediate technologism, etc. On the basis of these ideologies, a number of very basic substantive concerns in current development have been established, including such concepts as social justice, distributive justice, income distribution equalization of opportunity, quality of life, standards of living and human well-being. Ideological models, therefore, must be conceived as a very important source of value standards by which preferred conditions are defined and, to the extent that they are involved in decision making and planning, they also must be made explicit if indicators are to be designed to reflect those concerns.

A fourth source of normative models of development derives from scientific theory. Even though scientists seek to establish objective or value free theories that describe and explain the reality they are studying, when these models are employed to define development problems

they are inherently normative in the application. The spotting of problems through scientific analysis simply implies that the scientific model used has the capacity to define a preferred condition, and therefore it becomes a value standard in and of itself. Too often the value implications of using scientific theory in development analysis is overlooked or ignored. If decision makers are to maximize their opportunities for choice, however, these values should be made just as explicit as other competing values derived from other sources. Since modern social scientific theories have largely been formed through analysis of the evolution and organization of modernized societies, they often intermesh well with development strategies concerned with the imitation of modern, economically advanced countries.

The importance of this discussion of normative models of development (even though clearly incomplete) is to emphasize the fact that development problems and objectives cannot be assumed to be givens that policy makers and planners must unquestionably accept. Rather, any problem can be defined in quite different ways depending on the specific model used, and each model poses its own unique definition of preferred conditions and strategies required to achieve it. For example, the problem of health may be defined as the lack of modernized health care systems characteristic of modernized countries. In which case, the solution is obviously the institutionalization of modernized health facilities and services. On the other hand, health may be defined in terms of the vulnerability of a population to infectious disease. In this case the solution specified may be either to increase resistence to disease through immunization or to reduce the hazards of infectious disease by cleaning up the environment, or both. The health problem may also be defined in terms of

inequality of access to health services, in which case objectives of distributive justice may call for more equitable distribution of services.

In turn, the indicators that are most apt to be used are those that are selected and designed to measure those purposes specified by the particular purposes underlying action. In the first case the indicator that would be most informative would be one that measured the quality and accessibility of health care facilities. Other definitions of the problem of health would certainly require different indicators. Since development programs are often multidimensional, several indicators may be required to measure the objectives of the overall program.

E. Toward a Process of Choice

Since there are potentially many normative models that may influence decisions about development programs, the first step in the selection and design of policy relevant indicators is the clarification of those models that are of relevance in given operational contexts. For these models determine to a great extent how development problems are defined and the themes of public policy that are conditioned by these definitions. If it is assumed that the intent and purpose of development is to increase the capability of a people to create the type of society they desire, then it must also be assumed that the identification of preferred states in their society is something that must be done by each country for that country. It has been argued in this discussion that the planning process provides a context in which social values, that are relevant to a country, can be brought into play in determining social objectives. But, it is also imperative that the choice of objectives also include the process of choosing indicators of those objectives; for the choice and design of a development indicator is basically an effort to quantify some conception of that country's future.

It is the basic premise of this report that far too little attention has been given to this selection process, with the result that current efforts to design indicators fall short of measuring the perceptions of problems that planners and policy makers have in mind. In view of the normative nature of development, the choice of indicators in the planning of development strategies takes on great importance. Once an indicator is chosen, and institutionalized in the processes of decision making, it does have a unique tendency to take over the problem defining function. Therefore, the critical focus of a methodology for indicator development should be concerned with the selection process more than with technical problems of measurement initially.

International organizations can assist with this process in a number of ways. Perhaps, the most important contribution would be to establish, in cooperation with governments of host countries, institutional contexts that would bring together researchers and decision makers in such a way that they can be sensitized to both the conceptual and technical problems of developing measureable concepts that are policy relevant. This should be done at various levels of planning and decision making. Since development planning is concerned with local and regional programs, as well as national planning, a meaningful program for selecting indicators should address the information needs and development objectives at all levels. Several approaches can be suggested.

1. <u>International Dialogue</u>

It is now generally recognized that countries can profit a great deal from the development experiences of other countries facing similar problems. This is equally true in the area of social measurement. All countries involved in development planning are continually involved in

efforts to measure programs in various areas of planning concern. Frequently, these efforts involve considerable expenditure of time and money and often produce unique solutions to measurement problems of specific countries that may be of value elsewhere as well.

Recognizing this, OECD initiated their social indicator program by establishing a context of discussion and debate among member nations to help identify common information needs and approaches to measurement. The establishment of a process similar to this for LDCs should be given serious consideration by the international development community. Such a forum could be organized on a world wide basis or on a regional basis. However, since the commonality of problems may be higher among countries within a region, a regional approach may be most effective.

The purpose of establishing international dialogue should not be to seek to establish concensus on a common set of social indicators for all countries. Rather, the initial thrust of the dialogue should be to allow countries to share their unique perceptions of common problems, and current practices of measuring social progress relative to these problems. To be effective these discussions should involve persons in planning and decision making roles, national statisticians and competent scholars from LDCs, as well as the international development community. The determination of the content and direction the discussions take, however, should largely be determined by the interests and concerns of LDCs.

This type of interchange should not be limited to problems of measurement of progress at the national level. Experts concerned with rural, community and regional development problems should also be involved in such discussions and the problems of measuring social progress at sub-national levels of planning should play an important role in the overall

discussions. Initially, such discussions could be carried out on a planning sector basis, but ultimately should seek to address the overall problem of improving social measurement and statistical reform for the country as a whole.

2. Observatories

One of the more creative efforts to improve social information for planning is the program for measuring real progress at the local level developed by the United Nations Research Institute for Social Development. This program is essentially concerned with establishing, in cooperation with host countries, observatories to measure and monitor social progress at the local level. The unique elements in this approach is the heavy emphasis on cooperation between the international community and national scholars and officials. For the most part, the selection and design of indicators is to be determined by national scholars, and addressed to the unique needs of that country, although some serious effort is made to provide selected indicators for international comparison.

In a very basic sense, this program addresses a serious need in LDCs and could be expanded to include regional concern as well. But most importantly, it provides a means for generating the type of data required for measuring distribution of the benefits of development and for identification of target groups that are largely impossible with nationally aggregated data. Serious consideration should be given to the support and expansion of this program.

3. Integration of Design and Use of Indicators

The primary thesis of this report is that policy relevant indicators will not be forthcoming unless the selection and design of indicators is made an integral part of the processes of development planning and

policy decision making. This especially points to the importance of drawing competent scholars in the various scientific disciplines concerned more closely into the planning process. The most serious need in current social indicator research is for greater collaboration and interchange between decision makers and researchers concerned with social measurement. This is necessary, on the one hand, to sensitize the researchers to the perceptions of the problems that policy makers have in mind, and to the various dimensions of the problem that should be included in the design of a measure. On the other hand, it is important in helping the decision maker understand the nature and limitations of the measure he uses as an indicator. It is only through close collaboration of this type that an iterative process can be established that leads to improve measures of social progress.

The agency should consider the feasibility of drawing together an interdisciplinary team of scholars, who have experience in measurement in the broad areas of concern of the agency, to work closely with planners in selecting and designing measures of social problems and to coordinate further measurement efforts within the academic and research community. This team of scholars could provide the basic means for initiating the type of iterative process now recognized as central to the evolution of adequate social indicators. This team could also serve as advisors to planners concerning the technical problems of measurement and analysis.

This same type of integration is also needed in most of the LDCs with which the agency is currently involved. The agency should emphasize the importance of establishing interdisciplinary teams of scholars (including both national and international scholars) to work closely with planners and decision makers in each country, and to provide through

their technical assistance programs, greater effort to coordinate the work of international researchers with the measurement problems of respective countries.

CHAPTER 3

Indicators of Social Development

A. The Nature of Social Development

The term social development has been invested with a variety of meanings. As is true of the concept "social indicator," so much of the ambiguity and confusion surrounding the term arises from the use of the term "social" to differentiate a sub-process of development that is unique and distinguishable from other dimensions of the overall development process. Because "social", in the broadest sense of the term, refers to all of the human and social systems interrelationships that constitute society, the term "social development" has either been used synonymously with the overall concept of development, or has been arbitrarily defined in relation to the unique perceptions of development that serve concepts important to individual social scientists or planners. Ideally, social development should be conceived as the collective effort, of the people of a nation, to create the type of society they prefer. In turn, the process of formulating social policy objectives should, ideally, be viewed as a quest for national consensus concerning preferences for a future society toward which such policy is to be directed. In this broad sense, the term social pertains to society, and all aspects of development are part of the social process.

In the operational contexts of planning, however, it is often desirable to conceive of the "social aspects" of development in somewhat narrower terms. When used in connection with economic planning and public policy considerations, "social" usually refers to either the "human welfare" aspects of development or to the "structure of society."

Social development, thereby, is concerned, in the first sense, with improving levels of living and more equitable distribution of material and cultural goods that are expected to accompany or follow increases in production. In the second sense, social development refers to a process of structural change resulting in greater equalization of opportunity to participate in the processes and benefits of developmental change, the extension of development to backward areas and the integration of a nations population within a fairly unified system of social, economic and political institutions (often defined negatively as the reduction or elimination of the dualistic or pluralistic institutional structures of LDCs). In either case, social programs, or areas of public social action, should be treated as instruments to achieve broader social objectives, rather than as ends in themselves. In other words, the listing of quantitative targets in the different social sectors does not constitute an adequate statement of social objectives. Social objectives should be couched in terms of broader and more integrative social concerns such as improved social well-being, more equitable distribution, wider opportunities for social participation and social mobility (United Nations, 1971a; 1971b). These social objectives are fundamentally problems of the malintegration of national society (Myrdal, 1956, 1972; Gordon, 1969; Mayhew, 1971; Shills, 1975).

B. Social Welfare and Social Optimization

In more advanced countries, the "social indicator movement" has centered heavily on the welfare aspects of social development. A very large proportion of the work now under way, to design social indicator systems, is focused either on the indexing of various dimensions of human well-being or the construction of aggregative indexes of quality of life,

or human welfare. Indexes are especially sought that are adaptable to problems of social optimization, intensifying the long term effort to conceptualize and construct a "social welfare function."

The tendency to concentrate social indicator work on indexing dimensions of social welfare, in more affluent nations, stems largely from the fact that these countries have already achieved the development of a fairly well integrated system of social institutions that operate with acceptable efficiency. Under such circumstances, the principal aim of planning is to achieve--within the prevailing economic and social framework, and the limits prescribed by the need to maintain social and economic stability--a level of effective demand which allows the fullest utilization to be made of capital stocks, labor force and other resources, in the attainment of optimal social and economic well-being for the nation. Since indicators are not currently available to reflect many of the social components necessary for social optimization planning, the mandate for social indicator research has often been conceived as an effort to evolve those welfare indicators.

The practicability and usefulness of constructing a social welfare function, or a set of aggregative indexes that are adaptable to problems of social optimization, is worthy of serious consideration. There are, however, a number of serious technical and conceptual problems that must be solved before such an index can be constructed, not the least of which is the weighting or social value problem itself. There is no general concensus as to the nature of social welfare, nor concerning the basic components that should be included in such an index. Even when some consensus is attained, concerning dimensions of welfare, the value problem of weighting these dimensions has, thus far, been

insurmountable. In addition, many of the components of welfare, as currently conceived, are of such a nature that they cannot be statistically added together and still make theoretical or logical sense. There is also the problem of finding agreement or consensus on a reasonable method of transforming unlike elements into some common scale so that they may be added together without loss of conceptual, theoretical or normative meaning. No generally accepted solution to these problems has been found to date. Therefore, a more practical alternative for LDCs, in the short-run, is to focus their social indicator research on priority development problems and the design of indicators to measure various aspects of each problem.

C. Social Integration and Development

Social optimization is a process concerned primarily with optimizing the performance of social systems in terms of a fairly comprehensive set of social values. Therefore, inherent in the concept is the assumption that a fairly well integrated system of social institutions exist and are responsive to instruments of social policy. In many LDCs, such conditions often do not exist at acceptable levels for successful optimization planning on a society wide basis. The populations of many LDCs are still largely atomized by tribalism, or divided into relatively autonomous local communities, sub-societies or feudal estates that have relatively low commitment (if any) to the Nation State. In turn, recent economic growth, focusing heavily on the high growth potential of the modern sector, has further atomized these societies through the creation of economic cleavages now known as the "Dual Economy."

The problem of national social integration is an especially critical problem to those LDCs that became nations through political processes that arbitrarily established their national sovereignty over a population divided into solidary ethnic sub-divisions, whose horizons and loyalties do not extend to the total population. These subdivisions of the national population, not only have different standards of living, but different ways of living and attitudes to life. In the more isolated rural sectors, these groups often do not mix in work and still less do they share in other social activities. Most fundamentally, their loyalties do not converge.

This fragmentation of national populations into dual populations, dual cultures and often into dual economies, inevitably brings with it mounting tensions between segregated groups and, at times, overt discrimination. These cleavages, in turn, hamper the movement of labor, capital, goods and services, and seriously undermine the capability of these countries to mobilize human energies to the level necessary for self-sustaining economic progress. For this reason, it is now generally recognized that the concept of dualism in LDCs provides a more adequate approach to the understanding of the social problems and social aspects of development than aggregative growth models (United Nations, 1971). Under such circumstances, development planning must take account of the dualistic structures in terms of the differences, between modern and traditional sectors, differences within those sectors and differences between those participating in development and those left behind. Such differences should be reflected in the selection and design of indicators for use in LDCs.

The social ideal underlying this interest and concern over the dualistic structures of LDCs is that of national social integration. Social integration simply refers to the social process of bringing a segmented national population together under one system, and as a development process, is concerned with the creation of, and the inclusion of a nation's population within, a culturally unified system of institutions. To achieve integration, the dual economies and the cultural isolation of ethnic groups must be broken. Integration is, therefore, a process which seeks to move members of the population out of their isolated daily routine, completely engulfed by a local traditional group, and into an organizational life that transcends traditional group membership. Integration especially requires the creation of common loyalties in the population by shifting individual loyalties from local solidary groups to that of the nation. This means, in a very real sense, the outward extension or ecological expansion of the institutional structures and organizational life (including social, economic and political infrastructures) of the nation's center, to serve an ever increasing proportion of the nation's population. Therefore, while the focus of planning in more advanced countries is often directly concerned with optimizing social conditions, through upgrading the efficiency and productivity of existing institutional structures, the focus of so much of social development planning in LDCs is concerned with the creation of a unified system of national institutions, and with the absorption of the nation's population more fully into those emerging organizational and institutional processes. In other words, social development implies a process of the growth of society within a previously segmented and heterogeneous national population.

1. Modernization

The institutions and organizational life that form the nation's center, in many LDCs, were formed by the small group of educated elites who led the revolutionary overthrow of colonial governments and became heirs to governmental authority when the colonial governments departed. Because of both their contacts with colonial domination, and their marginal position with respect to their indigenous heritage, these elites turned their attention to nation-building by political techniques. This has largely resulted in attempts to build an economy, extend popular loyalties, and educate the populace through the extension of the apparatus of the state and party. Hence, all institutional spheres of the nation's center tend to merge in the political sphere in many LDCs. The social service and economic sectoral programs are the embodiment of those emerging institutions, and all merge, and derive their form through the planning, budgeting and decision making processes of central government.

This process of instituionalization leads to a downward penetration of emerging cultural values into the norms and institutions of traditional enclaves. But the relevant values are elite values; they are the values of the dominant, active groups that are in a position to guide social change so as to maintain the supremacy of their own values, and their own established position within the institutional order. This downward penetration of elite values is also an outward extension of these new cultural values of the nation's center, designed to include more of the population within that emerging and centrally unified system of institutions.

Because the territorial sovereignty inherited by these new political elites often embraced a population divided into solidary ethnic subdivisions, sufficient internal support for their nation-building efforts were often lacking. For this reason, the political elites of these countries have often sought to create a national culture by drawing both on the traditional values of indigenous cultures, and on the values, technologies and institutional structures of other countries, conceived as more advanced or modernized. In part, efforts to create modernized institutions in their countries have been motivated by a desire to equalize the level of development of their countries with those of more advanced countries. But the modernization of institutions has also served as a basic strategy for creating a unified system of social institutions, and an organizational life for their countries, that transcend the boundaries of ethnic enclaves. It is through the outward extension of these centralized institutions (sectors) that the political elite seek to unify or integrate their nation.

Even through the process of modernization and the creation of the culture of the nation's center, in most LDCs, has involved a process of emulation, of the transplantation of patterns and products from the achievements of other countries, it has not been a case of slavish copying, of blind acceptance of other nation's achievements. It has been an effort to achieve the desired results in various institutional spheres in a way suited to the needs and conditions of each country. Therefore, the emerging cultures of LDCs are usually a blending of indigenous cultural values, modernized technologies or ideologies and

creation of rather unique cultures in many LDCs, that diverge significantly from one another, and from the culture of more advanced societies from which they have borrowed freely. Hence, the nature of development problems, the social objectives of social development and the indicators needed can also be expected to vary considerably from one country to another.

2. Ecological Expansion

Because of the heavy emphasis on economic development in the nation-building efforts of LDCs, past development strategies in many LDCs, have sought rapid economic growth without seriously considering the manner in which the benefits of growth are to be distributed. The assumption has been that increased growth would lead to a reduction in poverty as the benefits of an expanding economy trickle-down among the people. Accordingly, the emphasis, in nearly all LDCs, has been on increasing the rate of economic growth, with a corresponding concentration of effort on the "high-growth" potential of the modern sector of the economy, with the virtual exclusion of the traditional, agrarian sectors of the economy where the small landholders, tenants and landless make up the bulk of the rural poor. In turn, the low productivity of the rural poor has left them with little resources to create an effective demand for other social goods, such as education, health services and community amenities that have accompanied economic growth in the modern sector.

For this reason, the mass of the population in most LDCs have, in a very real sense, lived outside the effective scope of the emerging national society and have had little influence on the nature and content of its institutional development. Even though many of the more

peripheral populations have not felt their exclusion from the emerging nation, their low position in the hierarchy of authority has been injurious to them, and the growing alienation of those peripheral populations toward the center has been intensified by their isolation and remoteness from the centers of influence. In many instances, that alienation has not been active, because loyalties and attachments to local solidary groups have remained high. In any case, the masses of populations in rural areas have been far from full-fledged members of the national society and, very often, have not really been citizens.

To be a peripheral member, in any society, is to experience from day to day two difficult facts of life. These are the facts of deprivation and exclusion. To a great extent, such persons are deprived because they have been excluded from the benefits and processes of developmental change, and they are excluded because they are deprived of the resources necessary to function in the mainstream of national development progress. The ideal of an integrated society, in contrast, is one in which all members of a national population have opportunity to participate in the benefits of developmental change without reference to their membership in other social and geographical groupings.

The first step, therefore, in mobilizing a culturally diverse population is to make available to them the resources, services and facilities necessary for successful participation in the institutions of the nation's center. In societies characterized by dual institutional structures and ethnic cleavages, this requires major social transformations in the direction of a more equalitarian distribution of the benefits of national development progress, and widespread access of the population to production resources, as well as to "social goods," such as education and health

services, nutrition, adequate housing, income, employment and participation in political decisions that directly or indirectly influence their lives.

Social development, therefore, is conceived here as an integrative process involving the creation of a unified system of productive and efficient institutions and the ecological expansion of those institutions to absorb larger and larger proportions of the nations population, extending over wider and wider territorial areas. This includes the ecological expansion of the social, economic and political infrastructures and services of the modern sector to embrace the total nation. But it also involves the mobilization of the nation's population to participate in and to develop loyalties to these new institutional structures. Rarely, if ever, is this process of expansion a one way process. The emerging institutions must be responsive to the needs and interests of the larger population of the nation before such loyalties can be attained. This means that those institutional structures must be changed and adapted to local needs and interest through the process of expansion. Therefore, national integration is a two way process of institutional and structural change that transforms the institutional and organizational life of the center, as well as those of subgroups absorbed in the expansion process.

3. Systemic Linkages

The achievement of many national development objectives requires the support and participation of local people within existing institutional and community settings. Under such circumstances, the focus of development concern is to upgrade the capability of local institutions to meet new demands and performance requirements of national development policies, by effecting change in the behavior of target groups within these traditional

institutional patterns. The development of systemic linkage provides a means to penetrate the institutional structures of target groups with the values, technologies and institutional patterns of national institutions.

The process of the ecological expansion of the organizational life of the nation state to absorb larger proportions of the nation's population involves various strategies designed to establish formal and informal linkages between the organizational life of target populations and that of the nation state. These linkages provide a means for transacting resources and channeling information between central institutions and organizations and those of target groups. The primary purpose of such linkages is to provide a mechanism to move members of target groups out of their isolated daily routine, completely encapsulated by a local traditional group, and into that larger organizational life of the nation state that transcends traditional group memberships. These linkages can be conceived as systemic linkages because they are established to link two social systems so that, in so far as they are effectively linked, they function as one system.

In his studies of community development in the United States, Eberts (1969, 1971) has noted the importance of systemic linkages: "the fundamental stimulus to social change in a community comes through the appearance and disappearance of new formal organizational linkages between it and some other community or communities." The importance of these linkages is in providing channels for the flow of information between organized communities. Sismondo (1973) has further noted that "linkages...are viewed as the potential methods that individuals and organizations of one community have access to for transacting resources with individuals and organizations in another community; they are seen as the formal and

informal channels of access that a community has to resources outside its boundaries; or, the structural means needed for the conduct of orderly and profitable transactions at a distance" (resources include four kinds of flows or transactions: monetary, informational, technological, and political). Eberts (1972) has also noted that these linkages have a profound effect on each community, in the sense that it directly and indirectly effects the communication patterns in the community and ultimately the local social structure. He, therefore, hypothesizes that "the change in linkages will produce changes in the communication patterns of a given local community so that the communication patterns will become more fluid, that is more open, as they are between units which are more free and equal with each other."

The importance of outside linkages with other organized communities, as a means to change local community structures is a well established principle in development theory. This process of developing linkages between communities, individuals and institutions is fundamental, a process of creating a larger social system in which previously autonomous units become linked into a larger network of transactions. Mayhew (1972:220), however, has noted that the effectiveness with which such linkages can be established with local communities, as well as the effectiveness of linkages in penetrating the solidary life of solidary communities, is dependent on the richness of the associational life within the subgroup. In other words, the more local communities and ethnic subgroups carry on group activities at the intermediate or community level, the greater are the means of establishing interorganization linkages that can penetrate the institutional norms of that solidary group. The establishment of effective linkages is, thereby, greatly undermined by widespread

cleavages that fragment the organizational life of local areas. Since the fragmentation of local areas is guite common in many LDCs, a number of development scholars have emphasized the importance of enriching the organizational life of local areas as a first step in creating effective linkages between local and national institutions and organizations (Inayatullah, 1974; H.S. Wanasinghe, 1974; Owens and Shaw, 1972; Lele, 1975; Coombs and Ahmed, 1974).

A number of strategies are used to establish linkages with target populations. Three are especially important to the process of ecological expansion. While they are treated here as separate analytical types, the concrete processes of integration usually involve a mixture of these processes (Mayhew, 1971:218). These processes are:

1) Institutional Penetration, which occurs when the national system obtains the required support of target groups, by penetrating the organizational and institutional life of the target area.
2) Parallel organizational development, which occurs when the national system gains support by meeting functional problems, that are not effectively met by the institutions of target groups, by developing in target areas parallel organizations and institutions for that purpose.
3) Cross-cutting organizational development, which occurs when the national system obtains the required support by creating organizations that include members from the various fragmented sectors of target areas.

4. The Nature and Dimensions of Integration

The processes of ecological expansion through the establishment of systemic linkages between the organizational life of local and national systems is largely an effort to assimilate social and cultural subgroups into the emerging institutional life of the national society. The process

of incorporating peripheral members into a common national life is limited, however, by: 1) the willingness on the part of the receiving group to participate; and 2) by the desire on the part of the national society to foster opportunities to participate. This suggests two essential processes in achieving the integration of target populations. The first is the achievement of cultural and behavioral assimilation of target populations. This involves the emergence of common sentiments, values, norms of behavior and institutional patterns.that provide the basic framework of a unified national system of cultural institutions. The second is the problem of structural assimilation. This involves a process of extending opportunities to participate, including the basic social, economic and political resources necessary to participate effectively in the mainstream of national development progress.

The process of institutional penetration is largely concerned with cultural and behavioral integration, and seeks to foster change in local institutions toward those of the emerging national society. As such, institutional penetration is often a multidimensional process of change design to alter the behavior and functions of local institutions in a number of ways, including:

1) Changing the definitions of the needs and problems to be served by local institutions, i.e., changing the definitions and goals of farming from subsistence to commercial farming; changing the definitions and goals of family from unlimited reproduction to controlled and planned reproduction; changing the definitions and goals of education from strictly family socialization to formal education and training in technical skills, etc. These changing definitions of the problems and purposes local institutions are to serve largely represent the outward penetration of the values of the ruling elite into the institutional and organizational life of local communities.

2) Changing the institutional processes of local areas to fulfill the new definitions needs and problems they are to serve. This may require the introduction of:

a) New Artifacts: Artifacts include all man-made tools and alterations in the natural environment designed to serve human purposes. In agricultural sector planning, this may involve a wide range of factors covering everything from "production goods" such as seeds, fertilizers, mechanical equipment, as well as the monetization of farming transactions and the building of physical infrastructure. In population sectoral programs, limited primarily to population control, this may be limited to relatively simple artifacts such as contraceptives.

b) New Skills and Techniques: Rarely can new artifacts be introduced without also providing understanding of how they should be used, and developing the skills required in their use. Institutional penetration, therefore, usually requires extensive training programs to develop the human capabilities to effectively cope with changing institutional requirements imposed by developmental change.

c) New Attitudes and Values: Not only does changing local institutions require a redefinition of the purposes and problems to be served by institutions, but also the institutionalization of appropriate attitudes and values that legitimze and support those new purposes and processes. This often requires the breaking of attachments to traditional institutional patterns and adoption of new normative patterns.

d) New Patterns of Social Organization: The reorganization of human relationships within local institutional structures is also often required. In the case of family planning this may require change in sex-linked roles which allow women to engage in meaningful roles outside of the home. It may also require change in economic relationships which allow parents to attain economic security without dependence on economic assistance from children. In agricultural development this may include a very wide range of structural changes including redistribution of land, the introduction of rural cooperatives, group farming, etc., the equalization of access to production goods and services by altering traditional social, economic, and political strucutres. The introduction of new artifacts, techniques and skills, attitudes and values nearly always requires a reorganization of the technological advancement achieved, in order to create more productive and efficient institutional structures.

Parallel and cross-cutting organization development, on the other hand, are more directly concerned with structural integration of target areas into national organizational life through the direct extension of institutional and organizational patterns of the national society into those target areas. Parallel organizational development involves the building of new organizational and institutional structures in target areas where existing institutions do not effectively meet human needs or demands. Parallel organizational development includes the extension of modernized social services and facilities into target areas, such as health and educational facilities and services. It also involves the extension of modernized production goods and services, such as banking and credit, modernized market and supply systems, highway and communication networks, etc.

Generally, parallel organizational development establishes formal linkages between the modernized center and local communities, and provides a basic supportive framework for national efforts to penetrate local institutional structures. In this sense, parallel organizational development also contributes to the processes of cultural and behavioral integration by extending broader ranges of opportunity to participate in national development progress.

While efforts to penetrate traditional institutional structures often requires the restructuring of local social, economic and political power structures, parallel organizational development requires a restructuring of national social structures. This means breaking the dualistic political and economic structures, and equalizing opportunity to participate in national development and decision making more uniformily throughout the nation.

Cross-cutting organizational development is largely concerned with bridging social cleavages among village, tribal and ethnic subgroups by providing broader organizational structures that cross-cut subgroup boundaries. One of the most common strategies for integrating population subdivisions through cross-cutting organizational development is through regional development and growth center strategies. By establishing growth centers capable of providing a broad range of highly technical services, not available in local areas, population subgroups are forced to share common organizational and institutional patterns that require broader cultural and social loyalties. The elaboration of specialized political, economic and social institutions that service broad territorial areas draws segmented populations into these new cross-cutting groups, providing a basis for a greater sense of participation in national life than is possible when social and economic transactions are isolated within local areas. The effectiveness of cross-cutting organizations, in achieving cultural unification, is highest when the institutions of local areas are incomplete, forcing some dependence on broader organizational structures.

Integration Variables

Interorganizational Linkage Processes	Types of Integration	Indicators
1. Institutional Penetration	Cultural, Institutional, and Behavioral	Change of cultural, institutional and behavioral patterns to those of the emerging modernized center.
2. Parallel Organizational Development	Structural Integration	1. Equalization of opportunity to participate in national society. 2. Equitable distribution of the cost and benefits of national development. 3. Mobilization of widespread popular participation and support.
3. Cross-Cutting Organizational Development	Social and Politial Integration a) Identificational assimulation b) Attitude and behavioral receptional assimulation c) Civic assimulation	1. Development of a sense of peoplehood based exclusively on participation in national society (Nationalism). 2. Equal rights to participate without reference to membership in other ethnic, racial, and socioeconomic subdivisions. (Absence of prejudice and discrimination.) 3. Widespread participation in political decision making and development planning. 4. High level of social order accompanied by a strong sense of political trust and efficacy.

CHAPTER 4

Measurement of Social Progress

A. Resources for Development

From the perspective presented in the previous chapter, social development is primarily conceived as the growth of society within a national population. This involves the creation of a unified system of modernized institutions and the ecological expansion of these institutions to absorb increasingly larger proportions of the national population. As such, ecological expansion has both a spatial and social dimension. The social dimension involves the downward penetration of the emerging national institutions to include socio-economic stratas that have structurally been excluded from full participation in the processes and benefits of national development (those who lack the social, economic and political resources necessary for full participation). The spatial dimension involves the outward expansion of the institutional structures of modernized centers to absorb spatially isolated populations.

The ideal toward which social development is directed is the creation of a system of national institutions and infrastructure where all members of the national society have equal opportunity to participate without reference to their membership in local, ethnic or socio-economic subgroups. This ideal is, of course, one that will never be perfectly attained, nor is it necessarily desireable that perfect integration be achieved. Rather it is an ideal that provides a means of addressing imbalances in a society, and contributes to the overall strengthening of national society to the benefit of all members of the population. In

turn, the equalization of opportunity and national integration are concepts that cannot be specified in great detail, and any effort to do so would lead to endless debate, for each person has their own conceptions of the future, and each will differ from the other.

What can be measured, however, is the success with which the basic social, economic and political resources are expanded within the national population. To measure the ecological expansion of institutional resources, nationally aggregated indicators such as per capita income and GNP are not adequate. What is required is measures of the extent to which the benefits of development programs actually reach people where they live, and the extent to which those benefits result in strengthening the capacity of local institutions to control and transform their resources into greater resources for further development. This requires the measurement and assessment of the extent and quality of change in local institutions and among population subgroups in local areas. In social development the desired direction of change is the reduction of inequalities in the "resources for development" held by populations differentially located in the social structures and spatial organization of the country. To assess their differentials, indicators must be disaggregated to reflect the resources available to relevant population subgroups, and standardized so that they are amenable to intergroup comparisons.

The starting point, therefore, in designing policy relevant social development indicators is to list those resources available or held by local groups, and to monitor the value added to those resources through development programs. In his study of the relative deprivation of disadvantaged groups in the United States, Coleman (1971) has found it use-

ful to analyze their relative position in terms of resource assets, deficits and liabilities. In social development, the term "resource" is used, in the very broadest sense, to refer to all factors that are either ends in themselves or means to an end. Social resources, therefore, include all artifacts, skills and techniques, goods and services, attitudes and values, service facilities, forms of institutional and social orgranization, etc. that serve as means or instruments for achieving social objectives. Modernized health services and medical supplies are, for instance, resources for maintaining or improving health to those who have access to them. Training centers for extending knowledge of improved farm practices is another type of social resources, etc.

Resources will be conceived as assets to the extent that they serve as means or instruments in the achievement of social objectives or in the production of other resources that are necessary for self-sustaining development progress, i.e. the production of non-farm skills in rural areas may be conceived as the creation of new resources necessary for expanding industry into rural areas. Liabilities are conceived as "negative assets" which impede the development of resources, i.e. environmental pollution is often a liability in efforts to improve levels of health within a population; lack of political trust and efficacy can be a liability in efforts to mobilize popular participation in development programs; a low value on formal education within a population can be a liability in efforts to mobilize local energies through universal education, etc. Resource deficits refer primarily to the relative position of target groups (or disadvantaged groups) to that of the more affluent, modernized groups in the country. Resource deficits should reflect the

degree of equality or deprivation of resource assets within a national population.

In structural integration, either through parallel or cross-cutting organizational development, the primary purpose is to provide a supply of opportunity to participate in modernity through the extension of organizational, institutional and physical resources, so as to reduce existing resource deficits. Several different standards or norms can be used to measure resource deficits. It is recommended, however, that levels of resource deprivation should be measured against local, regional and national standards. It is also recommended that the standards be designed to measure local resources against the resources held or accessable to the most modernized or affluent segments of the population at the local, regional and national levels. At the national or regional levels, appropriate standards against which resource deficits should be measured are those of the more affluent populations living in regional or national urban growth centers. In rural localities, comparitive standards should be based on the more affluent populations living in that locality. The type of resource deficits that are of priority concern in social development planning are those that are instrumental (means) in upgrading the capability of local institutions to meet changing needs and demands of both the local and national systems.

B. A Model for Institutional Change

The integrative processes of institutional penetration, parallel organizational development and cross-cutting organizational development can be conceived jointly as an overall strategy of development aimed at upgrading the capacity of local institutions to control and transform the

resources of their environments, by extending into local areas greater social, economic and political resources for their development. Institutional penetration is concerned largely with altering the behavior of local institutions, so as to improve their performance and productivity. Parallel and cross-cutting organizational development provide systemic linkages between local and national institutions through which resources and services can flow to local people in local institutional settings, i.e. family, farm firm, etc.

1. Integration and Local Institutional Change

Institutional penetration is an integrative process primarily concerned with upgrading the capacity of local institutions to meet changing needs and demands of a social, economic or political nature. Institutions are, therefore, conceived as organized spheres of human action designed to achieve human purposes. In this sense, institutional components and processes (such as social organization, attitudes and values, skills and techniques and artifacts, materials, energy, facilities and services) are basic resources used in the attainment of institutional purposes. To the extent that these elements contribute to the attainment of institutional purposes, they may be classified as assets. To the extent that they impede the attainment of institutional purposes, they may be considered as liabilities.

Since institutions are formed through long term adaptations to environmental conditions, they normally represent fairly satisfactory solutions to the problems they were created to fill. Therefore, institutions are fairly permanent patterns of organization and behavior and usually change only to meet new contingencies and problems created in

their environment. They can be expected to change when the basic problems and needs that define institutional objectives and purposes change. They also may be expected to change when new technologies, materials and artifacts suggest better ways of meeting old needs. They may also change when existing resources are depleted to the extent that old needs must be met in new ways.

All three of these conditions play a role in efforts to upgrade the capacity of local institutions. In the first sense, ecological expansion involves efforts to mobilize local resources to meet needs of the larger society. This involves efforts to redefine the objectives and purposes, that local institutions are to serve, in terms of the needs and problems of the larger society. For instance, efforts to reduce population growth through fertility control constitutes an effort to redefine the purposes and objectives of local family institutions in terms of the needs of the larger society and the international economic order. In traditional family settings, however, large families may fulfill important functional needs, i.e. farm labor, security in old age, etc. In such circumstances, there can be a serious mismatching of purposes and needs of individual families and the needs of the larger system. To achieve matching of purposes, the larger system may be required to create new ways of meeting the needs and requirements of individual families in order to gain local acceptance of the performance requirements defined by the needs of the larger society, i.e. the provision of new sources of farm labor or production energy, increase the life expectancy of children at birth, provision of old age benefits and retirement income, etc.

It is in their efforts to match outputs of local institutions to the needs of the emerging national society that national institutions must adopt their programs and structures to meet local needs and desires. In other words, the success with which institutional changes in local areas can be achieved, to meet the formal achievement or outputs required of the national society, is directly related to the success with which local needs continue to be satisfied. This often requires the introduction of improved methods of meeting old needs, as well as the provision of a flow of benefits into local areas to fulfill new or emerging needs created through the process of change.

To determine factors that are resource assets and liabilities, under such circumstance, is by no means an easy task. In the final analysis the assumed benefits of development programs are assets if they work, and may actually prove to be liabilities if they do not. Since there is no well established model of development, nor even of sectoral development, that can assure success in all circumstances, development programs must be conceived as experimental in nature. Because of the experimental nature of instigated change, continued feedback is required concerning the effectiveness of development programs in inducing change, and the extent to which these changes actually result in improved capability of local institutions to meet both the formal achievement requirements (FA) of the national system and local need satisfaction (LNS).

2. Maintenance and Information Inputs

Institutional systems require two types of inputs in order to function effectively (Berrien, 1968). They require energy inputs for their maintenance, as well as what we shall call information or signal energies.

Maintenance energy inputs are those inputs which energize the system and make it ready to function, i.e. nutrients are required to maintain the physical organism and to energize it for action; an adequate flow of food, income, shelter and services are required to maintain a family, etc. Information or signal energy inputs are those inputs which provide the system with information to be processed. While maintenance inputs energize a system for action information inputs energize a system to action.

Information inputs are signals that provide feedback from the systems environment that allow it to meet environmental demands and contingencies, and to adapt its behavior to meet new requirements. Therefore, information flows can be designed to increase the efficiency of a system within a particular performance mode. In this sense, neither the objectives of the system, nor the structure and process of the system, are objects of change. Rather, signal inputs are more concerned with regulating the system so as to achieve optimal outputs in the most efficient way possible. In development, however, information inputs are usually designed tc change systems objectives, and to restructure or transform the system itself in order to achieve new objectives. In a development mode, therefore, the trust of concern of the national system is to improve new institutional objectives and to transform local institutions so that they are able to produce more adequately the outputs required to meet the needs or production standards of the national system.

Basically, a development mode is concerned with generating information inputs that alter the behavior of local institutions to bring them more in line with the output requirements of national development policies.

In general, signal inputs that create change come from outside the system. This is especially true of isolated rural enclaves that have achieved a fairly satisfactory adaptation to their immediate environment. Under isolated conditions, environmental conditions change so slowly that their is little local impetus to change the behavior of their institutional systems. Efforts on the part of the national system to integrate local enclaves, however, expose local people increasingly to a much broader world of activity. New linkages or channels of information open up new opportunities, create new local demands for change, impose new demands from outside and greatly alter the awareness and understanding of local people. The systemic linkages established in ecological expansion represent planned efforts to establish and control the development of new information channels in order to direct social change at local levels, and to mobilize local energies so as to further national development.

C. Development Policy And Formal Achievement

Information inputs from local areas, largely function in a performance mode to regulate the behavior of local institutions within existing institutional structures, and directed toward traditional or emerging local definitions of institutional objectives. Through ecological expansion, effort is made to shift local institutions toward a developmental mode of behavior, by penetrating local institutions with information inputs that redefine institutional objectives, suggest better ways of meeting needs and providing new incentive and regulatory mechanisms to induce change in the behavior of local institutions. Information

inputs from the national system, therefore, may be conceived as being of two types: 1) Information inputs which seek to redefine institutional objectives (outputs) in terms of the needs and demands of the larger national system; 2) Information inputs which seek to change institutional structures so as to increase their capacity to achieve new objectives or standards of output. (Figure 1).

Development policies and programs seek to establish new local institutional objectives that are consistent with the needs and requirements of the national system. Such policies define development standards for institutional performance, accompanied by strategies for institutional change to assist local institutions to fulfill the output requirements of the national system. In this sense, policies and programs include orders, directives and incentives for change that are imposed on local institutions through political mechanisms. Political mechanisms may include forced or induced strategies to gain local cooperation and participation (i.e., legal regulations, graduation quotas, penalties or incentives), and rewards of a social, economic or political nature. Since national policies objectives redefine local institutional objectives, the formal achievement (FA) of local institutions should be measured against those policy standards. Such measures will be referred to as indicators of formal achievement.

Indicators of formal achievement, as conceived here, are basically policy goals output indicators that are disaggregateable to local levels of institutional activity. For this reason, formal achievement indicators must be designed to measure the extent and quality of change in local institutional output against standards and demands of national development policy goals. Since efforts to redefine local institutional objectives

are aimed at increasing the productivity of local institutions in terms of the needs and requirements of national development, the demand made on local institutions will, no doubt, vary considerably from one country to another depending on their level of development and their long-run development objectives. For this reason, indicators of formal achievement must be developed by each country depending upon its own social, economic and political goals. For purposes of inter-country comparison, however, it would be useful to have a few common indicators, reflecting universal policy goals based on common classifications, standard definitions and uniform tabulation procedures. In general, however, indicators that will have the greatest relevance in the operational contexts of social development planning will be those that are selected and designed by each country consistent with its own national and sectoral planning goals. The conceptual and mechanical exercises for the development of indicators of formal achievement is greatly facilitated once the selection of goals and valuation premises are known.

In light of the heavy emphasis in LDCs on national economic expansion, demands made on local institutions will, no doubt, continue to be oriented toward increasing local economic productivity, and toward the creation of local institutional structures that are supportive, or at least permissive of national economic growth. This means, among other things, a continued emphasis on inducing institutional structures that are receptive to the adoption of more modernized production processes; capable of creating human resources that can function effectively under more modernized conditions; and receptive to national and international efforts to control population growth

rates to a level below the carrying capacity of the expanding economy.

A primary motivating force behind national integration efforts must be conceived, therefore, as an effort to bring the human, economic, physical and political resources of a country more directly under the control of the emerging national system. Institutional penetration seeks to increase that control by expanding the capability of local institutions to gain control of, and to transform local resources into new or greater resources required for self-sustaining national development progress. Social Development, therefore, may be conceived to have occured when the outputs of local institutions provide an adequate flow of resource inputs into the national system required for self-sustaining national development progress. Indicators of formal achievement of local institutions should be designed to measure that flow.

National systems are dependent on local institutional structures to produce many of the resources required for national development progress. In LDCs, local institutions are especially important to the mobilization and development of human resources and in the development of the agricultural potential of countries. Social service and agricultural sector program objectives, therefore, provide a useful place to begin to cut into the problem of identifying and designing formal achievement indicators. The success with which such sectoral programs achieve program objectives is greatly dependent on the success with which they are able to attain changes in the behavior and output of local institutions.

D. Program Objectives and Institutional Specialization

In a simple kind of socio-economic organization, like the subsistence agriculture or the household industries that prevail in so much

of the peripheral areas of LDCs, most of the local institutional functions are absorbed within the kinship structures. This historical tendency to integrate diverse but unspecialized activities, such as production, consumption, human socialization and physical nurture, within the family structure, simply means that the central focus of ecological expansion activities in most LDCs is to increase the capability of local kinship structures and subsistence farming activities to meet productivity requirements of the national system. One of the major thrusts of many social service and agricultural sectoral programs is to bring about change in the behavior of local family farming institutions so as to match local output with the resource requirements of national development. This involves, in part, efforts to redefine the problems and objectives toward which institutional activities are focused. It also involves direct efforts to change the behavior of family farming institutions by introducing new forms of technology, artifacts, skills, attitudes and forms of institutional organization.

Change in institutional organization has been an especially important aspect of sectoral programs. Such programs are largely concerned with the development of <u>specialized institutional structures in local areas in an effort to shift some of the institutional functions away from the family</u>, i.e., formal educational institutions are established to absorb part of the socialization function; health services are established to absorb part of the health function; the commercialization of agriculture constitutes an effort to make farming a business rather than a family function; the introduction of industry in local areas also constitutes efforts to shift production activities away

from the family.

Institutional specialization of this type is the primary objective of both parallel and cross-cutting organizational development. The development of specialized institutional structures is not, however, a random process. The extension of specialized facilities and institutions largely serve as information and service/maintenance linkages with local institutions to increase their capacity to mobilize and transform local resources to meet the formal achievement requirements of national development. It is here that the purposes and models of development underlying development planning become especially critical in the selection and design of operational indicators.

Social service and agricultural sectoral programs are conceived, therefore, as efforts to improve the capability of local family farming institutions to meet the formal achievement requirements of the national society through a process of institutional specialization. This involves a process of shifting some of the traditional institutional functions of the family to specialized institutions extended to local areas through the process of ecological expansion, as well as upgrading the capacity of kinship structures to carry out more specialized functions themselves.

The institution of the family in nearly all societies carries out certain specialized functions that are crucial to development progress. The process of population replacement or human reproduction is one basic family function that is an important concern in national development planning. The long-run survival of human groups is dependent on its ability to replace its aging population. Because

of this, many societies have tended to reward high fertility. While there still remains a few nations that maintain population policies designed to induce large families, the major focus of most contemporary population policies is directed toward reducing human fertility to a replacement level.

Population sectoral programs aimed at controlling the rate of population growth are especially dependent on changing the behavior of local family institutions where traditional institutional norms often reward high levels of fertility. Reproduction and sexual regulation is such a fundamental aspect of family life in most societies that rarily, if ever, has serious consideration been given to establishing alternative specialized institutions for that purpose. Population policies and programs are, therefore, primarily aimed first at providing information inputs into local family settings to redefine appropriate reproductive behavior, and to introduce change in family institutions to achieve desired levels of human reproduction. Secondly, such programs must be concerned with the provision of service and maintenance inputs into local institutions that provide a flow of resources necessary to effectively alter behavior in the pursuit of new performance requirements.

In the first sense, institutional penetration requires the establishment of communication linkage with local family institutions through which information can be effectively channeled to target populations. Such linkages are usually most effective if they provide direct contact with members of the target groups, although mass media can often be effective if properly used. Since, the target population of programs designed to achieve institutional change are

usually adult populations beyond the normal age for formal education programs, non-formal education programs are frequently crucial communication linkages. Non-formal education can be designed to reach the total target population through government sponsored training centers or extension education. Perhaps a more feasible approach, in many cases, is the training of local change agents who serve as teachers to other members of the target population.

In population sector programs, such information linkages function largely as educational mechanisms designed to (1) change attitudes and values concerning reproduction and appropriate family size; (2) increase knowledge concerning the nature of the population problem, the reproductive process and methods of fertility control; (3) introduce contraceptive techniques and provide training in their use; and in some cases (4) induce changes in family organizations, i.e., changing sex linked roles to provide women with opportunities for respect and status other than through child bearing. The specific type of institutional change desired will largely be determined by program or project objectives. Such objectives, in turn, are based on the models for change underlying sectoral planning which, at least hypothetically, link planned institutional change with the formal achievement requirements specified by national development policy. In other words, changes in institutional structure and process are not development objectives in and of themselves. Rather, planned institutional changes are means (social policy instruments) designed to improve the performance of local institutions relative to the output requirements of the national system. The quality of institutional change must be measured, in part at least, in terms of

the extent to which induced changes result in improved capacity of local institutions to meet the formal achievement requirements of the national system. Since social development is concerned with mobilizing long-run local support, the qualitative dimensions of institutional change must also be measured in terms of the impact it has on local need satisfaction as well.

A second type of specialized function performed by local family institutions is that of human development, including both the physical nurture and socialization of human personalities. It is within the family and its immediate environment that the basic conditions are maintained that determine, to a great extent, the physical health of the individual. The family is also the social context in which a great deal of the health care received by individuals is provided even in the more modernized societies. It is also in the family context that so much of nutritional requirements of individuals are met. Likewise, the family is responsible, in most societies, for primary socialization of attitudes, values and beliefs, as well as basic social skills necessary for participation in family and community. In more traditional settings this socialization function is much broader and includes, in many instances, the provision of occupational skills and knowledge for participation in the larger institutional spheres.

As is true of population planning, sectoral programs dealing with problems of health, education and nutrition are concerned with improving the capacity of local family institutions to achieve the formal human resource development requirements of the national system. There programs also seek to establish communication and service/maintenance linkages through which information and resources for change can be funneled into local institutions. In the case of education

and health, however, considerably greater emphasis is placed on the development of specialized institutional structures to absorb part of the socialization and health care functions traditionally fulfilled by the family and local community.

In a rapidly changing society, the family is normally poorly equipped to provide the formal education required for more specialized occupational activities outside the family. Therefore, the provision of some level of training to target populations is a fundamental objective of ecological expansion efforts. In some countries, national development policy objectives call for universal primary education. In other countries, educational policies are geared more toward the provision of vocational skills through either formal or non-formal education programs.

This does not mean that the family responsibility for the socialization of human personality is less than in more traditional settings. It simply means that the establishment of parallel educational organizations, to provide specialized training, broadens the institutional resources available to the family to carryout the socialization function. As the educational resources available to the family broaden, the family can become more specialized in its socialization functions it performs. It provides in a more specialized way the institutional context in which primary values are transmitted to children. It is in this context that the values and norms must be developed that motivate children to seek improved training. It can also serve as a basic steering mechanism to direct them into appropriate educational channels. For this reason, a major concern in education planning is the development of communication linkages with local family institutions through which information can be channeled to increase family awareness of education opportunities and to induce values that

support outside socialization programs, such as formal and non-formal education provided through the expansion of the national educational system into periferal areas.

The family is also poorly equipped to deal with many of the health problems they confront. The expansion of health services into local areas also provides a broadening resource base for the physical nurture of family members. Again, the development of parallel health systems in local areas does not lessen family responsibility to provide for the physical well being of family members. It simply means that greater resources are available to accomplish this task, allowing the family institution to specialize in preventative health care practices and the proper treatment of minor illnesses. For this reason, health programs also involve the establishment of communication linkages, through which information can be channeled, to assist families to create more healthful environments, improve health practices within family settings and mobilize broad based participation in health care services.

One central focus of efforts to improve health practices within family settings is that of human nutrition. The major focal concern in past efforts to improve human nutrition in LDCs has focused on improving the flow of food goods into the home. This is without doubt of priority importance for improved health in many LDCs. Some measure of food consumption must, therefore, be considered to be an important indicator of nutrition levels. However, nutrition programs often include efforts to change the nutritional behavior of families through information inputs designed to change eating habits, food preferences, food preparation and child care practice, etc., as well as the introduction of improved means of storing food (i.e.,

canning, grain storage, etc.) to maintain a fairly stable level of food consumption through the various agricultural cycles.

The process of institutional specialization is, therefore, a crucial integrative process designed to provide mechanisms for breaking down traditional attachments to local solidary groups, and for the mobilization of target populations into the organizational life of the national society. The importance of institutional specialization stems from the tendency for traditional kinship str ctures to develop a network of organization and informal social relationships which permits and encourages the members of the kinship group to remain within the confines of the group for all of their primary relationships and most of their secondary relationships throughout all stages of the life-cycle. This allows for the development of intense and rigid social bonds which strongly resist efforts to mobilize human commitment to the larger society. The expansion of the organizational and institutional life of the national society into local areas creates a local organizational network which transcends the kinship structure. Broad based local participation in these specialized institutional structures, therefore, results in shifting many of the secondary relationships and some of the primary relationships of target groups to an organizational life that transcends the kinship structure. With the growing specialization of the institution of family around a more limited set of functions makes local family groups increasingly dependent on the organizational life of the national society. For this reason, the process of ecological expansion and institutional specialization are concerned here as crucial processes in national development strategies and should be the basic subject matter in the design of social development indicators.

The processes of ecological expansion and institutional specialization are especially important to rural and agricultural development strategies. Programs aimed at the commercialization of farming, as well as integrated rural development programs are largely concerned with shifting the production function from the traditional hold of the kinship system. In subsistence agriculture, there is limited amount of independent exchange outside the family. Under these circumstances, market systems are often undeveloped, and the independent power of money to command the movement of goods and services is minimal. For this reason, national economic policy measures may have little influence on the institutional behavior of local farms until they have been pulled more fully into the national market. Efforts to increase agricultural productivity, therefore, often depends on the success with which local farming institutions are absorbed into the larger organizational life of the national economy. This generally requires the outward extension of the basic economic and physical infrastructure into periferal areas to provide the basic service/maintenance inputs required for more commercialized forms of agricultural activity, as well as linkages to the larger market system. It also requires the development of communication linkages to funnel information inputs into local farming institutions design to increase the capability of those institution to meet the productivity requirements of the national system.

The expansion of commercial and industrial enterprises into peripheral areas also constitutes a basic mechanism for differentiating production from the traditional hold of kinship structures. The expansion of commercial linkages not only opens up new internal markets for indigenous industries but also provides retail outlets

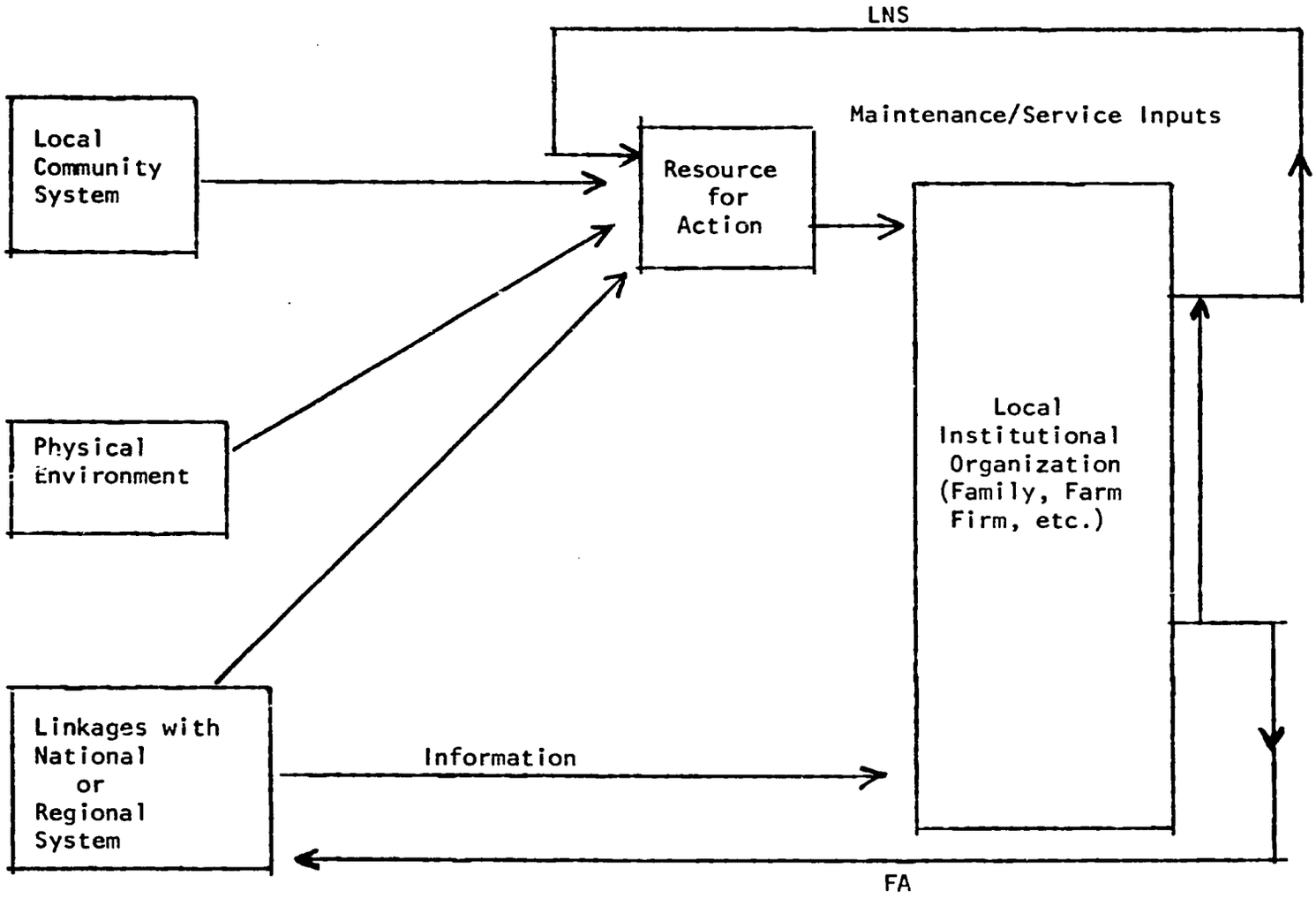
necessary for the institution of the family to specialize on consumptive rather than productive behavior. The establishment of industrial and commercial activities in peripheral areas also provides opportunities for non-farm employment. The more families become dependent on sources of income outside the subsistence farm activities the less will be the power of local solidarity group to control the production processes. It also provides a basic mechanism for monetizing the rural economy; a condition that is essential if local economies are to be responsive to national economic policy.

(Figure 1 about here)

E. Measuring Local Change

Social development has been conceived in this report as the growth of society within a national population. Several sequential social processes of developmental change have been discussed from this perspective that are conceived as essential if social development is to occur. The first is the need to establish a fairly unified system of modern institutions that have demonstratably greater capability of meeting changing needs and demands of a social, economic or political nature than traditional institutional processes. This process is frequently referred to as the modernization of institutions into peripheral areas of the country to absorb larger and larger populations extending over wider and wider territory of the country. The third process involves institutional change in local areas. Institutional change has been further analyzed along two dimensions of change: (1) change in local family and subsistence farming activities designed to upgrade their capacity to meet the

Figure 1. A Model of Institutional Change



formal achievement requirements of the national system, and (2) institutional specialization designed to broaden and upgrade the institutional resources available to local institutions through the establishment of systemic linkages between local and national institutions. The fourth process is concerned with the mobilization of popular participation in modernizing institutions.

Since the focal concern in ecological expansion is to achieve greater national integration by assimilating local areas of the periphery more fully into emerging national institutions, indicators of social progress must initially be designed to measure the extent and quality of change in local areas. This, of course, raises the methodological problem of defining the size and boundaries of local areas. The most ideal definition, no doubt, would be to assemble data and produce indicators by functional social and economic areas. The weakness in that approach, however, rests in the fact that the boundaries of functional areas do not always merge with political boundaries. Since indicators should provide data for improved development planning, it is recommended that local areas be defined largely by relevant government administrative areas with local areas defined by administrative units no larger than county or district.

1. Formal Achievement Indicators

To measure the extent and quality of change at local levels two basic types of indicators will be proposed. The first is concerned with measuring change in the performance of local institutions. As conceived in this report, change in local institutions is sought largely to match the output of local institutions with the resource requirements of the national system. Demands made on local institutions by the national system have been

referred to as formal achievement requirements. Measures of institutional performance are, in turn, referred to as indicators of formal achievement. For purposes of integrated rural development planning, a comprehensive set of formal achievement indicators would be required to measure the flow of those local resources into the national system. In this report interest is limited to sectoral planning in the areas of population control, health, education, nutrition and agricultural development. Indicators suggested below will primarily be limited to these broad sectoral programs.

Since formal achievement indicators are designed to measure local institutional performance against the standards specified by national development policy, appropriate indicators must be selected and designed so that they are consistent with the unique policy standards of each country. A selected list of formal achievement indicators are presented in this report for each sectoral area that reflect fairly universal sectoral goals. In addition to these each country should specify indicators consistent with their own policy goals.

Formal achievement requirements imposed on local institutions are basically resource demands, and formal achievement indicators should be designed to measure the growth or improvement in the quality of the resource base available for national development. Sectoral goals in the areas of health, nutrition and education fall largely under the heading of human resource development. Formal achievement indicators in these areas should reflect change in the quantity and quality of human resources available for investment in national development efforts. From the point of view of human development, the primary concern is increasing the capability of people to fulfill functional roles in a changing society, and the distribution of that capability within a population.

In the areas of health and nutrition, indicators should be designed to measure the functional health status of the population. In this sense a person is defined as well if he is able to function in a way usual for his age and sex. To the extent that he cannot, he can be defined as disabled. From this perspective, indicators of health and nutrition would be most desirable if they reflect the proportion of the population free from disability at any point in time.

Efforts to develop fairly sophisticated indexes of functional health status have been underway for many years. The work of J.W. Bush and associates (Bush and Fanshel, 1970), is especially worthy of consideration for use in LDCs. The most serious weakness of this type of index is the extensive data requirements. For this reason, we recommend that a simpler measure be used initially to reflect the functional status of the population. Perhaps the most desirable indicator would be an estimate of the proportion of the population in local areas that are able to engage in productive activity at a point in time. Such information could be obtained from a sample survey of local areas which illicits information concerning the number of days lost from productive activity due to disease or disability. Additional indicators of health and nutritional status that may serve as valuable reflectors of health and nutrition are:

1. Health

    a. Infant mortality rate classified by relevant population subgroups
    b. Death rate due to infectious and parasitic diseases
    c. Crude death rate

2. Nutrition

    a. Average height and weight classified by sex and age

b. Calorie consumption, per capita, per day
c. Protein consumption, per capita, per day
d. Consumption of animal protein, per capita, per day
e. Non-starchy calorie consumption, per capita, per day

Education is of critical importance in ecological expansion because it provides a basic mechanism for transferring the knowledge and skills necessary for participation in the development progress of the national society. Non-formal education is, of course, a critical process in transforming local institutions. Human resource requirements for national development progress, however, human resource that have the flexibility to engage in changing social and economic roles required for self-sustaining development progress. This means an ability to fill roles of an increasing technological complexity as the nation develops. For this reason, it is the view of this report that the best indicators of formal achievement in the area of education are measures of the formal educational attainment of relevant population subgroups in local areas including:

a. Illiteracy

Measured in terms of the literacy rate for the population 10 years of age or older.

b. Formal Education

1. Average years of formal education completed by relevant population.

2. The proportion of the population to have completed each level of educational attainment (elementary, secondary college or advanced degrees) at the end of their formal educational experience.

c. Occupational Skills

Measured in terms of full or part time employment in both farm and non-farm occupational roles.

Efforts to control population growth rates through sectoral planning is largely concerned with regulating fertility levels in target populations. Formal achievement indicators of population growth are

1. Crude Birth rate classified by relevant population subgroups.
2. Fertility rate classified by relevant population subgroups.
3. Rate of Natural increase.
4. Average family size

Formal achievement indicators for agriculture are largely concerned with agricultural productivity and the flow of agricultural products into the national system. Production per hectare is perhaps the best indicator. Other achievement indicators are:

1. Agricultural production per hectare classified by type of commodity and farm size.
2. Agricultural production per unit of labor input.
3. Volume and value of agricultural products exported from local area.
4. Volume and value of agricultural products consumed locally.

2. Ecological Expansion

A second type of social development indicators needed to measure social progress, as conceived in this report, are indicators designed to measure progress in the ecological expansion of the emerging national institutions into the periphery. Here one needs indicators to reflect the impact of sectoral programs on local areas. Essentially, ecological expansion involves efforts to achieve greater national integration by making available to local populations greater opportunity to actively participate in the process of national development. Indicators of ecological expansion should, therefore, measure the extent to which institutional resources are actually available to local populations, the accessability of those resources to relevant population subgroups and the extent to which local populations participate in those new

institutional processes. The development ideal underlying the process of ecological expansion is "equality of opportunity" to participate in national development progress regardless of individual membership in other social or territorial subgroups.

a. Systemic Linkages

The key process in the expansion of the organizational life of the national society to absorb larger proportions of the nations population is the establishment of organizational and institutional linkages between local areas and the modernizing sectors of the national society. In part, the establishment of systemic linkages requires the extension of institutional resources, facilities and services so that they are available in local areas. It also involves establishing infrastructure, transportation networks and social structural modifications so that those resources are universally accessible to all the population they are designed to serve. However, systemic linkages are not complete unless the benefits of those resources actually reach the target population and that target population actually participates in the services provided. Therefore systemic linkage processes require both the extension of institutions and the mobilization of the target population to participate.

To measure interorganizational linkages of this type, information is required concerning

1. The scope and intensity of the interorganizational linkages established in the local, district and regional administrative levels.
2. The type of service/maintenance or information resources made available through each institutional linkage.
3. The extent to which those resources are universally accessible to members of the target population.
4. The level of participation of that target population (including the flow of benefits to them).

5. The extent to which such participation results in an improvement in the formal achievement of local institutions.

i. Scope and Intensity of Systemic Linkages Interorganizational linkages are organizational channels through which services/maintenance resources and information flow between the national and local social systems. For this reason, interorganization linkages can be conceived as organizational or institutional resources in-and-of themselves. To measure the success of ecological expansion efforts, it is necessary to have an accurate accounting of both the scope and intensity with which systemic linkages have been established in local areas and the value added to these organizational resources through development programs or through local initiative. By scope we refer to the range of types of linkages that have been developed in local areas. Table II presents a selected list of interorganizational linkages that often play important roles in development programs. Generally, development strategies are outlined to and various linkages in some sequential pattern defined by some priority ranking. Therefore, one would expect to find a gradual expansion of interorganization linkages as the economic capability of local areas increases.

The first step in measuring the effectiveness of ecological expansion is, therefore to list the interorganizational linkages available in local areas and to monitor the expanding scope of those linkages through time. Such information should be readily available through the normal administrative records of sector planning offices.

The intensity of interorganizational linkages refers to these organizational resources to the population served, i.e., the quantity of hospital beds per 1,000 population; the number of doctors per 1,000 population; the number of extension workers per 1,000 farmers; the number

of classroom spaces per 1,000 population, etc. Together, scope and intensity provide a fairly good indication of the resource functional capacity of local community organization at a point in time.

(Table II about Here)

II. Effective Radius of Interorganization Linkages Since ecological expansion is conceived as a development strategy designed to bring about greater equalization of opportunity to participate in national development, it is important to have some measure of the extent to which they are uniformly accessible to the population they are intended to serve. Studies in human ecology have generally found that the frequency and duration of participation, as well as the quality and quantity of benefits received, are directly related to the distance one is located from that service center (Mayhew, 1971; Hawley, 1950). The problem of surface friction is especially important in rural areas of LDCs because of the inadequacies of the highway infrastructure and transportation networks that often exist. In many cases, the distance one must travel to make use of services offered is not as much of a problem as the time required for the journey.

The effective radius of linkage installations and services is largely a function of the type of service offered, the time/distance required and the level or type of need in target populations. For instance to effectively treat emergency health problems the time/distance factor may be a very critical constraint. For other types of health problems the time/distance factors may be less important but the sophistication of the health care required may be a more important consideration. Both time and distance are costs to the client population and, therefore, important factors in determining the accessibility of services to them.

Table II

Selected Typology of Interorganizational Linkages

I. Organizational and Professional Linkages, where continued existence depends on the successful transmission of information and service/maintenance resources and use of them by target groups.

A. Agri-Support Linkages

1. Production Linkages (co-operatives, production supplies and equipment outlets, retailers, irrigation committees, etc.)

2. Market Linkages (local, district, regional, national and international, storage facilities by type of storage)

3. Financial Linkages (banks, credit associations, etc.)

4. Information Linkages (extension education, training centers, agricultural technicians, community development specialists, research and demonstration projects, etc.)

5. Farm Organization Linkages (trade unions, labor unions, voluntary farm associations, irrigation and cultivation committees, etc.)

B. Education Linkages

1. Formal Education Linkages (primary, secondary, college, university, etc.)

2. Vocational Education Linkages

3. Non-Formal Education Linkages (including training in improved farm practices, farm planning and management, food processing and preservation, farm maintenance, public participation, skills for family improvement (e.g., health, nutrition, home economics, child care and family planning, knowledge of cooperatives, as well as non-farm occupational skills)

4. Professional Linkages (teachers per 1,000 persons of school age, etc.)

5. Informational Linkages (newspaper, radio, TV, etc.)

C. Health/Nutrition Linkages

1. Modernized Health Facilities (dispensary, multipurpose clinics, hospitals, laboratory facilities, mobile clinics, etc.)

2. Professional Linkages (paramedics, doctors, nurses, etc. per 1,000 population)

3. Preventative Health Services (vaccination programs, water quality tests, sanitation programs)

Table II (cont'd.)

4. Information Linkages (training in health cure skills, child rearing, personal hygiene, etc.)

5. Food Distribution Linkages (retailers, food importers, etc.)

D. Population Control Linkages

1. Information Linkages (family planning clinics, training in birth control, sources of supply of contraceptives, etc.)

E. Infrastructural Linkages

1. Roads Linkages (linkage to local, district, regional markets and service centers, etc.)

2. Transportation (public, private by type)

3. Communication Linkages (telephone, telegraph, etc.)

4. Energy Linkages (electricity, cooking/heating fuels, etc.)

While there are fairly sophisticated ways of estimating the effective radius of service installations, initially all that may be required are rough estimates of a reasonable time/distance cost to the client population and the proportion of the population to be served that live within that radius. It may also be valuable to estimate the proportion of the population living in concentric zones ranging from locations where the time/distance is negligible to zones where the services are relatively inaccessible due to time/distance costs. The average time/distance cost experienced by the client population can be estimated by:

$$AR = \frac{\Sigma(Z \times P)}{N}$$

Where Z is the concentric zones in which zone 1 is most accessible to the facility or service, and P is the estimated size of client population living in that zone.

iii. Participation and Use of Linkages The best measure, however, of the effective radius of systemic linkages can be estimated in terms of the spatial location of participants. Sometimes the spatial location of participants in services can be determined from the normal administrative records of the supplier of services. In other cases, it is necessary to design sample surveys through which such information can be obtained. To obtain a good estimate of the effectiveness of systemic linkages in reaching target populations, it is recommended that carefully drawn areal sample surveys be conducted in local areas to obtain information concerning where they go to obtain services they require in the normal process of living and the time/distance costs they incur. The specific question posed in such a survey would have to be patterned around the specific linkages that are extended into local,

district and regional centers. In assessing the effectiveness of health care facilities, as an example, types of information required should include:

1. Quantity and rate of sickness experienced by members of the family.
2. Types of disease or condition of ill health experienced classified by age, sex.
3. The characteristic demand for health services, i.e., drugs for self-treatment; health centers by type of service and staffing, government hospitals, private hospitals and private clinic, herbal, magical doctors and native midwives, injection doctors, government specialized clinics and military hospitals, do not visit any health service center, etc.
4. Distance of household from the health care service used.

In short, questions should be posed relative to all institutional linkages concerning the level of utilization, demand for its service by persons or families differentially located in geographic and social space, and the adequacy of such services in meeting local need. To measure the level or rate of behavioral or cultural integration it is essential to include questions concerning the utilization of traditional services in order to determine whether a significant shift is made toward a preference for more modernized services in target areas.

Table III presents a selected list of indicators of popular participation and utilization of service/maintenance and information resources made available through interorganizational linkages in local areas. For a list of additional indicators by sector one may wish to examine the three reports that were prepared as supplements to this report. These reports provide a discussion and listing of indicators for health, nutrition, agriculture and population. Additional education indicators are suggested in two earlier reports entitled, A Methodology for Indicators of Social Development Report 2, page 79 and Report 3,

pages 37-43. Report 4 in this series provides further discussion of health indicators.

(Table III about Here)

3. Social Development Indicators

The concept of social development, as outlined above, is conceived as the growth of society within a national population. The social development process involves the creation of a fairly unified system of productive institutions in which members of the society have equal opportunity to participate without reference to membership in population subgroups or ethnic subdivision. Indicator of social development should, therefore, be designed to measure the extent to which a unified system of institutions are emerging and the degree to which there is "equality of opportunity to participate in those institutions.

Institutional specialization, a process in which many of the institutional functions traditionally absorbed within the kinship structures are shifted to specialized institutions, is central to the process of creating a unified system of national institutions. The establishment of specialized institutional linkages between local and national systems is part of this process. However, the presence of institutional linkages is not an adequate indication of institutional specialization by itself. Institutional specialization must be expressed in the concrete behavior of individuals and families as they develop commitments to those new institutional forms. Therefore, the widespread entrance into the organizational life of the nation, through active participation in the specialized institutional process extended into local areas, is a good indicator of the emergence of a unified institutional system.

Table III

Selected Indicators of Participation of Use of Systemic Linkages by Sector

A. Educational Participation

1. Level of Participation, measured in terms of the proportion of the population of normal school age enrolled in different branches of the education system (including non-formal training programs), classified by age, sex and distance from facility.

2. Duration of Participation, measured in terms of the number of years completed at the termination of educational activity classified by age, sex and distance from school facility.

B. Health Care Participation

1. Level of Participation, measured in terms of the proportion of the total population located within the service area by type of service and classified by age, sex and distance from facility or service.

2. Frequency of Participation, measured in terms of the number of visits per person annually classified by type of service, location of service and by age and sex of patient.

3. Preventive Medical Care, measured in terms of the proportion of the population vaccinated or immunized.

4. Health and Nutrition Education, measured in terms of proportion of the population who have successfully completed formal or non-formal training in health care, personal hygiene, food preparation, dietary training, etc.

C. Participation in Agri-Support Services

1. Level of Participation, measured in terms of the proportion of the total population located within the service area by type of agri-support service (cooperative, credit, savings, storage facilities, irrigation, local, regional and national markets, etc.), classified by age, size of farm, distance from service center.

2. Level and Frequency of Off-Farm Employment, measured in terms of the proportion of the total population of the service area by type (industrial, commercial, public works, craftsman, college industry, etc.) and duration (full time, part time, seasonal, etc.), classified by age, sex, size of farm, distance from service center.

3. Level of Adoption of New Farming Practices, measured in terms of the proportion of the total farming population living within the service area, by type and duration of adoption and use, classified by age, sex, size of farm, distance from service center.

4. Participation in Non-Formal Agricultural and Extension Education, measured in terms of the proportion of the total farming population living within the service area, by type of non-formal education, duration and frequency of participation, classified by age, sex, size of farm, distance from service center.

Table III (cont'd.)

D. Population Control Programs

1. Level of Participation, measured in terms of the proportion of the total population living within the service area, by the type of population control program (family planning clinics, sterilization, abortion, contraceptive programs, etc.), classified by age, sex, size of family and distance from the training center.

A scale of social participation, which can be constructed from the type of survey data mentioned in the previous section, can provide an adequate measure of institutional specialization in local areas. A social participation scale should be designed to measure variations in the extent to which individuals or families actively participate in the specialized institutions and development programs within their area. The values in the scale should reflect the proportion of the target population who actively participate in all the development services and programs available in the local area at one extreme, to no active participation at the other extreme. This scale should, however, be constructed so that it can be disaggregated to reflect variations in the participation levels of population subgroups. For instance, it should be designed to reflect variations in participation that are a function of differences in the time/distance costs required to participate. It should also reflect socio-economic differences such as income, type of employment or occupation, size of farming operation, as well as age, sex and size of family. Social participation scales can be constructed to reflect participation in sectoral programs or in general development programs.

A second indicator of social development needed to measure social progress is a measure of the extent to which development programs are leading toward an equalization of opportunity to participate. At the beginning of this chapter it was argued that one reflector of equality of opportunity might be measured in terms of the degree to which development resources are distributed equally within a national population. It was also suggested that the extent to which local areas experience resource deficits should be measured against the resources held by the

more modernized and affluent members of the local, regional or national population. In assessing the effectiveness of ecological expansion, the focal concern is the equality with which the institutional resources of the national society are made available to population subgroups in periferal areas. This requires primarily a measure of the social distribution of institutional resources.

There are a number of techniques for measuring distribution that are applicable for this type of assessment. One is the Guttman Scaling Technique which has been used extensively by Paul Eberts, Frank Young and their Colleagues at Cornell to make intercommunity comparisons of social differentiation. The problem of using this technique for measuring and comparing social differentiation is the problem of determining the policy implications of the scale. In ecological expansion, however, one is concerned with the success of development policies that call for the extension of services into peripheral areas through some sequential set of priorities. Since the extension of these resources and facilities are subject matter of public policy, any measure that reflects differences in the availability and accessibility of those resources between individuals or communities is a measure of the degree of equality of distribution and, thereby, policy relevant.

A second technique commonly used to measure distribution is the Gini index of inequality. Jan Drewnowski (1970) has made use of this technique in developing indexes of distribution using both cardinal and ordinal data measured in real terms. Aggregate indexes of this type are, of course, not highly sensitive to public measures in the short run, but do provide a fairly good indication of the extent of inequality.

A third method for measuring distribution of resources is the

taxonomic technique developed by a group of Polish mathematicians for the UNESCO studies of human resource indicators. This approach has been used largely for intercountry comparisons. This technique provides a means of classifying social groups at different levels of development by measuring their distance from an ideal development scale. The ideal scale is an aggregate of the highest value of all variables in the scale found among the various populations to be compared. This technique may be of considerable significance in measuring inequalities in institutional resources held by various local areas at a given time, because the focus of the scale is always a measure of the relative position of various subgroups to a development ideal that is constructed from data drawn from that country in which comparisons are made. For detailed discussion of this technique and its application in development analysis see Hellwig, 1970; Harbison, 1970; and Szczepanik, 1973 listed in the bibliography.

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