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Social Systems Models of Indicators of Social Development

A Preliminary Methodological Framework

by

Leslie D. Wilcox  
Task Leader

Wm. Alex McIntosh  
Research Associate

Kerry J. Byrnes  
Senior Research  
Assistant

James Malia  
Research Assistant

Sociological Studies in Social Indicators .....Project Co-Directors: Leslie  
D. Wilcox, Gerald E. Klomglen,  
and George M. Beal

Project Assistants: Kerry J.  
Byrnes, Anan Chiamicharoen, James  
Malia, Wm. Alex McIntosh, and  
K. William Wasson

Department of Sociology and Anthropology .....Iowa State University of  
Science and Technology.....  
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## PART I: INTRODUCTION

As policy makers have attempted to become more actively involved in building viable programs to further social development, they increasingly have recognized an acute need for more adequate theoretical tools and for more relevant empirical data to assist in the formulation of effective social policies. This recognition stems not only from societal pressures, but also from an introspective searching on the part of policy makers themselves. Increasingly, both citizens and administrators call for a re-examination and re-assessment of societal priorities and goals, the means by which society pursues desired goals, and the role which policy makers play in setting priorities and in implementing means to achieve those goals. This call for an overall re-assessment reflects in large part a distinct disenchantment with overly "administrative" government, that is, government that devours large expenditures of the taxpayer's money in order to finance some administrative intervention in society envisioned by the policy maker as the "solution" to what he perceives as the "social problem", "solutions" which, when all is said and done, seemingly have by-passed the needs of the common man.

An area subject to most severe criticism in this regard is that of foreign aid to the less developed countries (LDCs) of the world. Many have urged that those charged with the responsibility of directing non-military foreign assistance programs should either drastically reorder priorities or eliminate foreign aid in its entirety. In an effort to constructively respond to such criticism, the United States, through the Agency for International Development (A.I.D.), is beginning to chart a new course toward provision of more relevant assistance to the developing countries. While much of foreign assistance will undoubtedly continue to heavily reflect a priority emphasis on economic development, A.I.D.

has recognized that a priority emphasis must also be placed on the so-called human dimension of social development. This focus on the human dimension of social development entails not only a greater concern for a more equitable distribution of economic benefits in the developing countries, but also a concern for the overall "quality of life" of the citizenry and a greater political participation, as evidenced by Title IX of the 1966 Foreign Assistance Act.

Indeed, the new view or philosophy of the development process which is emerging recognizes that people are the target as well as the essential variable in development; that effective development by and of people requires new approaches to the organization and management of people and resources--in other words, social policy that creates ways to facilitate and guide change in the direction of goals and objectives valued by the developing society; and, finally, that the creation of successful social policy will depend upon an understanding of what is involved and, if possible, upon a willingness on the part of planners, policy makers, and other decision makers to approach both old and new problems with an open mind, and upon their recognition of the need to acquire the data necessary for planning and making policy decisions.

The re-direction of the U.S. foreign aid program, however, is not solely the product of the recent skepticism concerning the role of government in policy making; it must also be viewed as the evolutionary product of an historical process. A brief review of some of the history of development assistance is thus relevant in understanding the supportive role which A.I.D. now seeks to play in assisting developing countries in the mobilization of their resources for their social and economic development.

#### Evolution of the Development Assistance Program

At the conclusion of World War II, the United States participated heavily in the reconstruction of those parts of the world devastated by the war. Large

amounts of money and capital were given to Japan and many of the Western European countries in order to revitalize their economic systems. A similar effort was also extended to the LDCs on the assumption that Western technological wisdom could both restore a world destroyed by war as well as bring into this modern industrial world those peoples and nations so long outside it.

Time and experience, however, have shown that the traditional developmental efforts so successful in Europe and Japan have not been sufficient to meet the needs of the LDCs. Speaking to this point, Dr. John A. Hannah has said:

Today--after twenty years of growth--life for most people in the development countries is still bleak. There is widespread disease and malnutrition, high infant mortality, low life expectancy, extensive unemployment, wholesale illiteracy--the whole catalogue of physical and social ills which measure the human frustration and misery that go hand-in-hand with underdevelopment.

Malnutrition or undernourishment affects most of the children in the less developed countries. In some, as many as one-half of all children die before they reach the age of five--primarily because they are malnourished and highly susceptible to "simple" infections and "childhood" diseases such as measles and whooping cough.

One-fifth of the entire male labor force has either work that does not pay a living wage or no job at all.

Two-thirds of the adults are illiterate. Some 300 million school-age children get no schooling at all. For them there are no schools, no teachers, no books.

In some of these countries, there is only one doctor for every 20,000 or 30,000 or in extreme cases, 50,000 people, compared to one for every 700 people in the United States. (Hannah, November 2, 1971:9-10).

In short, the injection of money and capital into the subsistent, largely feudal societies which make up much of the Third World did not result in the economic and societal transformations experienced in Europe and Japan. The "quality of life" and "life chances" of large masses of people, especially those engaged in agriculture of one form or another, remain essentially unchanged. At the same time in the developing countries, the ruling classes, already comparatively rich, become even richer.

On September 24, 1969, a Presidential Task Force on International Development was appointed to "examine United States foreign economic and military assistance programs, our trade and investment relations with the developing countries, and the fundamental problems that the United States faces in this area of foreign policy . . . to look carefully into the underlying rationale for these programs, to take nothing for granted, and to reconstruct policies that will serve the best interests of our nation through the decade ahead." (U.S. Foreign Assistance In The 1970s: A New Approach, 1970:1).

The results of the Presidential Task Force on Foreign Assistance were made public on March 4, 1970 and reaffirmed the United States' interest in cooperating with developing countries to improve conditions of life in their societies. More specifically, the Task Force outlined a new direction for United States foreign developmental assistance. Dr. Hannah delineated this new direction for the Agency for International Development:

A.I.D. should focus its efforts on programs of direct benefit to people. We want to help develop new techniques to combat some of the unprecedented problems which the less developed countries face often, particularly as a result of rapid population growth. United States assistance should be geared to the desires of the recipients; only the peoples of the less developed countries can effectively develop their own. We can help. But we must remember we are dealing with their countries, not ours. The problems are theirs. The solutions, too, in the end must be theirs. (Hannah, January 27, 1972:10).

Such sentiments are in accord with Title IX which not only calls for greater citizen participation and more equal distribution of benefits in those countries receiving United States assistance, but also specifies that the United States should maintain a lower profile in its development assistance activities.

Thus, the focus of United States foreign assistance is on the human person, for "The development of human resources--of people--is both the means and the objective of national development" (Hannah, January 27, 1972:7).

Coupled with the more specific concern to redirect agencies such as A.I.D., it has increasingly been suggested that new information systems are needed which assist policy makers in assessing both the relevance of development goals and the means of achieving desired goals. This conclusion reflects both the criticism of and the questions which have been raised with respect to the adequacy of data utilized in development assistance programs. Of particular concern has been the overall reliance on such informational tools as Gross National Product, used both as a goal and as an aggregate indicator of development success. In measuring the more disaggregate phenomena involved in social development, phenomena such as individual well-being, aggregate indicators like GNP are inadequate. Thus, new kinds of indicators--social indicators--are needed which facilitate assessment of a nation's overall progress toward desired societal goals.

Such social indicators, however, are not yet readily available for implementation by societal managers (e.g., planners, policy makers, and other societal decision makers). Nevertheless, the recognition that economic indicators have generally failed in monitoring the actual social progress of a nation and, therefore, that there is great need for social indicators, has proven to be a strong stimuli in launching what is frequently referred to as the "Social Indicator Movement". To date, however, there has been little agreement among those involved in the "movement" as to what social indicators should consist of, how they should be used, and who should use them. There have, however, been a number of pioneering efforts to begin to establish lists of social indicators, to suggest models of social indicators, and to suggest the empirical nature of such indicators.

Indeed, the present contract between A.I.D. and the Department of Sociology and Anthropology at Iowa State University represents one of several pioneering research efforts now underway on indicators of social development. As part of A.I.D.'s attempt to assist the LDCs in developing social indicators which are relevant to the human dimension of social development and which have some utility for the assessment of the effectiveness of programs and projects to further social development, A.I.D. has contracted Iowa State University to develop methodological approaches that may be used by LDCs in assessing societal progress toward desired societal goals. Among the many research tasks involved, the Social Indicator Project at Iowa State will determine the kinds of relevant social indicators available or that could be made available and would provide a quantitative basis for better assessing societal progress toward desired societal goals. Also, the Social Indicator Project is to field test in one or more LDCs the applicability and utility of the methodological approach developed by the Project and the system of indicators which that methodological approach generates.

Along the way toward achievement of these objectives, the contract between A.I.D. and Iowa State University calls for a series of outputs leading to the ultimate goal of "a methodology for assisting LDCs to devise and use a set of social indicators in measuring social development" (A.I.D./I.S.U. Contract, June 16, 1972:2). Some of the key outputs leading to the development of a final methodology are as follows:

- |  |                   |
|--|-------------------|
| a. Tentative Framework                                 | November 30, 1972 |
| b. Assessment of A.I.D. project achievement indicators | March 31, 1973    |
| c. General Social Systems Model                        | June 30, 1973     |
| d. Sectoral Model                                      | June 30, 1973     |

This report fulfills the first output objective of the contract. Included in the report is a preliminary methodological approach or logical framework by

which general social system models of social development may be constructed. The work presented here is both preliminary and tentative in that it represents the initial output from a scientific inquiry. The output is tentative in that, as the scientific process is applied in a continuous systematic manner, discoveries are frequently made which require that the scientist must re-assess original assumptions, altering them where necessary, in order to refine man's scientific knowledge of the constantly changing sociophysical environment in which all human beings live.

#### Some Thoughts to Bear in Mind in Reading This Report

This report attempts to demonstrate that a number of important issues had to be considered and resolved in order to delineate a logical framework that provides a basis on which a model of indicators of social development can be generated.

As previously specified, A.I.D. seeks to place a priority emphasis on the human dimension of social development. In essence, A.I.D.'s redirection of its development efforts from an almost purely economic focus to a more integrated blend of socio-economic concerns calls for the establishment not only of new agency goals, priorities and objectives, but also, at the same time, that a new set of indicators, social indicators, must be developed to augment the economic indicators upon which development efforts have so largely depended in the past for evaluative assessments of policy, program, and project effectiveness.

In order to develop the kind of social indicators which can be utilized by the developing countries to assess their social development progress, the Social Indicator Project initiated its research by examining the literature on past social indicator research, not only to more fully capture the significance of the increasing departure from G.N.P. and other economic indicators

as both goals and overall assessments of a society's development progress, but also to delineate the various alternative approaches to social indicators that have been considered by policy makers and scholars alike. In this manner, it was felt that the kind of social indicator approach most relevant to social development could be determined. Part II of this report outlines the alternative perspectives on social indicators revealed by this literature review. The review demonstrated several important implications of social indicators for social development. First, it became clear that social indicators of social development must be of direct utility to and utilizability by societal managers (e.g., planners, policy makers, social action personnel, and other decision makers). The development of a social information or data system is inherently sensible only if such a system is relevant to the purposes, goals, priorities, and objectives of those who are going to use it. Scientists, of course, cannot decide for a society what its goals, priorities, or objectives should be, but scientists can (in their role as technicians) and should (in their role as citizens of a particular society or as members of the human community) play a part in the development of adequate tools that will assist a given developing country in assessing the general direction of its society and of the society's success in meeting its societal goals.

The import of social indicators lies in their informational feedback capacity to provide policy makers and other societal decision makers with an objective data base to assist in deciding whether and how to readjust policy decisions and program implementation when previous policies and programs have not been accompanied or followed by more than just chance progress toward societal goals. Such user-oriented social indicators, however, are more than merely output indicators of program evaluation; such indicators are developed at the societal goal level and the feedback they provide allows a continual reflective posture in reference to the overall worth of the goals themselves.

Thus, an adequate set of social indicators would show not only how well a society is meeting its goals, but also whether particular desired societal goals continue to be relevant over time in relation to other desired societal goals. Thus, a system of social indicators relevant for the social development of a particular developing country not only needs to be in the hands of those who articulate societal goals, but also must consist of a set of utilizable tools which can be used by societal managers to implement the societal postures and actions hypothesized to achieve the societal goals.

A second concern, closely interrelated with the considerations discussed above, is that social indicators be more than merely a list of unrelated social statistics. Societal problems are generally complexly interrelated; indicators designed to assess the progress of societal efforts in solving societal problems and in reaching desired societal goals must reflect this complexity. The review of literature demonstrated that if social indicators are taken simply to be nothing more than a list of social statistics that do not provide clues as to how the problems faced by society are interrelated, then such data will be of slight utility for the societal manager. Thus, the real promise of social indicators lies in the possibility of identifying social indicators which are parameters or components in a societal model which specifies the kinds of interrelationships among components which can be manipulated by societal managers. A key implication, therefore, in evaluating not only the perspective suggested in this report, but also the eventual methodology which the Social Indicator Project is contracted to produce, is that a list of social indicators of social development would be totally inadequate and inappropriate. If social indicators are to be of utility to societal managers in the LDCs, they must be components or parameters in a general model of social development.

It must also be stressed that at the same time that the Social Indicator

Project was in the process of reviewing the literature on social indicator research in order to identify a social indicator approach that would be relevant to social development, the Project had also to determine exactly what the concept "social development" itself entailed. Before deciding on a logical framework in terms of which a model of indicators of social development can be built, "social development" itself had to be defined. Thus, Part III of this report is devoted to a critical examination of a sampling of some of the theories of development. This evaluation of past research experience and theorizing on social development was made to identify the issues involved when social development itself is viewed from a social indicator perspective; and then to take these issues into account in specifying a logical framework that would provide a basis for constructing a societal model of social development which incorporates social indicators as integral components and parameters.

The review of various theoretical approaches to development resulted in the selection of an orientation or approach to social development which entails a number of general assumptions concerning the actual development process. This approach, presented in Section C of Part IV of this report, allows for policy makers in a developing country to take into account both basic human needs and the particular social values of the society in the formulation and evaluation of development policies. Development itself is seen as a process by which society increases its control over its problems through a planned coping process; thus, development is a more effective societal coping with societal problems.

As most theories of development, at least those reviewed in Part III, are inherently laden with the values of the industrialized, Western nations, and not necessarily those of the LDCs, rather than deduce models from these theories, it is suggested that a more inductive approach should be taken in

constructing indicators of social development for the LDCs. If social indicators are, in fact, parameters (as well as components) in a model of social development, then the inductive approach is particularly relevant and necessary for the generation of estimates of those parameters. Parameters are generally estimated empirically; thus, as induction begins with an examination of the data before a final model is postulated, a more inductive approach to the construction of models and indicators of social development is quite compatible with this paper's definition of a social indicator. Part IV thus also contains in Section C a discussion of the inductive approach to model building.

The presentation of the logical framework in Section C of Part IV proposes that an inductive approach be followed in order to construct society-specific models of social indicators of social development. The remainder of Part IV discusses in greater detail the nature of the inductive methodology that could be utilized to construct models of indicators of social development based on the logical framework. Following this discussion, Part V outlines a Plan of Study consisting of procedures and tasks perceived at this point in time as necessary in order to generate over the next six months of contract time societal and sectoral models of social development.

## PART II: PERSPECTIVES ON SOCIAL INDICATORS

If one were to give a definitive answer to the question: "What is a social indicator?", one might start at least by noting a dictionary definition of the concept indicator: "a thing that indicates; specifically a gauge, a dial, etc., that measures something."\* Central to this definition, of course, is the word indicate which the same dictionary defines as: "to direct attention to; point out." Thus, with respect to society, a social indicator would measure some aspect of society, i.e., would direct attention to or point out some aspect of society. The reader will be quick to note, of course, that attempting to define "social indicator" in terms of a dictionary definition results in a rather unsatisfactory, vague specification of exactly what a "social indicator" is; notably absent, for example, is any specification of exactly what aspect of society a social indicator would or should measure.

Thus, it is not always immediately clear exactly what is meant or intended by the term "social indicators". Despite the lack of clarity, social scientists have increasingly focused on the general concept "indicators" and the more specific concept "social indicator" as the integral feedback component of a societal information system. The sharpening of focus on the "social indicator" concept reflects not only recognition of the limitations of "economic indicators", both in theory and practice, but also growing interest in the methodological problems involved in measuring social change and social development.

The purpose of this present section is twofold: first, to briefly review some of the historical background here in the United States of the concept "social indicator" and second, to outline eight major perspectives

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\* Webster's New World Dictionary

on or approaches to the concept "social indicator".

## Section A: Historical Background of Social Indicators

While interest in the potential utility of social indicators to facilitate social development in the LDCs is relatively recent, social scientists have long recognized the propensity of western nations to seek information to aid in national decision making. The recent interest in social indicators must be viewed both as an extension and as a reorientation of this tradition: as an extension in that the interest in social indicators has represented from the beginning an applied and pragmatic effort to generate social information that would assist in making social policy more responsive to social needs and social values; and as a reorientation, in that the interest in social indicators is but one of several recent trends representative of a gradual shift in the information premises underlying public policy formation, in which the primary preoccupation with national economic development is being extended to embrace a broader concern with total social development.

This shift in information premises has appeared at this time in history, in part, because of the economic successes of the industrial revolution, in which the productive capacity of affluent societies has allowed mankind to broaden the planning horizons of public policy to include a broader range of social and psychological goals and alternatives than had previously been relevant under less affluent conditions. The shift, however, also stems from a growing recognition that unrestrained pursuit of national economic goals without equal emphasis upon the social conditions also critical for human satisfaction and fulfillment, has resulted in economic development creating unintended consequences that are dysfunctional to overall human well-being. To a great extent, therefore, the recent interest in monitoring social change and in societal guidance has appeared as a reaction to the proliferation of social problems in modern urban-industrial society.

A number of activities undertaken by public and private agencies over the past two decades are indicative of this shift toward broader social planning. At the national government level, the Report of the President's Commission on National Goals (1960) for the sixties was but one of several activities which reflected this broadened social concern. Those scholars serving on the Commission were assigned the task of developing a "broad outline of coordinated national policies and programs" and to "set up a series of goals in various areas of national activity." The report of this Commission, Goals for Americans, 1960, outlined a number of domestic and international goals considered important to effective societal development and, certainly, goals that reflect a wide range of current social issues. The efforts of this Commission were renewed in 1969 by President Nixon's National Goals Research Staff (1970). The staff's report, entitled Toward Balanced Growth: Quantity with Quality, focused heavily on social issues and attempted to chart recent social trends as a basic step in establishing priorities for future growth. Both of these groups concerned with national goals and priorities are indicative of the current emphasis on a broader context of national planning.

Specific interest in the topic of social indicators was stimulated by research undertaken by the American Academy of Arts and Sciences for the National Aeronautics and Space Administration to determine the impact of the space program on American society. It was out of the work of Raymond Bauer and his colleagues, to develop techniques to assess the societal impact of the NASA program, and to develop methods for anticipating these effects, that the notion of social indicators as yardsticks to measure the societal impact of change took form. The book, Social Indicators (Bauer, 1966), grew out of the research effort for NASA and provided the basic statement of the need and potential use of social indicators in public policy formation, as well as some of the problems to be overcome in their development.

The notion of social indicators advanced by this group is clearly developed by analogy to economics. The basic thesis of the analogy suggests that since economic indicators have proven of value to economics and the development of economically relevant public policy, the development of social indicators should also prove of value to other social science disciplines and to the formulation of broader social policy. The primary thrust of this analogy has been to reorient national attention beyond simply the prospects of affluence toward the problems of affluence, and from primary concern with quantity toward a greater concern with quality in the social conditions of life in modern society.

This analogy from economics was extended even further by Bertram Gross (1965, 1966) during the mid-sixties through his proposal that an annual Social Report of the President should be undertaken to compliment the annual economic report. In 1966, the National Commission on Technology, Automation, and Economic Progress (1966) extended this analogy somewhat further by calling for some system of social accounts to assess the utilization of human resources in four areas:

1. The measurement of social costs and net returns of innovation...
2. The measurement of social ills...
3. The creation of "performance budgets" in areas of defined social need...
4. Indicators of economic opportunity and social mobility...

The terminology of these recommendations clearly indicate a tendency to visualize the development of social indicators within the framework of a logical system similar to managerial economics. The Planning-Programming-Budgeting System (PPBS) of the federal government, launched in 1965, has been advanced by many as the logical framework in which social accounting and social

reporting should be undertaken. Whether or not the PPBS system could provide the logical framework for this type of information system, it is clear that the early proponents of social indicator research had in mind the measurement of both input as well as output data which assess the quantities and qualities of public services. These data, in turn, would be built into a logical structure capable of assessing social costs and benefits and aiding in more balanced decisions in national policies and programs.

Efforts to implement some of these early proposals through the federal government were launched by President Johnson in March, 1966, when he commissioned the Department of Health, Education and Welfare to begin working on the development of the social statistics and indicators necessary for a social report (United States Department of Health, Education, and Welfare, 1969). Toward A Social Report, published by HEW in January, 1969, included summary data in seven areas of national public concern: health and illness; social mobility; physical environment; income and poverty; public order and safety; learning, science and art; and participation and alienation. Even though HEW's efforts fell short of establishing reliable social indicators or developing a comprehensive annual social report, it did signal, in a limited way, new direction in national planning and development.\*

Beyond the early work of HEW to lay out indicators for an annual social report, perhaps the strongest stimulant to the social indicator movement has been the discussions and hearings in regard to the "Full Opportunity and Social Accounting Act" of 1967 and the "Social Accounting Act" of 1969. These Congressional Acts, commonly referred to as The Mondale Bills (U.S. Senate, 1969),

\* The social indicator work within the federal Government of the United States has been transferred to the Office of Management and Budget, Bureau of Budget. The framework of the social indicator work has been revised and continues although hampered by limited resources.

provide for: 1) an Annual Social Report of the President, 2) a Council of Social Advisers to assist in preparing the social report, and 3) a Joint Committee on the Social Report to review the report and transmit its findings to Congress. Even though these bills have yet to become law (certainly with present resistance within the federal government to certain aspects of the bills, they may not become law in the near future) they have brought a great deal of national attention to the issues surrounding the general topics of social indicators, social accounting, and social reporting.

It has been within this broadening of the concept of national development to include areas of social concern often omitted from national planning in the past that the social indicator movement has arisen. However, while considerable optimism during the past decade has accompanied recognition of the possibilities of improved social planning and development through improved social reporting (or societal feedback), it has become increasingly apparent that these possibilities were more of a dream than a reality and that many methodological, conceptual, and theoretical problems will have to be resolved before a social information system can become a reality. In response to criticism of the movement, the attention of scientists seriously concerned with the possibility of incorporating social indicators into a social information system has shifted from simply attempting to sell an idea, toward more systematic efforts to delineate a viable perspective and a methodological strategy that will facilitate the development of social indicators as the foundation of social information systems.

#### Negative Effects of Social Indicators: A Note of Caution

The potential good to be derived from a system of social indicators and a methodology to collect and monitor them is great. However, often times ignored, consciously or unconsciously, are the negative effects which can occur to a society and the people of that society when more information is known about them and a central authority has greater access to their daily lives. This is

particularly crucial when dealing with governments who seek solely to maintain the status quo and preserve harmony between the rulers and the ruled. Knowledge resulting from the work of the Social Indicator Project could be very useful to this end. Governmental control of the population might be expanded and social systems needing developmental change could be made more rigid and inhumanitarian.

Those creating and disseminating knowledge must take some responsibility for the effects of this knowledge. At minimum, the possible negative effects that could occur must be anticipated and avoided. Social indicators are a double-edged sword and, as such, it should not be assumed that "social indicators" per se are only for the good, forgetting or ignoring this potential for evil.

## Section B: Social Indicator Perspectives

That no one widely agreed upon or commonly accepted definition of the concept "social indicator" has yet emerged explains, in part, why past legislative proposals calling for an "Annual Social Report of the President" and a "Council of Social Advisors" remain exactly that: proposals! In other words, the possibility of a social information system which incorporates "social indicators" as the integral feedback component has proven to be a much more difficult task than had first been imagined. The essence of the problem is humorously reflected in the title of an article by Leonard Duhl (1967) for the American Academy of Arts and Sciences, when he writes:

"Planning and Prediction: Or What to do When You Don't Know the Names of the Variables."

Seriously, however, the lack of specific criteria and consequent difficulty in delineating the social phenomena which social indicators should measure and monitor is a source of constant frustration for those engaged in social indicator research. In part, this lack of criteria follows from the fact that the social sciences do not yet have a general social theory or model which is capable of specifying the variables crucial to desirable social progress and social development. And, to the extent that such terms as social progress and social development remain inadequately defined, or to the extent that action programs do not clearly specify the social goals of social development, no clear criteria exist by which to delineate the social phenomena which social indicators should measure and monitor. Consequently, the term "social indicator" itself remains hazily defined; like many concepts in social science, the concept "social indicator" is an elusive one.

Nevertheless, though an elusive concept, various perspectives on the concept "social indicators" have emerged. These perspectives can be classified into approximately eight alternative perspectives on or approaches to social indicators. In order to facilitate an understanding of these perspectives or approaches and, thereby, an understanding of some of the fundamental issues which confront social indicator research, the eight approaches will be discussed in the following order:

1. The Descriptive Reporting Approach
2. The Program Evaluation Approach
3. The Societal Control Approach
4. The Social Problems Approach
5. The Social Goals Approach
6. The Quality of Life Approach
7. The Viability (or Minimums for Social Survival) Approach
8. The Social Systems Approach

1. The Descriptive Reporting Approach

Most simply defined, a descriptive reporting approach to social indicators calls for the acquisition, analysis (e.g., summarization), and communication of information about the current state of societal conditions. In the face of a complex and continuously changing environment, societal managers require information, that is, feedback, on the positive and negative consequences of their actions (e.g., policies, programs, etc.), in order to know whether these actions need to be modified to more effectively achieve desired objectives or, possibly, whether previously redefined objectives or priorities need to be redefined. Thus, a society requires an information system to provide feedback on the society's performance in achieving social objectives. In effect, such an information system might operate or function somewhat like the national income accounts and other economic indicators (e.g., the Dow Jones Industrial Average) which currently provide feedback on the performance of the U.S. economy, with the information being fed back into the economy in a

variety of ways and at various levels, including over the nightly network news telecasts, thus being available not only for decision making by high-level government officials in the public sector and corporate executives in the private sector, but also for decision making by the citizen who (1) votes (or doesn't vote) on election and policy issues; and (2) must manage whatever resources are at his or her disposal in order to achieve individual and family objectives.

Methodologically, implementation of the descriptive reporting approach would require development of the appropriate statistics, in order that the indicators be representative of general societal conditions and not just illustrative of isolated incidents. Underlying methodological questions, however, is an even more important question of exactly what the substantive nature of the statistics would be. In other words, if information is to be acquired, analyzed, and communicated, the question immediately arises: Information about what? Indeed, in attempting to answer this question, the perhaps even more crucial question arises: If it is not clear exactly what information is required, then what criteria would one use to specify the relevant information that would constitute social indicators?

In short, the descriptive reporting approach, as defined above, raises more questions than it answers. While other approaches to social indicators, such as those to be discussed below, provide alternative answers to some of these questions, the descriptive reporting approach does highlight the ideas of acquisition, analysis, and communication of information about the current state of societal conditions, ideas which, if not explicitly stated below as part of other approaches, generally can be assumed to be common to all.

## 2. The Program Evaluation Approach

While the first approach to social indicators, that of descriptive reporting discussed above, views social indicators as purely informative in nature, without clear specification of what the relevant information would be that would constitute the social indicators, the program evaluation approach would utilize social indicators as descriptive reporting which aids in assessing the effectiveness and/or efficiency of a particular public policy and/or set of programs. The economic analogy enters here with the assumption that a valid and reliable system of social indicators would provide the necessary feedback component (i.e., data base) necessary to establish a social accounting system which would enable societal managers to measure social costs and returns in somewhat analogous fashion to cost-return analyses on the microeconomic level or the national income accounts on the macroeconomic level. Similarly, a system of social accounts based on social indicators would measure both social gains (e.g., reduction in suicide or crime rates) and social costs (e.g., increased use of methadone) in relation to specific publicly- and/or privately-supported programs implemented with the objective of achieving some desired goal or set of goals. In this context, the program evaluation approach would employ social indicators as objective measures of the program's relative success or failure in reducing social costs and increasing social gains.

However, a principal shortcoming of the program evaluation approach, as defined above, is the set of methodological problems involved in objectively establishing to what extent a particular micro-level program is actually responsible for, i.e., produces or causes, any observed changes in social conditions at the macro-level.

The significance of this methodological obstacle is even more apparent on consideration of the principal alternative to the micro-level program evaluation approach, namely, the macro-level "societal control" approach to social indicators, discussed below.

### 3. The Societal Control Approach

The societal control approach to social indicators would provide sufficient knowledge and information, at least in terms of the descriptive reporting and program evaluation approaches discussed above, to enable planned societal control and social change. Here, social indicators are envisioned as the feedback mechanism by means of which society would be controlled and social change directed. Of course, the obstacles involved in implementing such an approach to social indicators include not only those methodological problems previously discussed with respect to the descriptive reporting and program evaluation approaches, but also the related ethical questions of who will do the planning for whom, who will control and whom be controlled, and in what direction would social indicators direct social change. These ethical questions specifically relate to such issues as the desirability of national data banks when these are perceived or felt to be an invasion of privacy. Such questions bring to mind the thought that the utilization of a system of social indicators, if not already the first step toward, might nevertheless inevitably lead to a state or condition of society such as those images provided by such novelists as George Orwell in 1984 or Aldous Huxley in Brave New World.

However far off in the distant future or immediately here in the present such a social condition as "Big Brother is Watching" might be, there are unquestionably many other problems which also cry for man's

attention. And it is precisely the criteria of "problem" that provides the focus of the "social problems" approach to social indicators, discussed below.

#### 4. The Social Problems Approach

The social problems approach to social indicators, simply put would utilize social indicators to alert societal managers and, in general, the population to social problems which demand amelioration. While the descriptive reporting and program evaluation approaches are relevant to this approach, a key underlying assumption is that if a society had a valid and reliable system of social indicators to inform the population, either decision makers would remedy the ill or, indeed, the ill would not even come to pass, since warning signals, analagous to economic lead indicators, would be recognized sufficiently in advance to permit preventative measures to be taken to head off the problem with appropriate constructive action.

Hand in hand with this crucial assumption there is also a potential pitfall in that the social problems approach, as defined above, assumes a rather mechanical concept of a system of social indicators which is a foolproof, fail-safe early warning system that would provide adequate feedback to trigger the necessary societal response, on the part of decision makers at all levels, to effectively counter and provide constructive alternatives to any undesired developments, whether foreseen or actually present. Additionally, the social problems approach, as discussed above, fails to provide a specification of exactly what the criteria are that one would use in answering the question: What are the social problems? Indeed, as social problems are not problematical

in and of themselves but rather are only problematical for people, at least one other question must be asked: For whom is the social problem really a problem? Finally, looking at this approach in perspective, the social problems approach is somewhat of a negative way to approach social indicators, a sort of "what's wrong with society approach" and, as such, is clearly contrasted by an alternative approach, namely the "social goals" approach to social indicators discussed below.

#### 5. The Social Goals Approach

If the social problems approach to social indicators may be described as a sort of negative way to approach social indicators, a lyrical "eliminate the negative" approach, then it is sharply contrasted by the "accentuate the positive" refrain of the social goals approach. In part, the social goals approach reflects an orientation to the "future" and a concern among scientists for "future planning", this orientation perhaps being best illustrated in a series of articles published in the late 1960's in a volume titled, Toward the Year 2000. In larger part, however, the social goals approach tends to view social indicators as tools to monitor progress toward goals. This perspective suggests the need to specify goals and to generate indicators capable of monitoring the various social dimensions inherent in such goals.

The social goals perspective has been expressed in two different ways in current literature. One way has been to focus on nationally articulated goals of a general nature, such as those produced by the National Goals Research Staff, and to generate indicators expressive of those goals (Biderman, 1966; Stanford Research Institute, 1969; Terleckyj, 1970; Harland, 1971). In the early 1960's, President Eisenhower set up a commission on national goals. The commission's objective was to

specify a set of general guidelines to be used for coordination of national policy, programs, and relatedly, to estimate goals in various areas of national activity. It is crucial to note that while the commission originally outlined 11 general goals, another look at this question some six years later delineated 81 specific subgoals and attempted to identify appropriate indicators that would permit measurement of whether the various goals and subgoals were being achieved. The principal investigators, however, were able to pinpoint relevant indicators for only 48 of the 81 subgoals, i.e., there were 33 goals for which no appropriate indicators (i.e., data) could be specified. In short, goals were being established at the national level, yet no one had fully developed the total set of indicators necessary to assess progress.

Another expression of the social goals approach has been to focus on the specific goals of agencies and programs (U.S. Department of Health, Education, and Welfare, 1969; Vestermark, 1968; Bank of America, 1971; and the recent establishment of the Societal Analysis Activity in General Motors) and to generate indicators that are of direct normative interest to persons responsible for decision making within these agencies. The HEW (U.S. Department of Health, Education, and Welfare, 1969:97) for instance, has defined social indicators in the following manner:

A social indicator, as the term is used here, may be defined to be a statistic of direct normative interest which facilitates concise, comprehensive and balanced judgments about the conditions of major aspects of a society. It is in all cases a measure of welfare and is subject to the interpretation that, if it changes in the 'right' direction, while other things remain equal, things have gotten better, or people are better off!

The problem, of course, which the social goals approach encounters is basically not the admittedly difficult task of developing adequate indicators; indeed, some of the difficulties involved in this regard have already been reviewed above in the discussion of other approaches to social indicators. Rather, the basic problem is indecision in regard to what the social goals of the U.S. or of any other particular nation should be. In the absence of a consensus on the appropriate social goals, the notion of social indicators as statistics of "direct normative interest" has been most strongly questioned, for it is not clear whose normative interest will be served, i.e., which social goals will be pursued, who will determine these goals, and which indicators are to be developed. To be sure, a decision in this regard is not one that a society should negligently leave for a "self-serving" elite to make. Nor would such a decision be wisely made if action were taken toward specific goals without adequate knowledge of and appropriate measures to insure or minimize against undesired consequences. In this respect, a social goals approach to social indicators should minimally include measures by which a society could determine whether actions taken to achieve one set of desired goals did not, at the same time, also jeopardize achievement of some other desired goal or set of desired goals. In short, whatever approach is taken to social indicators it is reasonable that the approach should minimally permit delineation not only of whether a particular activity is or is not achieving a desired goal but, also, what other effects, negative and positive, are occurring as a result of the activity.

In contrast to the somewhat negative and positive approaches to social indicators evidenced in the social problems and social goals approaches, respectively, another somewhat neutral approach has emerged, namely, the "quality of life" approach to social indicators, discussed below.

#### 6. The Quality of Life Approach

The quality of life approach to social indicators is a somewhat more neutral approach when compared to the social problems and social goals approaches, in that it proposes that social indicators should focus on and measure the "overall social welfare" or "quality of Life". The primary thrust of the quality of life approach to social indicator research has been toward developing a "quality of life" index or system of social indicators which reflects the social well-being of society in "quality" areas of trans-economic concern: e.g., housing, education, health, public safety, transportation, etc. The notion of a "gross social product" (Fox, 1971) is illustrative of this type of research. A second type of research often associated with the quality of life approach to social indicators research focuses more on the problem of measuring relative standards of living.

While the quality of life approach provides one answer as to where to begin, a question left unanswered by the descriptive reporting approach, the quality of life approach fails to provide an answer to the question of where to stop. No criteria are provided as to how many other areas are implied as relevant by the etc. above. Indeed, the normative implications and inherent inability to adequately specify the meaning of the term "quality of life" renders it relatively useless as a basis for delineating social indicators of high utility to

public policy. Perhaps more important than this shortcoming, however, are several other pitfalls also evidenced by the quality of life approach.

First, even though there is little doubt that "quality of life" is a universal goal of mankind, there is also little doubt that few, if any, living human beings would agree on just what it is that constitutes "quality of life". Moreover, and perhaps following directly from the national goals approach to social indicators, the quality of life approach implicitly assumes that, in general, more is better; that is, the approach tends to assume that a society's members should share in an increasingly "higher" or "better" quality of life. Yet, the desirability of such an assumption has increasingly come into question, especially with the negative consequences (e.g., air pollution) which have accompanied the U.S.'s so-called over-development. In short, it is not always clear that "more" is "better".

Second, in attempting to define "quality of life", the question has arisen whether a set of appropriate social indicators should also include measures of people's subjective concerns, e.g., their values, attitudes, opinions, etc.; certainly, what may be "quality of life" for one may be quite something else for another. Individual perceptions of quality of life and social aspirations arise from situationally specific experiences which vary widely throughout society and may change rapidly through time.

Finally, that the quality of life approach proposes that social indicators should measure the "overall social welfare" in some particular "quality" area implies that the area focused on is one of direct normative interest, i.e., it is an area which is of immediate concern.

Yet, in attempting to develop a meaningful set of social indicators, there is no guarantee that what is of normative interest today will still be relevant tomorrow, five years from now, ten years from now, or at any time in the future. Poverty, for example, wasn't much of an area of broad societal concern and normative interest until it became socially-defined by the print and electronic media as a social problem.

In short, not only is it difficult to find any high degree of consensus concerning quality of life standards and goals; moreover, a quality of life approach to social indicators may prove to be of short-run value to the extent that social indicators developed along this line need to be constantly reformulated as normative interests shift through time, rendering long-run trend analysis through the accumulation of time series data virtually impossible.

It is perhaps this last shortcoming that has prompted a somewhat alternative approach, namely the "viability" (or minimum for social survival) approach to social indicators, discussed below.

#### 7. The Viability (or Minimums for Social Survival) Approach

The viability approach to social indicators takes as its fundamental assumption that the basic problem of all species, human society included, is survival. Peter Corning (1971:2), for instance, has argued that the most basic goal of both the individual and society is human survival, and that there is a range of universal needs that must be fulfilled in any social group if mankind is to survive. He, therefore, has called for the development of a "survival" or "viability index" that is capable of monitoring the minimum and requisite conditions

of human existence. This index would assist in assessment of how well a social group is meeting the basic life needs of its members. Even though Corning is more concerned with human viability or species viability, it stands to reason that social organizations also have certain organizational requisites that must be met if an organization is to survive, and that an index of organizational viability may also be needed.

The reference above to human society as a species reflects the viability approach's assumption that society is somewhat like a biological organism which, of course, requires certain minimums for survival. Indeed, this analogy to the biological organism complements a closely related approach, namely, the "social systems" approach to social indicators, discussed below.

#### 8. The Social Systems Approach

One of the major criticisms of current social indicator efforts is that they are producing unrelated statistics that may tell us something about the relative well-being of society's members in certain areas of societal concern but fail to provide adequate information on interrelationships between societal phenomena, necessary in order to make balanced decisions concerning needed inputs and programs. As a constructive alternative, Land (1971) has proposed, by analogy to economics, that social indicators are components or parameters in a social systems model and should specify the interrelationships among variables important to achievement of policy objectives; can be collected at various points in time and accumulated into a time series; and can be aggregated and disaggregated into desired levels of analysis, according to specifications in the model. Land has further proposed that

social indicators should be developed within an institutional framework capable of assessing inputs, transformations, and outputs of major institutions. Here, it has been suggested that models of social institutions are possible, just as economic models have been constructed of economic institutions. In this regard, Land cites the well-known study of social mobility by Blau and Duncan as one example of the effective use of the systems approach. This study drew heavily on path analysis as the methodological technique of demonstrating weights and interrelationships. Bertram Gross has also outlined a highly generalized conceptual model of a social system which was utilized by James Anderson (1971) in the study of health practices among one ethnic group in the United States. The Anderson study also utilized the path model.

The systems perspective is not free of problems. For instance, the social sciences do not yet have an established theoretical model of social systems capable of generating the needed range of empirical models. For this reason, it is likely that models will be developed largely through an inductive process employing statistical modeling techniques. In the Russell Sage Foundation document, Toward Social Reporting: Next Steps, Duncan (1969) has especially argued for an inductive approach to the development of social indicators, and has suggested the replication of earlier base studies as a basic tool to improve ability to measure change. Others have proposed strategies of model building through the application of mathematical and econometric techniques such as scalar models (Fox and Van Moeseke, 1972), and social policy models through the application of the economic policy model of Tinbergen (O'Connell, 1972), linear programming (Heady, 1963), and social prediction models using simultaneous equation

models (Blalock, 1969) and Markov chain Models (Coleman, 1964).

Nevertheless, while there are yet problems to be ironed out, the social systems approach definitely has the advantage of shifting attention from arbitrarily imposed normative goals toward the formulation of policies consistent with the effective operation of a social system. Additionally, in relation to the desirability of social indicators which are aggregateable and disaggregateable, the systems perspective can be utilized at a variety of levels of analysis, ranging from general models of large scale systems to specific models related to a single dimension of social life, with the modeling process itself providing a basis for establishing the relative weights to be given to various components in the system, which should aid in establishing policy priorities.

### PART III: PERSPECTIVES OF SOCIAL DEVELOPMENT

The "state of the art" of social indicator research is clearly in an exploratory and experimental stage of development. While the choice of a specific methodology in the exploratory phase of research is usually reflective of the researcher's unique preferences, the scientific utility of the methodology chosen to answer the particular research question under consideration is normally determined through the research process. In Part II of this report, some of the conceptual or definitional problems involved in social indicator research were discussed. Though a new area of research, such as social indicator research, initially develops through a process of trial and error, actual trial and error can be minimized by building on the research experience of previous efforts of others. Thus, the review of social indicator research, undertaken as an integral part of the preparation of this report precisely to insure that this project does build on the research experience of previous efforts, has provided considerable insight concerning the strengths and weaknesses of the various alternative perspectives on or approaches to the concept "social indicator". More importantly, however, particularly at the present stage of this project's development, the review of social indicator research experience has brought to light that the specific objective of this project, the development of a methodology to assist the LDCs to generate an information system which includes indicators of social development, requires that the domain of social indicator research must be sufficiently broadened to include the problems involved in specifying an appropriate operational definition of the term "social development".

To date, very little attention, within the social indicator effort, has been directly focused on the problem of operationally defining "social develop-

ment". An examination of development literature indicates that while some efforts have been made to define social development, scholarly and scientific discussions of development and development programs generally focus on only a narrow range of societal phenomena and development goals, respectively, with little agreement evident on comparison of specific definitions. Definitions of "social development" focus on a wide domain of societal and human concerns, including such factors as: "improved incomes and conditions of life"; "some rights to control their personal destinies"; "more efficient forms of social organization"; "more complex, technologically advanced, rapidly changing life styles"; "improved life chances"; "fulfill human wants and needs"; "development of true individual potential"; etc.

Of course, any one of the cited definitions could be arbitrarily selected as the definition of "social development" and social indicators developed to measure that aspect of development prescribed by the definition, since indicators are a kind of gauge or yardstick which more or less reflect some aspect of a phenomena about which more information is desired. Moreover, such definitions of social development as cited above clearly reflect unique value judgments on the part of the definer which may or may not correspond to the values of a particular developing nation. Thus, two conclusions of crucial importance to the success of this project emerge from the above premises. First, the particular definition of "social development" chosen will prescribe the type of indicators of social development required. Second, unless the particular definition of "social development" chosen corresponds to or is in consensus with the definition of social development held by the developing countries, there is little hope of generating social indicators which are of value to and which can be used by these countries in their development efforts.

The first section in the Part III of the report is devoted to an analysis of the concept "social development". The specific objective of this analysis

will be to identify a perspective of social development that can serve as a useful guide in generating indicators of social development. Thus, Part IV focuses on the preliminary outlines of a general methodology or logical framework for the identification and measurement of indicators of social development.

### Social Development

Scholarly concern for human progress and development is not new. The pages of history are filled with philosophical discussions of the nature of human progress. Recent history, however, is somewhat unique in the extent to which man has consciously attempted to determine the direction and content of social development. The evolution of civilization has, for the most part, taken place as a trial and error process of natural evolution unencumbered by human planning or design. The twentieth century, however, especially since World War II, has produced an increasing emphasis on human interference in the processes of social change through development planning and societal guidance. The development activities during this period have been directed largely toward increasing man's ability to more effectively guide society toward desired human ends.

In his recent book, The Active Society, Etzioni (1968) reflects the apparent mood of many intellectuals, government administrators, and social scientists who have expressed concern with the problem of societal development. In this book, "the active society" is described as one that is master of itself, in that it actively gains self-control and realizes more fully its own values. This society is especially depicted as one that is responsive to its changing membership and engages in intensive and perpetual self-transformation. Similarly, in view of the purposive, consciously applied, and programmatic nature of planned development activities, the "development" concept itself

inevitably refers to a normative process of societal pursuit of humanly defined social goals. It is precisely this normative dimension of development, however, that has sparked the extensive debate and disagreement which have clouded an understanding of social development. The reason for this controversy arises in large part from the inability of societal managers to formulate social development goals on which they commonly agree. Indeed, this inability to formulate collective or social goals reflective of a society's values greatly increases in complex, heterogenous societies.

The lack of consensus on social goals arises, in part at least, because human aspirations and values concerning desired social conditions are generally reflective of the experiences and needs that are encountered in the unique historical and social conditions under which individuals live out their lives. These conditions vary widely from country to country and among subgroups within societies, resulting in wide divergences in vested interests, values, and goals among a population's subgroups. It is, therefore, highly unlikely that any single evaluative standard or index of development will be found that has universal acceptance or applicability; development is inevitably normative.

Because of the inevitable normative character of development, the first question which must be asked of any definition of development is: "In formulating the definition and goals of development, whose value priorities have been taken into account?", for example, those of the scientist, the external change agent, the government, the population or a particular subgroup of the population, etc.? In turn, a second question must also be asked of any theoretical construct, model, index, indicator, or program proposed for scientific analysis of development: "In formulating the measurement of the level of development, whose definition (value judgment) of development is taken into account?" Since value judgments and value priorities inevitably influence development activities in any country, some of the major sources of values which influence the definition of development and specification of development goals are worthy of brief

attention.

### Economic Development

The major focus of development activities since World War II has clearly been economic in nature. Underlying this emphasis on economic development has been the view that economic change is a social goal widely shared in human society and, that through economic growth, other social values such as health, education, and reduction of poverty would be attained. Though not always intended, the emphasis on economic change which has played such a major role in development efforts reflects a theory of economic determinism. For the economic determinist, the economic institutions of society are the principal or prime source of social change. Changes in all other social institutions represent nothing more than adjustments to prior changes in the economic institutions on which they are dependent for their very existence.

The terms "developed" and "underdeveloped" (or "undeveloped") are clearly defined by such economic criteria as differentiation, industrialization, and economic productivity (GNP). A nation is "underdeveloped" if it has not emulated the complex productive processes and productive capacity of so-called "developed" economies. It has been found that nations can be fairly easily ranked on a continuum from "least developed" to "most developed" using an aggregated index of GNP and its socio-economic correlates (McGranahan, 1971). However, by using a different set of indicators of development, the rank order obviously would change significantly. For instance, economic development has not always been accompanied by a decrease in social problems such as crime, suicide, mental illness, drug use and violence. In fact, the reverse is often the case.

The recognition that economic development efforts have not progressed to the extent desired has fostered increasing disenchantment with the narrowly

defined economic approach to development. Most simply put, the developing countries have not been developing satisfactorily; even where changes have occurred, they have often carried with them additional social problems and strains.

### Enter Social Development

A major explanation which has been suggested for the relative lack of success of recent development efforts is that human and social factors have been neglected in development policy and planning. That more emphasis in development planning should be given to these non-economic factors is generally recognized; however, considerable disagreement continues to exist concerning the way in which human and social factors should be taken into account. Three separate trends are clearly recognizable.

The first trend is evident in the recent emphasis on the concept "human resource development" or "human capital". The emphasis in this view is that human factors are additional resources to be considered in economic development planning. Considerable discussion has centered on education as a human resource, on health as a human resource, on manpower as a human resource, etc. These social factors have come to be seen as essential inputs to national production. For many observers, the incorporation of social factors as inputs to national production constitutes the "integration" of social and economic development. It should be noted, however, that this view of social development does not constitute a change in development strategy or goal, only a sophistication in the analysis of economic inputs.

The emphasis on human and social factors as resources has, of course, deepened our understanding of constraints they impose on economic development. Considerable research, for example, has been undertaken in the study of human motivation and the way in which traditional value orientations constrain economic development. In turn, the structural constraints of traditional societies have

been extensively discussed; in some cases, strategies have been developed to ease such constraints. Certainly, a number of social indicators of human resource development have now been suggested that might be considered from this type of economic perspective as indicators of social development.

However, a second perspective on human and social factors in development suggests that to consider these elements as inputs and constraints is not enough. Equally important is the impact which economic development has on other societal institutions either directly or as an unintended consequence. Economic development often sends out reverberations that affect a wide range of cultural patterns and social values such as settlement patterns, family patterns, human relationships, religious beliefs, and socialization patterns.

The impact of economic development on the larger society has been discussed in two ways in recent literature. The first is more concerned with the contribution economic development makes to the standard of life of individuals and the equity with which the costs and benefits of economic growth are distributed. The indicator research undertaken by UNRISD over the past few years is illustrative of this approach. The UNRISD research group has established a level of living index of various developed and underdeveloped nations. Similarly, Adelman and Morris used factor analysis to delineate a set of comparative socio-economic indicators that reflect this type of inequity. Most of the research studies classified as "quality of life" research in the United States similarly focus on the distribution of life chances as well as on the products of economic growth.

The problem with "quality of life" research is that it depends on post facto data which reflect the past and current styles of life available within a specific country or a comparative index of life styles in several countries. Too often, "quality of life" indexes include trivialities such as the latest gadgetry of industrial production. For instance, a recent report released by one United States government bureau described the increase in the "good life"

in the United States in terms of such items as the average number of automobiles, TV sets, and other appliances. There is little doubt that the distribution of life chances is an important area of social indicator research; however, the problem of limiting indicators to the really important aspects of social life has proven to be a difficult conceptual problem.

The second way in which this concern with the human and social impact of economic growth has been manifested has been in the growing recognition in technologically advanced societies that unrestrained pursuit of economic growth, without equal emphasis upon other social conditions, has resulted in unintended second, third, and fourth order spin-offs that are sometimes dysfunctional to overall human well-being (environmental deterioration; urban blight; crime and violence, etc.). In developing countries, the past two decades have kindled a strong commitment to the planning of programs designed to overcome or escape hunger, disease, poverty and injustice through economic growth. At the same time, these nations are seeking to accomplish national development without either suffering the consequences or side effects that have plagued industrial development in economically advanced countries or losing crucial spiritual and cultural values.

There is little doubt that indicators should be developed to monitor the positive and negative aspects of economic growth. There is a special need to more accurately assess the distribution of both the costs and benefits of economic expansion. On the other hand, there is still a question whether these criteria offer an adequate definition of social development. Clearly, the goal of development remains the same, and the human and social factors continue to be viewed as inputs, constraints, and/or side effects of economic growth. Yet while health, education, and other aspects of human welfare may be a means to economic ends, they are also ends in themselves. Accepting this as true, then why should these factors not be part of the definition of development itself, not just part of the inputs (means) to, constraints on, and/or by-products of

development.

A third perspective of social development, therefore, places emphasis on balanced change of total societies in some humanly desirable direction in which human concerns are viewed as social goals of development to be optimized along with economic growth. This perspective is built on the assumption that a society is a system of interrelated social patterns in which progress is dependent on complementary change throughout society. The analysis of development must include not only both the structural transformation necessary for social change, but also the valuative assessment of the repercussions which these changes have throughout the system. The social systems perspective of development, however, does not eliminate the normative problem in development planning. Indeed, those models of societal development which have been proposed invariably contain normative biases. Brief consideration of the normative content of some of these models of societal development should help to clarify the role of values in development.

#### Ideological and Utopian Models of Development

Quite unlike the current concept of economic development which is usually defined in part as an economic process (e.g. increase in GNP; increases in real income; etc.); social development is too often defined ideologically or in terms of some final utopian state. The current struggle between and among religious, communistic, and capitalistic ideologies which plague most developing nations is illustrative of the way in which variant ideological considerations enter into the definitions of social development. Even within the social indicator movement, there has been a tendency to define social development in terms of such notions as an ideal type construct of "quality of life" or in terms of a humanitarian ideal of equality and classlessness. In view of this persistent influence of ideological considerations on the definition of development, some combination of ideological values will undoubtedly play a role in any development effort. It therefore becomes crucial that development planning

specify what these value preferences are and how they influence the outcomes of programs.

To raise the issue of ideological considerations in development is not to suggest that they are undesirable or should be eliminated, since ideologies and values are normal to human social existence. The point to be emphasized, however, is that the goals and priorities of development cannot be defined, specified, or determined by constructing scientific measurement instruments. Rather, to be useful in development, measurement instruments or procedures must reflect not only national objectives and values, but also their hierarchical ordering of objectives. Henriot (1970), for instance, has argued that the very process of developing indicators is value-laden; their very definition reflects sociopolitical values. Therefore, as Sheldon and Freeman (1970) have suggested, what may be viewed in the context of one social system as a startling change in a particular indicator might be regarded as a change of only modest interest when viewed in the context of a different social system. They argue further:

It would be foolish to argue against the use of indicators in program planning and development, or to expect their employment to disappear as a means of influencing politicians and their electorates. But it is naive to hold that social indicators in themselves permit decisions on which programs to implement, especially that they allow the setting of priorities. The use of data to make a case either already decided on other grounds or one that inevitably is going to be determined by political rather than 'objective' considerations--whether or not it is in a good cause--is a weak basis for the indicator effort. Priorities do not depend on assembled data. Rather, they stem from national objectives and values and their hierarchical ordering. (1970:99)

It therefore becomes clear that the essential first step in generating indicators of social development is that of clearly articulating development objectives and goals. Unless national development objectives are clearly specified in policy statements, there is no guarantee to insure that the researcher will generate indicators that will measure whether a society

(e.g., a developing nation) is progressing toward its social development goals and objectives. Thus, it is increasingly recognized that close cooperation between societal decision makers and scientists is an essential condition if social indicator research is to facilitate LDCs in moving toward their social development goals and objectives. If social indicators are to be conceived as components in an information system designed to assist in the formulation of public policy, then some understanding of policy issues in terms of clearly articulated development goals and objectives, along with the underlying values and priorities upon which policy will largely be determined, is an **essential** first step in the development of relevant social indicators.

Comparative Models of Development: Scientists have constructed a number of theories of development which, though generally proposed as the product of value free science, are nevertheless normative. Most theories or models of development, currently in use in the social sciences, tend to draw on some type of comparative analysis between an economically advanced, socially differentiated society, and the more integrated, less economically developed society or region. The basic model of development underlying these theories is an ideal type construct patterned after the structure, processes, and personality types found in urban-industrial societies. Too often, development programs have been launched to implement this model in some developing country without fully recognizing the implications which these value biases have for, or the impact such programs will have on, the cultural patterns and social forms predominant in that country.

Additionally, such development programs are ethnocentric, assuming either that the way of life of so-called modernized societies represents the best of all possible worlds, or that development is a unilinear process culminating in urban-industrialism. There is little doubt that the unrestrained

implementation of development strategy based on such ethnocentric assumptions is basic to the ill will and tension that modern development efforts have stimulated in so many developing countries.

Like the utopian and ideological models, comparative models of development are concerned with the "end state" or "final state" of development. The goal of development projected by modernization theories, for example, is that of emulating the experience of economically developed societies.

Eisenstadt, a leading modernization theorist, is quite explicit:

Historically, modernization is the process of change towards those types of social, economic, and political systems that have developed in Western Europe and North America from the seventeenth century to the nineteenth and have then spread to other European countries and in the nineteenth and twentieth centuries to the South American, Asian and African continents. (1966:1)

It is clear from this statement that, even admitting the possibility of different "routes", there is one "destination". The pattern of modernization is generally characterized as a particular type of development which is urban-industrial-capitalist. As Nettl (1967:193) has pointed out, ". . .the methodological approaches of Western social and political scientists . . .often assume that developing countries are infant or deviant examples of the Western experience and can be studied in terms of a shortfall from a norm." When the modern type becomes the ideal model in an evaluative as well as a conceptual sense, then deviations from the norm can be labeled as sociopathological. While indicators of development are clearly evaluative, if developed around modernization theories, they will not only tend to measure the extent to which developing countries conform to this ideal, but will also reflect non-modern aspects of developing societies as deviant forms and social ills.

There has been a persistent tendency among modernization theorists to see a convergence of social forms under the influence of industrial growth which leads toward a common world culture (Inkeles and Bauer, 1959; Moore, 1955; Rose, 1958). The essential idea underlying the notion of a common culture

is that a commercial-industrial system imposes certain organizational and institutional requirements not only on the economy, but also on many other aspects of society. The theory of structural constraints, in turn, rests on a conception of close functional interdependence of the components of social systems.

Modernization models of development rest upon assumptions rarely made explicit. Moore, for instance, notes:

By exclusive attention to societies "in transition" students of economic development implied a preceding, traditional stage and a succeeding, industrial or advanced stage. The premodern stage was taken to be essentially static, the social structure persisting through a balance of interdependent forces and actions. Even more unrealistically, the fully modernized society was also taken to be static, though this assumption had to remain implicit because of its patent falsity. Despite the "patent falsity" of modernization models of development, these models have enjoyed a wide popularity which stems, according to Moore, from their utility. Now what is initially interesting and instructive about this approach is not its crudity but its utility. By concentrating on the manifold sources of contemporary evidence, by formalizing the kinds of structural changes to be expected from changes in so essential a societal feature as its system of production, scholars have compiled an impressive list of predictive principles, along with a partial accounting for variations. (1965:14)

Needless to say, if modernization is articulated as the paramount goal of a developing country, the problem of generating indicators of development is greatly simplified for, as Moore suggests, this type of comparative analysis has already compiled an impressive list of contrasts in social forms between "so-called" modern and traditional societies.

Modernization theory, however, is falling into disrepute precisely because the basic assumptions have not proven valid. Even though economic development has produced convergence in certain areas of social concern, the development experiences of the past two decades reveal a great deal of divergence in certain basic aspects of developing and developed societies. It is now clear that the similarities or common culture assumed to exist among traditional societies and, similarly, among modern societies is, after Moore, 'patently false'. In turn, neither traditional or modern societies are as

static as these models suggest.

Along with modernization theories of development, the deterministic nature of economic development has also been called into question. Blumer, for instance, argues:

I think the evidence points clearly to the conclusion that industrialization, by its very make-up, can have no definite social effect. It is neutral and indifferent to what follows socially in its wake. To attribute specific social effects to it is to misread its character; to seek in it the causes of specific social happenings is to embark on a false journey. (1960:9)

Similarly, Smelser has emphasized the variability which occurs in the development process. He suggests: "It is virtually impossible to discover hard and fast empirical generalizations concerning the evolution of social structures during economic and social development." (1963:106) Smelser suggests that the process of **structural change** progresses through processes of structural differentiation, integration, and social disturbance, the particular trajectory of structural change being multilinear and divergent rather than unilinear and convergent.

As a model to guide the generation of indicators of social development, modernization theory seems weak on two counts. First, even though comparative models appear highly useful in identifying variant properties in traditional and modern societies, these models provide an inaccurate picture of the change process. Second, even though the model of modern societies may be accurate pictures of modern societal structures and processes, when applied as an ideal development model for developing societies, it constitutes a pill of ethnocentrism that developing societies may find quite distasteful and hard to swallow given their value priorities and needs.

Adaptive Models: In an effort to avoid the ethnocentric biases "final state" or "ultimate goal" determinism assumed by the modernization models, students of development have increasingly turned to articulation of adaptive models of social development. An adaptive model views social development as an evolutionary

coping process in which the developing country's social system attempts through societal management to increase the effectiveness of the social system not only to fulfill the social values of the members of the social system, but also to meet their basic human needs. From the standpoint of adaptive models, the effectiveness of a social system is assessed in terms of its adaptive capacity to extend its control over contingencies in its environment which are problematic to the system's viability in fulfilling social values and in meeting human needs. Thus, social development can be defined as a process of "adaptive upgrading" in which the developing society increases its control over problematic contingencies in its environment.

It should be noted that models which emphasize development as an adaptive process are no less normative than the modernization models discussed earlier. The difference, however, lies in the locus of values. Modernization efforts have too often resulted in the imposition of external values on developing societies; the adaptive model, however, places more emphasis on fulfillment of social values internal to the society in addition to meeting basic human needs. It is this type of social development that Etzioni (1968) had in mind in describing the "active society" as one that gains self-control and realizes more fully its own values. The "active society" becomes a reality for a given society, however, only to the extent that the society in question is responsive to the human needs and social values of that society's members.

#### Divergent Paths to Development

Development in each society is situationally unique, depending on system adaptation through societal management. Each society must cope with its unique physical and social environments; with its unique historical legacies and social structure. The way in which current problems of achieving social goals are worked out through these variant conditions may propel developing countries down quite different paths of social development, toward goals and objectives which reflect quite different social values. Having recognized the limitations

of development models which assume a "final state" of a social system, social scientists are beginning to emphasize in their analyses of developing countries the divergent evolutionary trends which are emerging as a result of adaptive processes of change. In analyzing from a functional perspective the impact of industry on developing societies, Moore (1965:83) has suggested three principles of development relevant to this report's argument. These principles depict society in a less deterministic way than is normally characteristic of modernization theories. Indeed, Moore even depicts highly integrated societies as having wide degrees of freedom which allow great divergences through time as different initial states and variant systems of values differentially influence the course of change.

The first principle, the principle of structural suitability, is based on the assumption that a society represents a set of interrelated structures (patterns of behavior) that function to fulfill the survival needs of a society and of the society's members. These structures are integrated to the extent that innovations not suitable to the existing patterns may undermine the social order and weaken the society's capacity to remain viable. Underlying this principle is the further assumption that social organizations and individuals have a range of basic survival needs or imperatives that must be met. These basic imperatives are fundamental to social systems and to human nature and are, therefore, nearly universal in scope. The assumption of systems requirements or imperatives is basic to functional analysis, in such analyses, major emphasis is given to identification of the minimum needs of viable social systems.

Peter Corning (1970), writing from an evolutionary perspective, has argued that social indicator research should focus on these survival needs and attempt to develop a set of indexes of human biological and social viability. In development activities, where change is purposely induced to solve certain societal problems, there should be, at minimum, techniques available to constantly monitor how successfully a society meets its basic viability needs. From the perspective

of an adaptive model of social development, efforts to develop indicators of development should initially focus on the development of measurement techniques to assess the structural suitability of development programs to the developing society in order not only to minimize undesired latent consequences to the basic life chances of individuals in that society, but also to assess whether the society is meeting basic human needs. It is of crucial importance to note that the indexes used to monitor these conditions should be disaggregatable to population subgroups in a society in order to reveal whether the costs and benefits of change are being equitably distributed among individuals in that society.

The second principle, the principle of structural substitutability, is based on the assumption that the "general functional requirements for the persistence of any society set only very wide limits on the appropriate structural ways of accomplishing those requirements" (Moore, 1965:83). This principle suggests that there are a variety of ways to fulfill the functional requirements of human beings. Therefore, one might expect societies with quite different cultural, social and economic processes to nevertheless fulfill the functional needs of their respective populations. This principle also suggests that the specific trajectories followed by particular countries in the process of development may be quite different without necessarily entailing impairment of the capacity of any particular society to meet the viability needs of its people. It should also be noted that this principle is in sharp contrast to the deterministic view of development assumed by modernization theories.

The third principle, the principle of autonomous variability, is based on the assumption that the "specification of parts of a social system (say, its characteristic economic organization) delimits possible variation in order parts; but it does not determine their exact form in all detail" (Moore, 1965:84). This principle suggests that not all parts of society will necessarily be affected by major change in some other part of society. For instance, major economic

change does not necessarily entail that all aspects of a society's cultural and social patterns will be seriously disrupted or altered.

These three principles suggest a model of development in which "ultimate" development goals, whether ideological or utopian, are deemphasized. The process of development is viewed as an evolutionary process of individual and organizational adaptation to external and internal problematic contingencies in the individual's or group's environment. Social change, viewed from this perspective, is not a unilinear process. The trajectories of social change of unique societies may follow quite different paths and move in quite different directions. If there is any one "ultimate" goal for a society embarked on its unique path of change, it is to maintain its functional capacity in a changing environment to meet basic human and system viability needs by means of adaptive adjustments.

It may be concluded that with the exception of a narrow range of universal or imperative human needs, the possibility of divergent paths of social development implies the impossibility of generating universal indicators of "social development." Social indicator systems, from this perspective, will have to be tailor-made for each unique social system.

#### Values and Social Development: The Dilemma

While this review of past "solutions" to the problem of defining social development is necessarily incomplete because of resource and space limitations, it does serve to illustrate the dilemma encountered in attempting to construct indicators of social development. The relevant question still remains: "In constructing indicators of social development, whose value standards should be taken into account?" Those of the advocate of economic growth? Those of the ideologist? Those of the utopian dreamer? Those of the modernist?

It is potentially misleading, of course, to simply categorize definitions of social development into some neat paradigm; nevertheless, one might hazard to say that in defining social development, there are two prevailing orientations: one which defines social development in terms of a priori definitions of "final state"; the other which defines social development in terms of an adaptive process. Yet, having distinguished between these two orientations, there is a strong temptation to settle for the former definition of social development in terms of a "final state." The temptation is strong for two reasons:

- 1) Assuming the process of evolution is toward a homogeneous "final state" such as modernization, any set of indicators developed to measure modernity is both universal and timeless in its applicability;
- 2) Comparative models highlight striking differences in social and cultural forms between developed and non-developed societies, thereby, simplifying the process of identifying needed indicators.

While these two reasons are tempting, the very weaknesses of utopian and modernization perspectives discussed above make them untenable models for generating relevant indicators of social development. In contrast to utopian and modernization models, it becomes apparent that adaptive models provide greater potential for generating relevant indicators of social development. Clearly, development is more accurately viewed as a dynamic process of problem solving carried out by governments and people as they work out in their daily lives solutions to concrete life problems.

The adaptive model, however, assumes a complex adaptive social system and the equilibrating process it undergoes as it adjusts to changing environmental conditions and internal tensions. In order to accurately monitor and analyze the performance of a society, it would be necessary to construct a model of a societal system which delineates the complex dynamic network of interrelationships among the parts of the system and how these relationships change through time. Quantifiable models of this magnitude are not currently available in the

social sciences nor will they be available in the near future. Even if such societal models were available, they would involve such a massive collection of variables (components and parameters) that societal managers would not be able to meaningfully process and assimilate the information into the decision-making process. To be useful in the decision-making process, indicators must be relatively few in number, understandable to the nonscientist, and most importantly, relevant to the policy questions at issue.

The advantage of the adaptive model, however, is that it depicts development as a process of increasing societal control by coping more effectively with the problematic contingencies the society confronts in the normal processes of social life. Basic to this coping process, of course, is the establishment of goals and priorities through public policy. And, of course, a diversity of values will play upon the decision-making process: economic, utopian, ideological, and modernity values, as discussed above. The particular developing country's cultural and social values of a more traditional nature, of course, will also enter. The effectiveness of the adaptive or coping process is determined by the success with which policies can be established which, despite conflicting values, command the response throughout the social system if the policies are to be effective. At the same time, social feedback systems provide a means to assess whether policies have been effective and, if not, whether new programs or even new policies must be implemented in order to increase the capacity of the society to be more responsive to its membership through the formulation (or reformulation) and implementation of policies and programs that help the society to more fully realize its own values.

Indicators of social development, from this perspective, should be components and parameters in an information system explicitly designed to provide more critical judgment of public policy. For this reason, social indicator research not only should provide information relevant to specific policy issues, it should also be an integral part of policy research, since the development of

usable indicators will be facilitated by focusing initially on the generation of indicators relevant to the policy issues confronted by specific decision-making systems this perspective on social development is situational. Societies with unique cultural and social forms face unique sets of problems that they must cope with in their development activities. It is highly unlikely, therefore, that a generalized system of indicators can be developed which has universal applicability.

#### PART IV: INDICATORS OF SOCIAL DEVELOPMENT: A METHODOLOGICAL APPROACH

##### Introduction

In accord with the discussion in previous parts of this report, a model of social development should be based on a perspective which views development as an adaptive process to societal contingencies. A model of this adaptation process must be more than just an abstract theoretical description; it should be designed as an information system to assist the decision maker in assessing the relevance of public policy to desired societal goals. Thus, what is required is an adaptive process model whose elements are components of a general information system of direct interest to policy makers.

Since it may not be initially clear how such an information system plays a role in the policy making process, the discussion which follows suggests that in order to make decisions more effective and efficient, policy makers need adequate information concerning the crucial elements that must be taken into account in delineating policy alternatives and choosing among them. These information requirements are often difficult to meet, however, and the development of an information system is, therefore, of potential value to the policy maker. Thus, the following section discusses information systems as an input-function into the decision-making process.

Of equal importance is a consideration of the way in which any model is constructed. The information system required by policy makers is best developed through a scientific approach of model building. While there are several possible methodological approaches, the approach chosen in model construction is highly dependent on what is already known about the social phenomena to be modeled. However, as concluded in Part III, the current level of understanding of social development is still quite limited and tentative. Thus,

the methodological approach to building an adaptive model of social development of which is of value to and can be used by the decision maker must necessarily be of an exploratory or inductive nature.

## Section A: Social Policy and the Need for Information

The organization of human life fundamentally depends upon the exchange of information. Without communication or the exchange of information, social organization never could have transpired. Instead of the complex societies that describe man's current condition, the unorganized activities of cave men would still be extant. It is, after all, "communication alone that enables a group to think together, see together, and to act together" (Wiener, 1955).

Social organization is the product of an evolutionary process in which man has struggled to survive within a hostile physio-social environment. The physical environment, made up of the resources needed for man's sustenance, for example, water, and those elements that directly threaten man's life and livelihood (e.g., disease, storms, and violence), has forced men to deal with one another cooperatively in order to more effectively extract and distribute resources and to protect human life from the elements. And, to insure a degree of protection from competitive conflict for scarce resources, once temporary, cooperative efforts evolved into more permanent, patterned forms of social organization such as the tribe, the extended family, and the nation-state which enabled one human group to more capably protect itself from and buffer its relations with any other social group perceived as a threat.

Historically, man has increased his population, has used up many of his resources and, thereby, has provoked hostility and increased potential for conflict. At the same time, in order to deal more adaptively or managerially with social neighbors and the physical world, man's social organization has been changing in the direction of increasingly complex organization, with a proliferation of more differentiated, specialized, and interdependent social forms, increasingly dependent on information exchange for their survival.

And as social organization has evolved into more complex forms, there has been an accompanying development of specialized organizations whose purpose has been to deal with specific aspects of problems which face society. These organizations, made up of societal managers (e.g., policy makers, planners, and other decision makers), have utilized information in order to understand present human difficulties, anticipate future problems, and derive ways of dealing with the future, all of which serve to increase man's adaptive capacity.

Due to the differentiated, specialized, and interdependent nature of such societal managerial roles, extensive communications and exchange of information are increasingly required in order to achieve those goals desired by society. Planning and decision making, in order to be performed most effectively, require vast amounts of information in order to efficiently use the available means to solve the problems at hand, without upsetting societal values or ongoing policies of other groups in the society. Ideally, decision making or planning can be viewed as a systematic effort that processes information concerning the nature of the problems to be solved, the degree to which scarce resources are available to bring to bear on the solutions of the problems, the degree to which certain contingencies may creep into vitiate the efficiency and effectiveness of alternative policies, and the degree to which the alternatives considered will themselves create problems if enacted. Again, ideally, administrators charged with policy responsibilities are thought not only to be aware of these elements of decision making, but also to possess the proper amount of information concerning each element in order to meaningfully include them in the policy making process.

The real conditions under which policy making occurs, however, demonstrate that the ideal conditions described above are not totally indicative of the entire range of elements or contingencies involved in decision making.

Furthermore, most decision makers do not have direct access to the level of information they need to make decisions in a rational manner. Often, while charged with the responsibility to allocate scarce resources in a way which brings about the desired end with minimum cost and maximum benefit, decision makers either do not have access to the knowledge required or they are unaware that they have neglected to examine all of the contingencies that may affect the outcome of their policies. Similarly, decision makers often fail to perceive, or if they do perceive, fail to make use of, the most useful information sources available. Policy makers are under a number of other restraints as well, as evidenced by the diagram in Figure 1, which include not only the "ideal" constraints, but also other contingencies that impinge on decision making effectiveness.

(Figure 1 about here)

As problems become known and action is desired by the populace, decision makers attempt, in the most efficient manner possible, to bring scarce resources and knowledge to bear on the problem. As policy alternatives are conceived and implemented, however, disordering elements such as traditional goals and means for their attainment, prejudicial views concerning the way in which men should continue in their relations with one another, the unexpected actions of others, and the unanticipated consequences of alternative policies become contingencies whose actual or potential effects on outcomes can be disastrous. Thus, the policy maker must be fully aware of the relevant societal interests and how these interests may react to given policies and what the consequences of such reactions might be for the policy outcome. Also, administrative policies are never judged solely on the basis of technical excellence, but instead need also to be demonstrably compatible with current means and goals and with those values held by a majority of the populace. Without such congruence the policies will either be rejected or will fail in accomplishing

Figure 1. A Decision-Making Paradigm

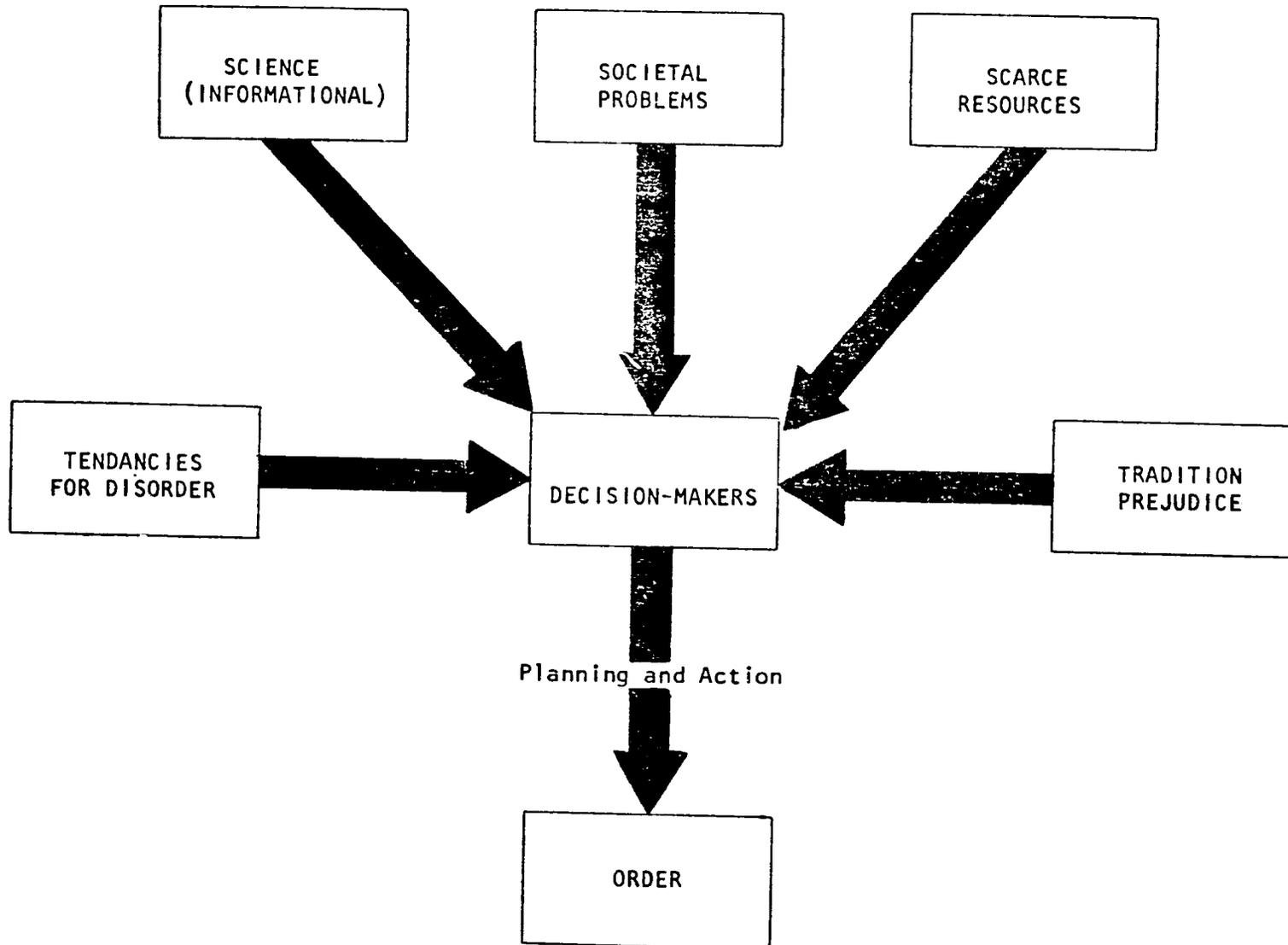
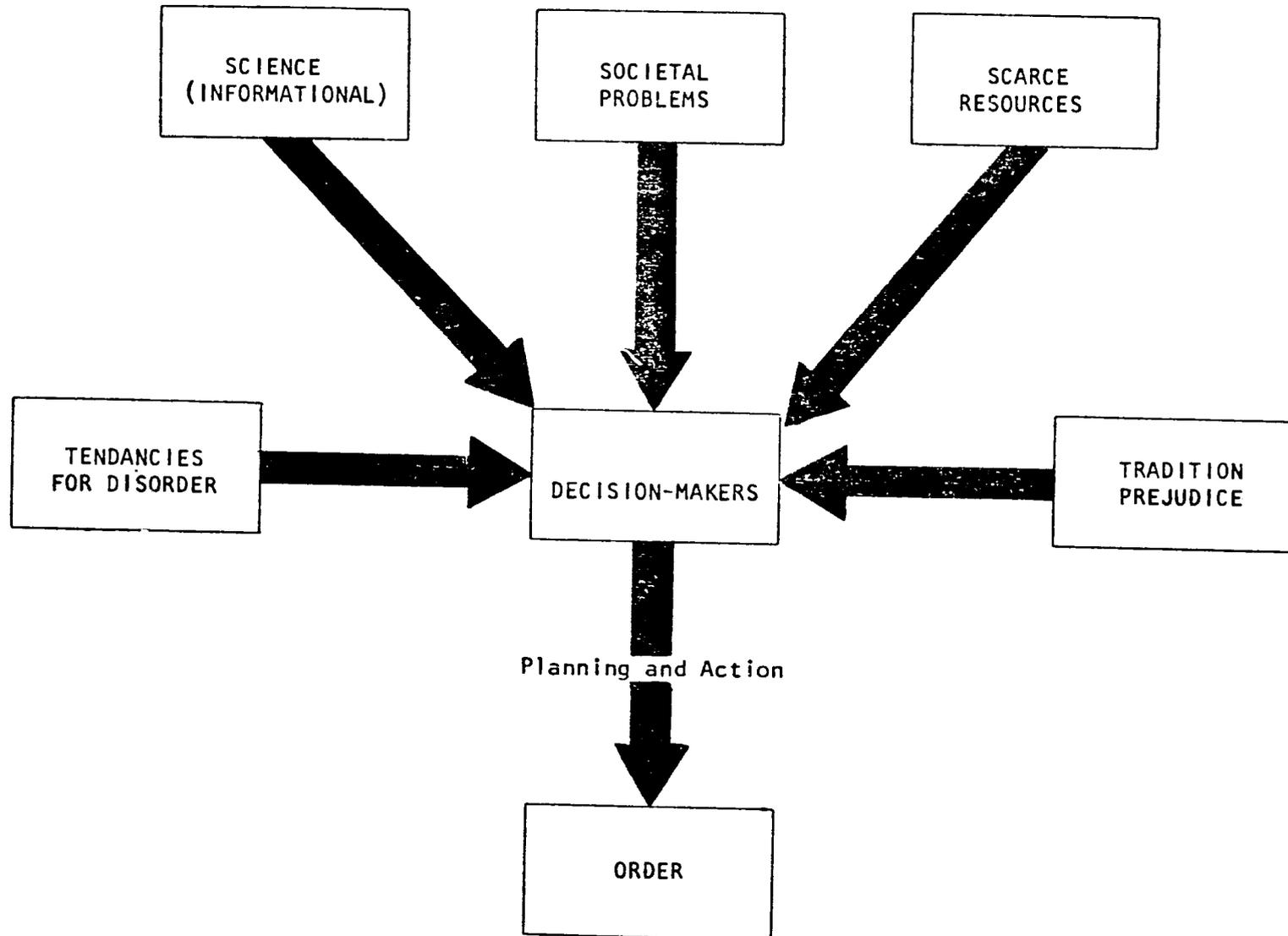


Figure 1. A Decision-Making Paradigm



their objectives. Policies do not operate in a vacuum, but rather must function harmoniously in a system of on-going policies already in operation.

It can be argued, however, that all of these contingent constraints are actually problems of information. Policy makers need mechanisms by which the requisite knowledge of traditional approaches, possible consequences of given policy alternatives, and restrictions imposed both by policies currently in practice and by societal values can be made recognizable and predictable elements in the decision-making process. To the extent that these diverse informational needs are not recognized and the requisite information remains an unknown, policy making tends to rely largely on "gut feel" or value judgment and grows most tenuous in its efficacy. It is obvious that the policy maker requires a system of information that is reliable, valid, objective, and inclusive.

While numerous methods or approaches have been employed by decision makers in order to make policy making more rational, there is no system of information acquisition which more fully meets the criteria of reliability, validity, objectivity, and inclusivity, than that of the scientific approach. The scientific process equips the planner with a general methodology which consists of a system of rules to assist the planner in anticipating the elements which must be taken into account in the decision-making process, especially in identifying those elements which act as constraining forces and, thus, must be dealt with in such a way that they ultimately do not jeopardize policy effectiveness.

The need for the scientific approach in policy making is particularly relevant today as social policies, the product of planning and decision making, increasingly enter the realm of man's social life in order to solve social problems and to achieve social goals. To date, however, man's efforts to

purposively solve social problems and achieve social goals have not been as successful as they might have been, largely because policy makers have not been able to effectively counteract or at least control such negative influences as constraining forces, disordering elements, etc. that in the past have often been causes of failure. The inability to effectively counteract or control negative influences has largely been the result of the lack of relevant social information concerning the actual state of the problem, the nature of the resources available as means for solutions, and the secondary consequences of actions; and of the failure to blend new social policy harmoniously with existing societal policies and values. To the extent that decision makers do not take into account relevant social information and, instead, employ non-rational techniques such as "gut feel" appraisals or value judgments to "solve" problems, relying on their own subjective assessment rather than a scientific assessment, they foster a social "information gap". When relevant social information is not taken into account, it is to be expected that social itineraries, be they plans, policies, programs, or projects, will be unrealistically formulated, ineffectively implemented, and most unfortunately, predictably unsuccessful (Chamberlain, 1965:4-9).

The "information gap" is further widened in that the appropriate scientific knowledge necessary to anticipate and control on unknowns is often lacking. Thus, when policy makers do turn to science to aid in their efforts to formulate viable policies, they often find that for their requirements, there is only a rudimentary level of relevant knowledge available. Unfortunately, the amount of social scientific information that is both useful and utilizable is exceedingly small. Social scientists have only recently begun to consider in their research the question of how to generate and apply problem-solving knowledge. Thus, much of what social science presently has to offer is yet too abstract and lacking in precision; it is little wonder, therefore, that

certain administrators prefer their own experience to that of social science. This unfortunate state of affairs, however, is taking a turn for the better, as social scientists increasingly turn their attention to the social policy issues which confront policy makers. New efforts are currently underway that seek to create a resource of knowledge and facts which are not only of direct interest, but also of practical utility to policy makers. It must be remembered, however, that the social scientist's focus on social policy needs is a relatively recent phenomena; thus, much of the needed knowledge and information has yet to be generated.

Viewed in this light, the "state of the art" of social indicator research is particularly demonstrative, as the section on social indicators earlier in this report described. Since the field of social indicator research is relatively new, it is not always clear to policy makers that social indicators do hold great potential as a useful and utilizable means to assist policy makers in the formulation of social policy. While some policy makers may believe that social indicators do not hold such potential, basing their argument solely on "gut feel" and/or extra-scientific value judgments, opposition to social indicator research may also reflect overdue caution in light of the fact that there is not yet universal agreement as to what social indicators are, how social indicators should be used, and by whom social indicators should be employed. Thus, for example, there has been no agreement as to whether social indicators are a set of descriptive statistics, elements in a social system's model, goals in a particular policy, or abstract goals of a nation at large. Furthermore, there have been numerous interpretations in terms of users and uses of social indicators. Some have suggested that government officials should use social indicators for short-run program and project evaluations. Others have proposed that a society should explicitly state its social goals; then social indicators would be used to evaluate the

nation's progress toward the stated goals. Still others have argued that the users of such statistics should either be the public at large (public consumption), government bureaucrats, or an independent group of societal critics who objectively evaluate the government's progress toward social goals.

Those policy makers who require social indicators, therefore, must help the social scientist answer the what and how questions before useful social indicators, logical frameworks, and models of social indicators can be developed.

To further complicate the situation, not only will there be increased demand for social data, there will also be increased pressures for social indicator research to immediately bring fruition. The generation of scientific knowledge, however, is often a long, tedious effort in which ideas are generated, tested, and if rejected, reformulated for further testing; at times, of course, reformulation is not the answer, and new ideas must be sought. Often the boundaries of the boundaries of the problem are so ill-defined that years are spent determining the nature and boundaries of the problem to be researched. Further, the persons for whom the data will be generated and how they will use it are frequently completely unknown. These initial problems are further compounded by the need to select social indicators that can be reliably and validly measured. This means that the social indicators are of a nature that they can be continually measured over time without error (reliability), and that the data collected truly represents the ideas expressed by the social indicators and the social theory (validity). The process of developing social indicators is even further complicated by the very process that underlies the generation of all scientific knowledge. The scientific approach to generating knowledge involves a careful, time-consuming excursion into both the world of logic and the world of data or reality. In the following section, the scientific process and the various methodological approaches to information generation are explored.

## Section B: The Scientific Process and Alternative Methodological Approaches

The development of any theory or model, social or otherwise, requires a methodology, that is, a method by which scientific knowledge is generated. A methodology, in essence, describes, explains, and justifies the method by which certain models, such as models of human behavior, are generated (Kaplan, 1964:18). In order to clarify the role of differing methodologies in the creation of social models, a brief discussion of the nature of the scientific process is necessary.

### The Scientific Process

As Implied previously, science aids in the process of decision making by imposing a more objective framework for dealing with problems and, thus, is more heuristic than a normative or idealistic approach in understanding empirical reality. "Science is a way of generating and testing the truth of statements about events in the world of human experience" (Wallace, 1972:11).

What makes science an objective approach is its empirical basis in the observation of events. From raw experiences, hypotheses are both formulated and tested, and as a series of empirically supported hypotheses accumulate, theoretical ideas are formulated about the nature of empirical reality. Thus, the scientific theory is said to emanate from the observation of man's everyday experiences.

The scientific process begins with the assumption that there is an understandable order underlying the phenomena experienced by man. Thus, through scientific research, scientists seek to discover the regularities in the behavior of the phenomena they study. As regularities are perceived, hypotheses concerning the regularities may be developed. In bringing together a series of hypotheses concerning regularities in the behavior of the phenomena of interest, theories are formed. Scientific theory, however, is not immediately

accepted on the basis of inductions from experiences and generalizations; instead, a systematic examination of a variety of empirical experiences is necessary in order to "test" the theory. Logical deduction is applied to the theory to generate a series of hypotheses; then, following a systematic set of rules, data are collected and statistically analyzed in order to determine whether the theory is supported or not.

The scientific process thus involves a circular relationship between ideas and empirical reality. Regularity is perceived in events and ideas are generated. These ideas are then tested by a re-examination of reality to determine if events empirically confirm what the ideas (theories and hypotheses) predict they should be. This circular relationship is illustrated in Figure 2.

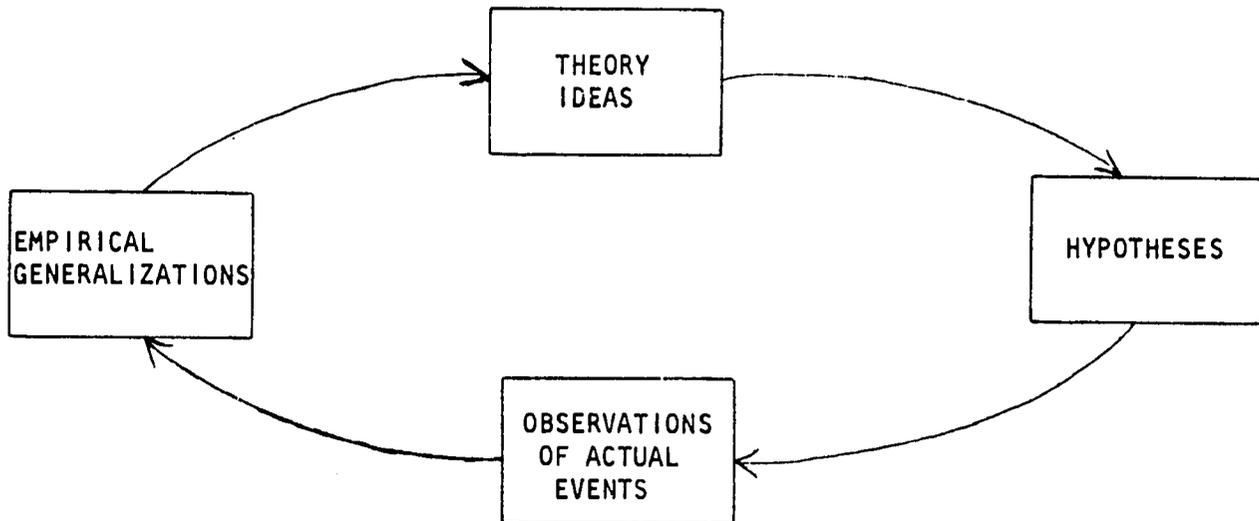


Figure 2. The Circular Relationships Involved in Science (derived from Wallace, 1972:18).

Science is thus seen as a never-ending circular interaction between theories and empirical events. Researchers with particular problems may enter the circle at any point; there are no scientific rules that a particular methodological approach must necessarily begin with either events or models. Instead, where scientific inquiry enters the circle is entirely dependent upon the particular researcher's judgment of where he or she thinks it would be best to enter the circle in light of the present level of scientific knowledge and methodological skill.

#### How Scientific Knowledge is Generated

While the generation of scientific knowledge necessarily involves the scientist in the circular relationship between theory and reality discussed above, scientists will not all enter the circle at the same point. For instance, some scientists start with simple generalizations about phenomena and look for empirical support; others start at the most abstract theoretical levels, deduce propositions or hypotheses about the phenomena they wish to deal with, and then empirically test these hypotheses. Other scientists, however, begin in the world of observation, free of theory and hypotheses, and search for regularities in behavior that appears interesting or worth explaining.

There are two main types of approaches to generating knowledge in science: the inductive and deductive. While neither approach can be said to be "better" than the other, the inductive type is more useful during confirmatory research phases. Before more closely examining the inductive approach to the generation of scientific knowledge, the following illustrates both deductive and inductive approaches to building models of social development.

### The Deductive Approach in Social Development Models

The deductive approach in the generation of social development models consists of the application of social development theories applied to specific empirical situations, usually within a developing nation. Specific hypotheses concerning the relationships of the various development phenomena such as GNP, literacy, urbanization, and modern attitudes are generally expressed in the form of hypotheses whose validity is tested by statistical examination of the relevant empirical data.

There are numerous examples of the deductive approach to building models of social development in which theorized relationships between particular elements within societies are generally seen to be the basis for "development".

The Neo-evolutionary Theories of Society: Currently, in the social sciences, there has been a revived interest in a Darwinian conception of societal change as an evolutionary process (Corning, 1970). The social organization of human beings in a given society represents the collective survival mechanism by which man as a species perpetuates himself. Man lives in a hostile environment on which he must depend for scarce resources. At the same time, men constantly multiply in numbers and use up resources; survival is thus a contingency, dependent upon man's successful organization of his activities for cooperation in solving problems, for teaching offspring the methods by which organized human beings cope with their environment, and by which he develops new ways to further exploit his physical surroundings.

The study of social organizations within a society is one of determining the survival value or contribution of those organizations, approaching survival-related activities from a macro perspective. Macro-behavior is evaluated in terms of such interrelations as: the natural and external human environment (their challenges, opportunities and limits in terms of the survival problem); the basic survival needs of a particular population; the

repertoire of behavior (or survival strategy) employed by a population for satisfying those needs in that environment; and the genetic "fitness" of the population. Corning (1970) then creates a series of "indicators" by which social organizations are judged for the "adaptiveness".

This approach is largely deductive in that it is postulated that social organizations exist to aid man's adaptation and that the various activities of men may be weighed in terms of their functions or dysfunctions for, ultimately, the biological survival of man. The necessary relationships between man and man and between man and environment are assumed to be true, and the empirical questions raised are intended to show how well the necessary relationships are maintained through social organizations, not whether such relationships actually exist.

Indicators of Social Development Based on Developed Nations: As discussed earlier in this report, there has been a tendency to conceive of the development of the LDCs as becoming "like" the developed nations. Various aspects of modernization are hypothesized to bring about various other development aspects; for instance, Lerner (1958) hypothesized that an increase in mass media participation, accompanied by an increase in literacy skills, leads to an increase in urbanization which, in turn, brings about increased economic and political participation. Modernization theories such as Lerner's, however, are not convincing in their demonstration that "one form of modernization leads to yet another form." After all, it could reasonably be argued that economic and political participation → urbanization → literacy → media participation.

Human Necessity Theory: The Bariloche Foundation in Argentina is attempting to develop, under the direction of Dr. Carlos Mallmann, a world model which includes social indicators based on theoretically postulated "invariant

necessities of human beings". The postulated necessities of human life include three types, each type subsuming three major categories of indicators:

- 1) Biological
  - a. individual (food, clothing, etc.)
  - b. material habitat (housing, services, etc.)
  - c. physical exercise
- 2) Protective
  - a. medicine (preventative, mental, physical, etc.)
  - b. security (internal, external)
  - c. communication and transportation
- 3) Intellectual
  - a. education (informal and formal, etc.)
  - b. mental habitat (information, mass communication, etc.)
  - c. mental exercise

(Mallmann, 1972:3)

On the other hand, the ways in which men attain the necessities via individual and collective forms are considered the variants. These social and psychological forms are variant because life styles, value systems, and natural habitats vary from one social group to the next. Based on the human variants and invariants, a single model or "balance equation" is postulated which consists of societal resources, production of satisfactors, systems of distribution, citizen reaction to the production and distribution system, and societal values.

Basically, societal values determine the hierarchy of needs (invariants) which, in turn, determine the goods, services, and human relationships which production must provide as satisfactors. With distribution, there occurs consumption patterns which are experienced either with satisfaction or frustration, depending on the congruence between the supply of satisfactors and the human values of the society. The citizenry express their reaction to the production and the distribution of satisfactors through social organizations, whose actions ultimately feed back into the societal value pool, either reinforcing or changing those values over time.

Finally, with this model of social development in mind, there is an intent to quantify satisfaction and other elements of the model in order to determine a series of balance equations which would serve to determine at what point the society is in equilibrium.

The approach being taken by the Bariloche Foundation is another example of a deductive approach, although an inductive analytical process is also involved. Basically, however, the invariants of human life and their effects on social organization are postulated before empirical situations are examined.

#### Some Inductive Approaches to Social Development Models

There is nothing inherently unscientific or non-utilitarian about deductive approaches to modeling. While a deductive model-building effort does presuppose a great deal of knowledge about the social phenomena to be explained, as long as the researchers or policy makers are confident that the areas of their concern can be acceptably explained by existing theories, the deductive approach is entirely adequate.

There are, however, numerous situations in which the social theories extant today are neither adequate nor complete, as evidenced by the state of such theoretical concerns as social indicators (see Part II) and social development (see Part III). Often such theories are inadequate simply because those who contributed to the development of the perspective had access to only a limited amount of information concerning the phenomena they wished to explain. Or, based on a narrow view and often unrecognized normative concerns, theories were developed which are useful in explaining the narrow scope of phenomena from which they were derived, but are totally inapplicable when broader concerns and wider situations are in question. The social theories of modernization, as discussed previously, are exemplary of this weakness in approaching relatively unknown areas of social concern.

In dealing with the phenomena implied by such a broad concept as "social development", the inductive approach to model building is far more applicable and valid. Induction requires that the researcher begin at the empirical level, with as few preconceived notions as possible about the nature of the events to be observed. In its ideal form, the data forms the theory.

This ideal is rarely approached, however. To begin with, scientists rarely enter a research situation without some preconceived notion about the nature of the phenomena; generally, they already have developed some theoretical biases and these are extremely difficult to fully control. Furthermore, in order to comply fully with the dictates of induction, great expenditures of time and money are necessary which are luxuries that most researchers cannot afford. Instead of an ideal application of induction, researchers generally enter the research situation with some loosely formed ideas concerning the research problem. These ideas generally specify the empirical phenomena that should be isolated, along with some ideas of how these phenomena might be related. The exploratory nature of this kind of approach involves the manipulation of collected data by such statistical techniques as regression, correlational, path, factor, or correspondence analysis. Statistical findings are then used to formulate generalized empirical hypotheses about social development; from these generalized empirical hypotheses more general theoretical statements are derived. While such procedures are generally inductive, the fact that the empirical data selected for examination were generated on the basis of some theoretical criteria of importance or relevance necessarily compromises the inductive nature of the inquiry.

Interesting examples of an inductive approach are found in Adelman and Morris (1971) and by McGranahan (1972). Adelman and Morris attempted to determine the interrelationships of hypothesized economic and non-economic

Indicators of development. Factor analysis was used in order to attempt an inductive approach to model building. However, as the indicators of development were predetermined by existing development theory, the results obtained neither generated theory nor confirmed deductively-derived hypotheses. Thus, the authors could only claim to be involved in "the initial exploration of those wide interactions involved in economic modernization" (Adelman and Morris, 1971:91).

A similar reliance on modernization and economic development theories in selecting concepts and data underlies the UNRISD study by McGranahan, in which efforts were made to select and analyze the relationships between the most important indicators of socio-economic development. Using data collected by UNRISD, the highest correlated variables among 73 social and economic variables were selected as the most appropriate development indicators. A general index of development was then constructed, using a weighting process based on the actual correlation values themselves. Unfortunately, like the results of the Adelman and Morris work, no attempt was made to construct a general model of social development.

#### The Premise of the Inductive Approach

Although the works discussed above have shown little contribution to the development of models of social development, the inductive approach does offer great potential for coming to grips with a research problem that is not clearly defined. The nature of social development is unclear, as evidenced by the variety of definitions of social development and by the inability of most social scientists to conceive of societal change in any other form other than "becoming more Western". As deductive theories provide very little of relevance, utility, or utilizability in understanding or furthering social development, what is called for is a more extensive use of the inductive approach.

Induction needs to go beyond the works of Adelman and Morris and of McGranahan in that deductive theories must not be allowed to totally structure the empirical phenomena examined. Instead, an inductive approach should begin with an outline of the most basic assumption the researcher is willing to make, complete with hypothetical relationships suggested by those assumptions. The researcher of social development, granted, has thus committed himself to a partial preconception of the nature of social development, but again the preconception is only general. Furthermore, the researcher, while partially compromised, by maintaining an awareness of the commitment, i.e., an awareness of the assumptions made, is able to question, attack, and revise his initial ideas. Thus, as his acquaintance with social phenomena increases, the researcher can readjust his conception of social development to fit more closely his observations of empirical events.

#### Disaggregation and Time Series

There are several other methodological considerations of importance for constructing models of indicators of social development. Of particular importance are the questions of disaggregation and time series.

Disaggregation: One of the major objections to economic indicators such as GNP, as well as to recent attempts to formulate social indicators, has been the highly aggregated nature of the measures. This has led to policy formulation on the basis of aggregated demand without sufficient attention to needs and interests of subgroups delineated by factors such as age, race, education, occupation, region, etc. As Coleman (1969:94) notes in discussing the impact on the American Negro on policy decisions formulated on the basis of aggregated data:

One might go so far as to say that the failure to disaggregate, to show trends detailed by types of occupations, by population subgroups, and by differing types of individual trajectories, caused policy errors with serious consequences.

Hence, to be useful in planning for social development or in monitoring social change, social indicators must provide for disaggregation, i.e., must provide a means to reveal variations in subcategories. To develop indicators at the aggregated level, as has normally been done in the past, generally presents serious obstacles to, if not precludes, systematic disaggregation, since aggregate indices and measures do not provide the appropriate data necessary to assess the varying social conditions of subpopulations within a nation or society. Indeed, disaggregation is not anywhere more important than in the measurement and monitoring of social development, since social development minimally involves the relatively small subunits of society within which social needs are fulfilled and through which social development programs are carried out. The major portion of social indicator research, however, has focused on aggregate data pertaining to the level of the nation state. Such aggregate data have been developed in such a way that it is not easily disaggregatable to the level needed to monitor the effectiveness of social development programs. Thus, research on indicators of social development needs to direct considerably greater attention to the development of social indicators which measure and monitor relevant social phenomena at sub-nation state levels, i.e., in subpopulations delineated by such factors as region, age, education, social class, etc.

Time Series: Social change, and thus social development, entails a change or alteration in the state of a social group, or a modification in the behavior of an individual. Change itself generally occurs during a passage of time; it is only perceptible when state A at time 1 becomes state B at time 2 or behavior X becomes behavior Y with the passage of some period of time. Humans can physically observe only those changes that require some passage of time, even if that increment of time is small.

Despite these considerations, however, many social scientists fail to recognize that to realistically study social development, social indicator data must be collected at several points in time to allow for time series data analysis. Social change can only be demonstrated by measuring a phenomena at two or more instances in time and then comparing the different measurements. Whether social change occurs gradually or rapidly, the measurement of social change requires repeated data collection at consecutive points in time, in order to determine whether significant changes in social behavior have occurred.

In summary, then, the methodological approach most relevant for the development of models and methodologies of social indicators call for the use of an inductive approach, the development of disaggregatable indicators and the measurement of social indicators in a time series.

## Section C: Information and the Decision-Making Process

### Introduction

Indicators of social development have generally been conceived in this report as components and parameters in a feedback system designed to assist the decision making involved in social development. The preceding methodological discussion in Section B specified the need and desirability of an inductive approach to the construction of models of indicators of social development. However, if followed explicitly, the inductive approach would require the observer to approach a problem as free of preconceived or theoretical notions as possible, and to formulate inferences, hypotheses, models, and theories purely on the basis of randomly-observed data. While the general methodological framework to be outlined here in Section C deviates somewhat from this purely inductive approach, the framework does provide a systematic way to focus on the decision-making processes involved in social development and, thereby, also provides an operational basis for empirically identifying social indicators relevant to the specific decision-making processes involved in the social development of a given developing country. While it is not possible at this point to specify exactly which substantive social indicators would be relevant for a specific developing country, the methodological framework presented does incorporate several general types of indicators suggested as relevant to policy questions arising at various levels of the decision-making processes generally involved in social development. Finally, a modeling procedure that includes these general types of social indicators will be proposed as a means to empirically construct for a given developing country social policy models which incorporate social indicators empirically-identified as relevant to the specific decision-making processes and policy questions of that country.

Toward A Methodological Framework

Even though the idea of developing sets of social indicators was formally introduced into social scientific thought less than a decade ago, there has been considerable maturing of thought concerning the nature and meaning of the term. While early discussions of social indicators were largely programmatic discussions of the need for and potential uses of indicators, empirical work in this area has since concentrated on the development of descriptive statistics of social conditions and the development of time series analysis of social trends. In terms of theoretical considerations, however, Kenneth Land (1971) has argued that social statistics do not become indicators until they are incorporated as parameters and components in a social systems model.

To date, research concerned with the construction of social indicator models has focused primarily on the development of positive models (what is). Positive models are extremely helpful in increasing scientific capacity to analyze and explain the operation of social systems. Such models, however, are not constructed with an intent of providing information explicitly designed to meet the information needs of particular users. In meeting the information needs of planned social development, tools are needed which have the capacity to provide the relevant information critically needed in order to choose among tentative strategies to reach desired ends. To develop such tools, social indicator research must focus on the decision-making process itself and the kind of social indicators relevant to this process with an objective of developing models which focus more on social indicators as components and parameters in feedback systems for decision making.

Social indicator systems originally were proposed as the basic elements of a societal feedback system designed to assist the formulation of more informed societal management. As was previously argued, it is primarily this

view that has influenced the Iowa State Social Indicator Project's conception of social development. Social policy models must be capable of critically evaluating policy by more adequately taking into account underlying values and effects of policy on other social values of the social unit in question.

As a part of the larger field scientific inquiry known as policy research, social indicator research differs from program evaluation in much the same way that strategy differs from tactics. While policy research is concerned with the clarification of development goals and strategies, program evaluation is more applied in nature and is concerned with the attainment of specific goals and objectives through the performance of specific programs. Etzioni notes:

In terms of the theory of action, applied research deals with means, taking the goals for granted. Policy research deals with values and seeks to clarify goals and the relations among them, as well as among goals and sets of means. Applied research is, by definition, instrumental. Policy research is inevitably critical. (1971:8)

Indicators of social development, therefore, are integrally intertwined with values and are viewed as components or parameters of models designed for critical analysis of development policy. However, the paramount question still remains: "Whose values should policy reflect?" The conventional answer, which Tinbergen (1964) accepts for his system of economic planning, is to accept as the relevant values those articulated by governments and government officials. In the actual working out of public policy issues, the values of government officials undoubtedly play the major role in policy decisions. In societies where governments are somewhat responsive to the society's membership, the values of government officials may be reflective of the preferences and needs of people. In societies where governments are not responsive, the values of government officials may be unsafe guides for generating social indicators. For instance, Seers has argued:

. . . governments have necessarily a rather short-term view, in some cases discounting the future at a very high rate. More seriously, some governments are themselves the main obstacles to development, on any plausible definition, and once this is conceded, where is one to obtain the yardstick by which government objectives are to be judged? Even supposing that governments represent faithfully, in some sense, popular attitudes, these are endogenous to the development process and, therefore, cannot provide a means of assessing it. (1972:22)

Seers suggests further that the prevailing concern in development efforts is the distribution of life chances and the society's capacity to provide for basic human life needs. This is a view with which many students of development generally agree; however, this involves more than an assessment of the productive capacity of a society measured in terms of its gross national product. Minimally, it involves the need to develop indicators to assess the performance of the societal productive processes in terms of the actual extent to which societies meet human life needs without undue loss of critical social and cultural values that provide the basis of human meaning for a society's membership. In this sense, social indicators are viewed, in part, as output indicators that assess the aggregate and/or disaggregate levels of human well-being actually realized by a target population as a result of development efforts. Further, these output indicators should be built into models that are capable of assessing the impact of programs (designed to meet these needs) on other values of the target population.

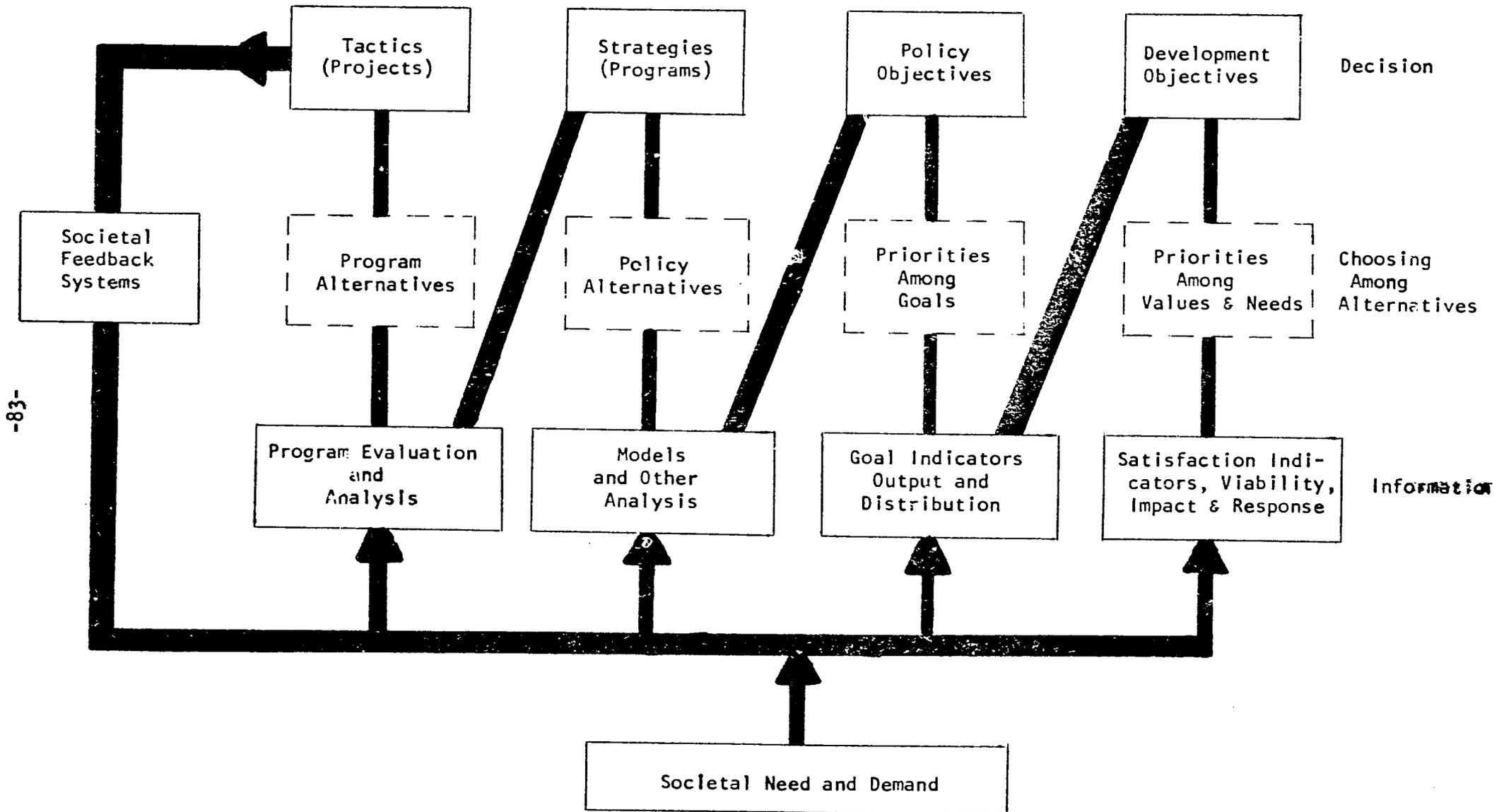
The recent emphasis on the development of social indicators represents a shift in development strategy from simply systems building and institution building toward measurement and analysis of the effectiveness of development efforts in meeting the basic human needs present in given societies. Hence, the human element in development is not only viewed as a means to development but also the end of development.

Historically, the needs and values of the common man may have been the most undernourished source of values drawn upon by planners and policy makers in charting the course of development. Too often the trend has been to see traditional society as a malformation or deviation, an enemy to development. However, it should be recognized that the cultural and social forms that exist in any society are a product of a long history of human beings coping with contingencies in their environment in an effort to find solutions to human problems. Every culture represents an accumulation of a way of life, of cultural and social forms, that function to meet a wide range of human needs. It is these existing social and cultural forms and their relation to the meeting of human needs and the fulfillment of social values that make life meaningful to a society's members. Social development through societal management is a continuation of this coping process aimed at adaptive upgrading of these social forms, through rational decision-making processes, to provide for a greater societal capacity to meet basic human needs, fulfill social values, and extend human meaning in socially desired directions. Social indicator models should be designed to bring more fully into focus the range of choices between development goals, and between goals and alternate means of achieving those goals, so that societies may gain self-control and realize more fully its own values through balanced development of the total society.

(Figure 3 about here)

A general methodology for the identification of indicators should, therefore, focus initially on the decision-making process and the role social indicators can play in this process as an information feedback system for decision making. Figure 3 outlines a very simplified system or flow diagram of a central part of the decision-making process. Like any paradigm, it is a highly condensed and selective view of this system. It makes no attempt to incorporate all of the elements of the decision-making process. It does, however,

Figure 3. Paradigm of the Decision-Making Process in Development Planning<sup>a</sup>



<sup>a</sup>This chart is a modification of the System of Decision-Making Economic Council of Canada, Design for Decision Making, September, 1971, p. 65.

attempt to isolate general types of decisions that must be made in development planning and the types of information needed at each level, and especially, attempts to show the interplay between informational and situational contingencies as they impact the planning process at each level of concern.

The flow diagram is designed to focus on certain key features of a government decision-making system. In development planning, the first social policy issue that must be faced is the choice of priorities among competing values and interests necessary in order to determine national objectives for societal development. Secondly, in taking limited resources into account, decision makers must set priorities on societal goals in terms of their relative importance at points in time. Thirdly, decision making involves choosing among alternative strategies to reach these goals. Finally, decision making involves the choice of appropriate programs and projects in terms of these weighted goals and strategies. At each level of decision making, the role of indicators of social development is to provide analytical information to sharpen judgments about alternatives. And, as the integral component of a societal information system, social indicators should provide a continuous feedback of information into the decision-making process so that societal goals, priorities, objectives, policies, programs and projects can be continually reassessed and realigned in light of the contingencies the society faces in its development effort.

#### Setting Development Objectives

At the highest level of decision-making, the system in Figure 3 calls for choosing priorities among values and establishing development objectives. These objectives are general statements of intent and direction of national development planning. The direction of development objectives must be chosen from a variety of value orientations and national needs that compete for expression in national development planning.

## Values

In an earlier section of this report, the question of values underlying development was discussed at some length. Even though specific value perspectives were rejected as normative frameworks for operationalizing a set of indicators of social development, nearly all of the value orientations discussed will undoubtedly influence in some way decision makers responsible for establishing development objectives. For instance, in nearly every developing country, criteria that derive both from national social and cultural patterns, and from the influence of external ideological patterns (i.e., free enterprise, communism, christianity, etc.) will, no doubt, compete for expression in national development plans.

National goals and development objectives are an expression of the priorities established among various competing value systems and weighted in terms of the national needs and problems which nations are attempting to cope with through development activities. A reliable set of social indicators assists the formulation of development objectives by monitoring national needs and the impact of development activities. In establishing priorities among values and societal needs, three types of information are necessary: viability indicators, impact indicators, and response indicators.

Viability Indicators: No matter what system of ideologies and values a nation holds, the basic concern of all people is that of survival. The collective efforts of mankind to meet these basic needs are so universal that Corning (1970) has referred to society as a "collective survival enterprise". In the final analysis, development is primarily concerned with expanding human capacity to remain viable through collective effort. In the process of establishing priorities among value perspectives, major weighting factors will be basic human needs and social values. Therefore, one kind of social indicator important for development planning would be based on information concerning

how well a society is doing in providing for the viability of its membership. Indicators are needed that reflect the life chances of a society's membership, as well as their ability to improve their life chances through time. Considerable conceptual work needs to be done in this area, but viability indicators should include factors such as mortality, infant mortality, morbidity, life expectancy, nutrition, disability, dependency and etc., as well as the socially conditioned opportunity to fulfill these needs through employment, income and access to facilities and services.

Impact Indicators: Social scientists have long recognized that all social acts have social consequences, some of which are intended (goals) and some unintended (side effects). Societies engaged in development activities must not only be concerned with the attainment of development goals, but also with the side effects or latent consequences of development programs. The term impact indicator, as used herein, refers to the side effects of development programs as they impact the larger society. Side effects of development programs that seriously disrupt the established order of a society will undoubtedly have considerable influence on the formulation of development objectives.

No single set of impact indicators can be developed that is universally applicable. Each society with its unique social structure and cultural forms will, no doubt, experience unique side effects of development. In turn, each society will have its own unique set of development objectives and programs that will generate changes in social structure specific to that development effort.

All societies, however, share certain imperative needs that must be considered in any development situation. One of these societal imperatives is the

problem of the human impact on man's physical environment. In this sense, environmental indicators are needed to assess both the availability and rate of utilization of physical resources, as well as the unintended and dysfunctional consequences of development on the ecological balance in the non-human environment. Impact indicators of this type should include: 1) demographic variables such as population size, density and rates of increase, as well as migratory patterns (e.g., centralization and urbanization); 2) spatial location of goods and services and their availability to society's membership; and 3) environment deterioration (e.g., air, water and land pollution, and urban blight) brought about through development activities.

A second imperative need of a society is the establishment and maintenance of a satisfactory and operational relationship with its social environment, which includes both the problem of national boundary maintenance and the problem of interchanges across these boundaries with other societies necessary to fulfill national objectives. These problems are yet relatively unexplored by social indicator research. Some related problems which must also be examined are those of peace and security which rank high in the planning of every society, as well as considerations of costs and benefits incurred in the interchange of knowledge, technical skills, and human capital across national boundaries.

A third area of imperative societal need is the problem of integration and stability. No society is perfectly integrated, nor would perfect integration be desirable because of the static effect it would have on a society. However, human beings require a relatively high degree of predictability and order in their interpersonal relationships in order to function as a collective enterprise. Order and predictability implies structure in interhuman relationships. Social change and development implies change in social structure. Hence, development usually means some change in the established order of the society,

and to some extent, some degree of societal disorder during times of rapid change.

Social change affects social structure in a variety of ways; however, for development to progress effectively, a certain level of order must be maintained. While some societies may choose a slower rate of development to insure more orderly transition in social and cultural forms, the actual set of indicators required by a nation should reflect their unique development activities as they impact the existing social forms and create social disorders. Thus, indicators are needed to monitor 1) the effect of development on the normative basis (moral, ethical and legal) of the society; 2) the effects on institutional and interactive processes (stratification, community, family, religion, etc.); 3) the effects on the timing of human interaction (communication, transportation, etc.).

The range of impact indicators could, of course, include all of the social, psychological, political, and economic variables currently in use in the social sciences. However, by focusing on the development objectives of specific societies, it becomes possible to narrow the scope of impact indicators to those that are relevant to the particular developing society in question. The assumption underlying this methodology for indicator development is that every society is a functioning system and that development efforts are directed at problematic conditions that undermine certain aspects of the system's overall functional capacity. The social and cultural structure and processes of a society are considered to be important factors in meeting or in hindering the fulfillment of human needs and social values, become problematic to development planning only when they no longer have the capacity to meet changing social values or become a threat to the meeting of basic human needs. Therefore, indicators of social development should be restricted to social phenomena directly relevant to the development objectives of specific nations.

Response Indicators: Closely related to the societal side effects of development is the problem of human response to development. No matter how noble the motivation behind development programs, a crucial factor in assessing the priorities of development objectives is the response of the developing society's population to development: Does the developing society's membership perceive developmental change favorably? Have individuals become alienated? Has development resulted in societal unrest? It is possible, of course, to imagine a number of the questions involved; to a great extent, however, it is impossible to directly measure the response of individuals to developmental social change. Public opinion polls attempt to reflect the reactions of people in terms of their opinions on national issues. Even though information from this type of research is often helpful, it must be recognized that public opinion can be very fickle and change rapidly through time. It must also be recognized that public opinion represents the vested interests of individuals and, thus, is not always in accord with the overall interests of society. Further, expressed opinions may be only symptomatic of deeper, underlying social disorders which are not easily articulated and often are not even clearly understood by the respondents themselves. Often, what appears or is thought to be the cause of some disorder is in reality only a second, third, or fourth order spin-off in a chain of causal factors; in such instances, it may be difficult, even impossible, to establish the causal links between the particular disorder in question and the real source of disturbance.

In any event, social planners should be aware of increased social discontent and social disturbances that may accompany or follow social development activities. The term response indicators refers to objective measures of human response to development activities. On the positive side, response indicators should ideally focus on the willingness and motivation of society's members to participate in development activities; minimally, such indicators

should at least go beyond "man in the street" public opinion polls in measuring whether development activities are satisfying and meaningful. On the reactive side, response indicators should include measurements of collective social disorder (e.g., demonstrations, strikes, terrorism, revolution, civil war, genocide, etc.) as well as overt expressions of isolated individual discontent or withdrawal (alcoholism, drug addiction, petty crime such as theft and vandalism, grand larceny, homicide, suicide, etc.).

### Policy Objectives

Development objectives normally involve abstract social values such as freedom, equity, justice, and human rights, as well as national development values and priorities. Even though such values are crucial in establishing the normative framework in which development will take place, they do not provide operational guidelines for policy formation. The second step in decision making (see Figure 3) involves the problem of establishing priorities among concrete goals and development values in order to formulate policy objectives. While the setting of priorities among societal values and basic human needs provides the societal definition of the direction which adaptive social development should take for a particular society, the choosing of priorities among goals provides the basis for selecting among alternative policy objectives, strategies (programs) and tactics (projects) in a means-ends continuum of development activity.

Goals that seem reasonable, desirable, and universally acceptable (e.g., basic human needs such as health) are almost invariably too general to provide an adequate basis for policy making. Also, once priorities have been set among alternative goals, priorities must then be established among alternative strategies and tactics, in a manner consistent with or reflective of societal values. At the same time that the specification of development objectives moves from the general to the specific, from development objectives, to policy objectives,

to strategies (programs), to tactics (projects), not only the range of operational alternatives expand, but also the potential for conflict of interest increases. These conflicts of interest extend beyond the problem of elaborating social developmental goals which are universally acceptable; they involve establishing priorities among alternative goals which are consistent with the priorities established among societal values and needs.

Judgments concerning weighting of development goals will be aided by the indicators mentioned above (i.e., viability, input, and response indicator), but two additional types of indicators are needed: Goal output indicators and Goal distribution indicators (Economic Council of Canada, 1971).

Goal Output Indicators: To provide a comprehensive feedback system for development decision making, indicators are needed that measure the quantitative and qualitative aspects of specific goal areas (e.g., health, education, public safety, nutrition, etc.). Goal output indicators should provide a broad summary view of actual levels of output relative to ideal or specified development goals. Most development goals are too broad to be subsumed under one index or measurement. In many cases, several output indicators are necessary to gain a comprehensive understanding of development progress toward specified actual goals. Health, for example, necessitates a wide range of indicators of actual performance in altering the levels of morbidity, longevity, disability, nutrition, etc., in the direction of desired or ideal goals or target levels.

Too often, development has been measured in terms of project outputs such as numbers of hospital beds, numbers of schools built, and expenditures on services. In terms of social development, however, social project "outputs" are really inputs assumed as relevant in producing such socially desired output as higher nutrition levels, lower disability rates, etc. Thus, output indicators are concerned with the benefits or costs that accrue to a society

as a result of development input efforts. Output indicators should play an important role in the reassessment and realignment of goal priorities, policy objectives, strategies, and tactics in a manner consistent with social values.

Goal Distribution Indicators: While goal output indicators reflect developmental output to the total society, distribution indicators are needed to assess the relative gains that occur to the differing income classes, ethnic groups, and geographical regions of the society. The specific way in which output indicators should be disaggregated to reflect the relative well-being of subgroups may vary from one country to another.

The concern for the distribution of outputs among a society's subgroups is not merely reflective of the democratic values of certain nations of the world; instead, it is basic to the viability of a society. A society remains viable partially by meeting the needs of all its members and, thereby, reducing the potential for reactive social and negative environmental consequences. Granted, no society maintains a uniform distribution of resources and life chances; these distributions are normally observed to vary among the subgroups of society, in a manner generally acceptable to all of those concerned. However, as maldistributions approach levels critical to the viability of the subgroups, the consequences of maldistribution are no longer positive in their utility for societal viability, and instead threaten that very viability through the social disruptions and disorders that inevitably follow.

#### Policy Objectives and Strategies

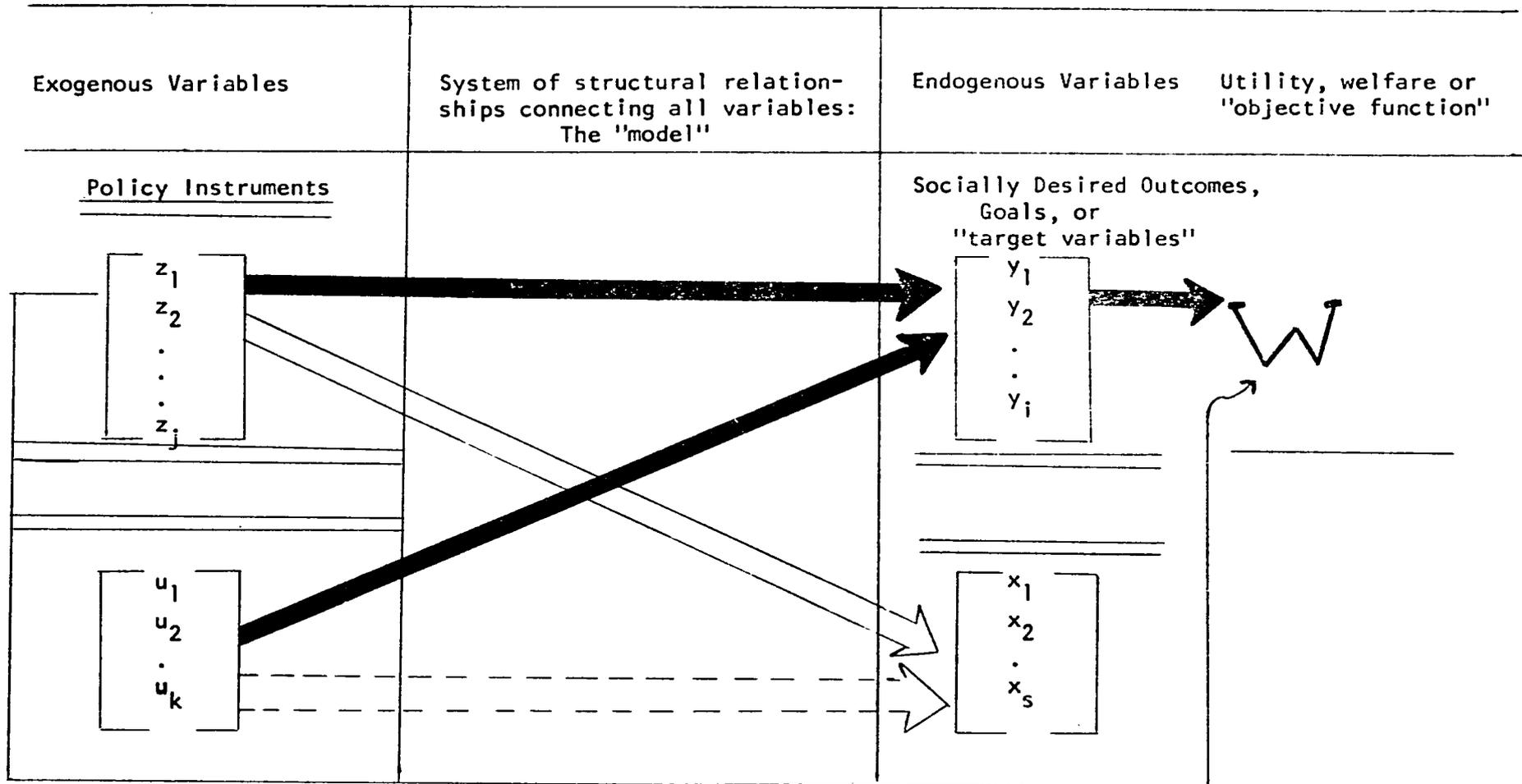
A societal feedback system, such as the one described above, should help bridge the gap between abstract values and goals, and operational guidelines for policy. A monitoring system that assists the public and the decision maker in recognizing the issues and problems they confront acts as an early warning system emphasizing anticipatory action rather than reaction. The selection of

policy objectives, however, takes place within the constraints of limited resources and in an environment of uncertainty and change.

The third step in development planning (see Figure 3) is the choice among alternative development strategies. Not only are policy objectives a function of priorities established among goals, but also must be guided by a view of the existing problem which involves an assessment of alternative strategies to implement programs and projects to reach development goals. The priorities established among goals must realistically reflect the limitations of resources and the uncertainties within which development actually takes place. Continuous feedback concerning the effectiveness of a given strategy to fulfill development goals helps to maintain a sensitivity to the tentative nature of development objectives and strategies and an openness to realignment of objectives through time. (Figure 4 about here)

In economic development, modeling techniques have been developed to assist in choosing among alternative development strategies. Tinbergen's "theory of economic policy" (see Figure 4) has greatly influenced the development of economic policy models. The central feature of this theory is the "model" composed of a system of structural relationships connecting all variables. Four types of variables are specified by Tinbergen's theory; two are exogenous to the model and two are endogenous. The endogenous variables are classified as: 1) target variables ( $Y_i$ ), and 2) irrelevant variables, ( $X_s$ ). Target variables are the socially desired outcomes or policy goals, and are included in the model by weighting to express the priorities of government officials responsible for generating development strategies. The weighted target variables are referred to as the preference function that expresses mathematically the priorities established among policy goals. The second set of endogenous variables, the irrelevant variables, are the side effects which are influenced by factors in the model but are not directly

Figure 4. The Theory of Economic Policy<sup>a</sup>



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<sup>a</sup>Classification of variables based on J. Tinbergen, "The Theory of Economic Policy", as cited in Fox, Sengupta and Thorbecke, The Theory of Quantitative Economic Policy.

relevant to the policy process in question. The exogenous variables are classified as 1) policy instruments,  $(Z_j)$ , and 2) data  $(U_x)$ . Policy instruments constitute the "means" decision makers have available for development activities focusing on the attainment of policy goals, and are manipulable variables that can be directly or indirectly manipulated by policy makers. The "data" constitute variables not subject to control by the policy maker who sets goals and uses the policy instruments in question. The operation of the policy instruments as they influence the target variables are assumed to directly or indirectly affect the utility or social objectives which is the ultimate purpose of economic policy.

Tinbergen's theory calls for extensive research to estimate the parameters of the structural model, as well as collection of the necessary information on the policy instruments and other data necessary so that the entire model may be operationalized. This type of model is in actuality a programming technique which aids in selecting between alternative strategies to realize more efficiently policy targets or goals. Targets for any planning period may represent only an incremental change toward the fulfillment of development goals. For instance, the goal of a five year plan may be a 5% per year increase in real income while the policy goal may be to raise the income level of the total membership of the society above the subsistence level. This may require weighting the preference function more heavily in favor of subsistence farmers.

Economic policy models have dealt primarily with the attainment of economic development goals. Tinbergen's logical framework and other extensions of it such as linear programming, quadratic programming and etc., can also be utilized in choosing between alternative strategies to reach a wider range of goals of social development. One contribution this type of modeling technique can make to the generation of social policy models is that it provides

a logical framework for identification of variables to be included in a policy model. Assuming that the stated preference function is consistent with the development objectives, the targets help define the instruments and data needed to develop a comprehensive structural model. The crucial factor, however, in developing usable policy models is the establishment of a preference function which states priorities between targets consistent with social development objectives. The type of information system discussed above is designed primarily to assist more systematic efforts to establish development targets that are consistent with the overall goals and objectives of development.

Policy models differ from basic research models primarily because they are designed to assist decision makers to choose and implement strategies to reach goals. Basic research models are designed to explain the operation of social phenomena. Development strategies are constrained by the availability and accessibility of manipulable policy instruments. The logical framework of Tinbergen's policy theory helps to distinguish between policy instruments and other data that serve more as structural and resource constraints on development efforts. Some of the policy instruments ( $Z_j$ ) are more manipulable than others. This fact is crucial to the policy maker. As Etzioni (1971) has stated:

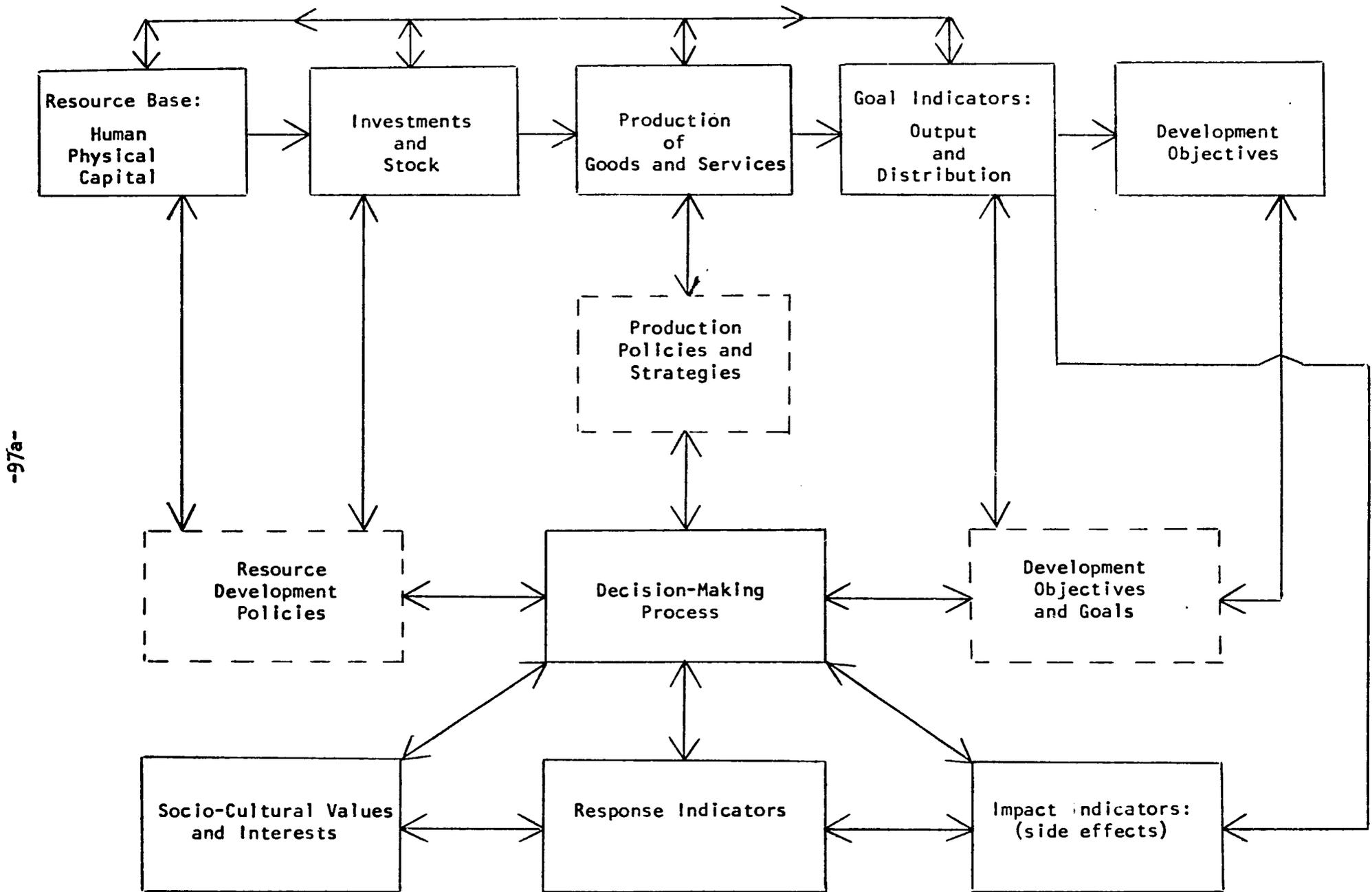
. . . there is a distinction as vital to the policy researcher and policy maker as it is irrelevant to the basic researcher, namely the degree to which a variable is 'moveable', that is, the degree to which the phenomenon it characterizes is malleable. Thus, sociologists regularly break down social data into categories of sex, education, income, class, and race since from a basic research viewpoint they all have a similar (or 'independent') status. From a policy viewpoint, however, some of these variables are 'given' or extremely difficult to change (sex), while others are relatively more changeable (income). . . the ranking of factors in terms of their malleability is, of course, important in itself . . . Policy science as a conceptual discipline must alert the researcher and the policy maker to differences in malleability; it must focus its attention and research efforts on the more moveable variables and on the conditions under which the less moveable ones can become more open to modification.

The value of this type of modeling procedure is that it helps to clarify variables that are important to the policy maker in making development decisions. Therefore, it can serve as a general methodology to aid in the identification of indicators that should be taken into account in the decision-making process by clarifying the relationships among development goals and among objectives, strategies and policy instruments.

A general methodology for the identification of indicators of social development must go beyond the traditional notion of policy models and assess the output of development to the total society in goal areas of developmental concern and to assess the side effects of development. Even though side effects are irrelevant to the attainment of policy targets, they are important to overall social development. The methodological framework (see Figure 5) for the identification and measurement of indicators of social development, as proposed in this report, focuses on the decision-making process involved in establishing priorities among values and among goals of development. Development planning, too often, goes no further than an assessment of relations among specific short-run targets. However, if social development is to become the focus of development planning, the decision-making process must be reoriented toward a more systematic attempt to clarify value priorities as weighted against societal need and the articulation of these priorities into concrete goals of social development. (Figure 5 about here)

The chart in Figure 5 attempts, in a highly simplified way, to outline the relationship of the information system described above to the decision-making process of development planning. Goal output and distribution indicators are not concerned with short-run targets alone, but with the output and distribution of development to the total society in both the aggregated and disaggregated sense. These indicators attempt to more accurately assess what is sometimes referred to as the "welfare function" or the "utility"

Figure 5. Illustrative Paradigm of Feedback Processes in Social Development



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or the direct and indirect effects on social objectives which is the ultimate purpose of development programs. Impact and response indicators in turn should provide information concerning the societal and human side effects of development programs. The flow of information provided by these four forms of indicators of social development should sharpen the understanding of the desirable and undesirable contributions of development activities and, thereby, improve the ability of decision makers in formulating socially desirable public policy.

This paradigm is suggested only as a logical framework to assist in the identification of needed indicators. This framework is built on an ideal-type model of the decision-making process. In actual development planning, the decisions are made in ways that deviate substantially from this model. However, the term social development suggests a reorientation of development planning, and in the absence of empirical referents that can serve as models to generate a methodology to meet the needs of this research problem, it is necessary to simulate or construct a model of what the decision-making process ought to be if social development is to become the norm of national development planning. To operationalize this logical framework in a modeling process, research should be directed toward specific decision-making groups and their information needs. Development objectives vary from nation to nation. Therefore, unique models should be developed around the specific development planning processes of specific nations. The methodology described in this report provides a logical framework to sensitize the researcher to the general areas of information need on which social indicator research would focus in the context of a specific developing country.

## PART V: OPERATIONALIZATION OF THE GENERAL METHODOLOGY

The methodological approach outlined in this report calls for an empirically-based inductive approach to the generation of indicators of social development relevant to the information needs of societal managers and the inclusion of such indicators, once developed, in policy models which not only allow, but also encourage the policy maker to formulate wiser policies, programs, projects, etc. based on a more critical analysis of the data at hand. Indicators are conceived as components in a model that has been generated from empirical data; furthermore, the parameters of models, which are often the most important indicators, can only be estimated from empirical data. Beyond the hypothetical and conceptual stage reached in this report, the actual construction of social systems models of indicators of social development cannot be pursued much further until extensive research is undertaken to collect empirical data to estimate systems parameters and, thereby, operationalize a model. Until such research is complete, any methodology or model remains tentative and hypothetical, a sensitizing instrument to assist the researcher in defining the nature of the problem and the kinds of questions yet to be answered.

The logical framework outlined in Part IV presents somewhat more unique modeling problems than those normally encountered in policy modeling. Most programming and simulation techniques do not go beyond the problem of choosing among targets and strategies. Some existing techniques, however, may be adaptable to the modeling problems entailed by this project's research objectives. Policy science, even though a relatively recent phenomena, is an outgrowth of earlier management science. Many of the modeling techniques developed through management science and operations research are being implemented in policy research. For instance, efforts are being made to implement mathematical tools

such as linear programming, dynamic programming, game theory and statistical decision theory, and simulation models in policy research.

To operationalize the methodology proposed herein, experimental efforts are required to assess the strengths and weaknesses of various modeling techniques in estimating the parameters of relationships among the type of variables that are potentially relevant component indicators of social development. Such experimentation requires not only the identification and measurement of potential indicators of social development, but also generation (or at least analysis) of relevant data by means of various modeling techniques. Thus, empirical data from at least one developing country, though preferably two, is required in order to empirically estimate model parameters and to test the utility of alternative analytical and statistical techniques in estimating these parameters. Only with such analyses can the utility and utilizability of the methodological framework suggested in Part IV be adequately evaluated. The proposed model-building process can only proceed if the Project can identify countries, having a substantial data base, who are willing and able to share that data and other resources in such a research venture. Recognizing that it may not be possible to immediately identify such countries and that the establishment of a working arrangement will consume a considerable amount of time, it becomes apparent that the minimum requirement is access to such secondary data sources as are available through such groups as the World Bank, UNRISD, The Agricultural Development Council, UNESCO, and various U.S. and European universities. Granted, these sources will undoubtedly not be able to supply all the data necessary for estimation of all of the relevant parameters; however, access to such data sources would provide the parameter estimation and model construction experience without which the Project could never begin to isolate the methodological tools which the Project is contracted to produce.

Within these constraints, several specific objectives of work for the next six months are proposed:

1. Continuation of the work on the general methodology, with specific focus on articulating more fully a set of Goal Output, Goal Distribution, Impact and Response Indicators. The most difficult problems will be encountered in specifying impact and response indicators, since nearly all human and social conditions are phenomena that could potentially be monitored. To develop a useable set of indicators in either of these areas of concern, considerable understanding of the unique social and cultural forms of a nation is necessary. At the very least, the examination of data from one or two specific countries will greatly facilitate development of this aspect of the methodology.
2. The second task of this period of research is to attempt to develop techniques to measure the indicators identified. Again, the way in which a variable is validly measured may vary greatly from one social context to another. Some indicators, undoubtedly, may be relatively universal in their scope; however, most indicators will need to reflect the unique social context of a society and the data availability of that nation. In order to develop such indicators more fully, data is needed from countries whose sources are available and accessible to outside research.
3. A third task of this research period is to focus on the development of one sectoral model. The health sector has tentatively been identified as the focus of this period's research. Sector analysis necessitates a somewhat different methodology, as more attention must be given to resource and structural constraints that effect the health levels of a society. Sectoral analysis is thus more concrete

and the programming problems of model building may prove to be less complex than they are at the societal level. Again, inputs from data sources will facilitate greatly the development of the sector model.

REFERENCES

- Adelman, Irma and Cynthia Taft Morris  
1971 "Analysis-of-Variance Techniques for the Study of Economic Development." Journal of Development Studies, Vol. 8 No. 1.
- Anderson, James G.  
1971 "Social indicators and second-order consequences: Measuring the impact of innovative health and medical care delivery systems." Research Memorandum No. 71-7. Lafayette, Indiana: Purdue University, School of Industrial Engineering.
- Bank of America  
1971 "Paper recycling: A report on its economic and ecological implications." A report prepared by the Committee on Social Performance Priorities. San Francisco, California.
- Bauer, Raymond A. (ed.)  
1966 Social Indicators. Cambridge, Massachusetts: The M.I.T. Press.
- Bell, Daniel, ed.  
1967 "Toward the Year 2000." Daedalus, the Journal of the American Academy of Arts and Sciences. (Summer): Vol. 96(3).
- Biderman, Albert D.  
1966 "Social indicators and goals." Pp. 68-153 in Raymond A. Bauer (ed.), Social Indicators. Cambridge, Massachusetts: The M.I.T. Press.
- Bialock, Hubert, M., Jr.  
1969 Theory Construction. Englewood Cliffs, New Jersey: Prentice-Hall.
- Blumer, Herbert  
1960 "Early Industrialization and the Laboring Class." Sociological Quarterly, 1:5-14.
- Campbell, Angus and Philip Converse  
1972 The Human Meaning of Social Change. New York: Basic Books.
- Chamberlain, Neil W.  
1965 Private and Public Planning. New York: McGraw-Hill Book Company. Scranton: Chandler Publishing Company.
- Coleman, James S.  
1964 Introduction to Mathematical Sociology. Glencoe, Illinois: The Free Press.  
1969 "The methods of sociology." Pp. 86-114 in Robert Bierstedt (ed.) A Design for Sociology: Scope, Objectives, and Methods. Monograph 9, The American Academy of Political and Social Sciences.

Corning, Peter A.

- 1971 "Can we develop an index for quality of life?" A paper presented at the Annual Meeting of the American Association for the Advancement of Science (December) Philadelphia.
- 1970 "The Problem of Applying Darwinian Evolution to Political Science." A copyright paper read at the Eighth World Congress of the International Political Science Association, August 31-September 5, 1970.

Dhul, Leonard. J.

- 1967 "Planning and prediction: Or what to do when you don't know the names of the variables." *Daedalus* (Summer):779-789.

Duncan, Otis Dudley

- 1969 *Toward Social Reporting: Next Steps*. Paper Number 2 in *Social Science Frontiers Series*. New York: Russell Sage Foundation.

Eisenstadt, S.N.

- 1966 *Modernization: Protest and Change*. Englewood Cliffs: Prentice-Hall.

Etzioni, Amitai

- 1968 *The Active Society*. New York: The Free Press.

Fox, Karl A.

- 1971 "Combining economic and noneconomic objectives in development planning: Problems of concept and measurement." Unpublished manuscript. Ames, Iowa: Department of Economics, Iowa State University.

Fox, Karl A. and Paul Van Moeseke

- 1972 "A scalar measure of social income." Unpublished manuscript. Ames, Iowa: Department of Economics, Iowa State University.

Gross, Bertram

- 1965 "Planning: Let's not leave it to the economists." *Challenge* (September-October):30-33.
- 1966 "Let's have a real state of the union message." *Challenge* 14 (May-June):8-10.

Hannah, John A.

- 1972 No title. An address made before the National Foreign Policy Conference for Editors and Broadcasters on January 27, 1972, Washington, D.C.

Harland, Douglas

- 1971 *Social Indicators: A Framework for Measuring Regional Social Disparities*. Ottawa, Canada: Department of Regional Economic Expansion.

Heady, Earl

- 1972 "Objectives of rural community development and their attainment: Consistencies and competition among various social and economic aggregates." A paper presented at the seminar on Rural Community Development: Focus on Iowa. Iowa State University: Center for Agricultural and Rural Development.

Henriot, Peter J.

- 1970 "Political questions about social indicators." The Western Political Science Quarterly.

Inkeles, Alex and Raymond Bauer

- 1959 The Soviet Citizen. Cambridge: Harvard University Press.

Kamrany, Nake M. and Alexander N. Christakis

- 1970 "Social indicators in perspective." Socio-Economic Planning Science 4:207-216.

Kaplan, Abraham

- 1964 The Conduct of Inquiry: Methodology for Behavioral Science.

Land, Kenneth C.

- 1971 "On the definition of social indicators." The American Sociologist 6 (November):322-325.

Lehman, Edward W.

- 1971 "Social indicators and social problems." Pp. 149-176 in Erwin O. Smigel (ed.), Handbook on the Study of Social Problems. Chicago, Illinois: Rand McNally and Company.

Lerner, David

- 1958 The Passing of Traditional Society: Modernizing the Middle East. Glencoe: The Free Press.

Malleman, Carlos A.

- 1972 "On the Necessity of Human Beings and His Relation to World Theories." (Unpublished mimeographed paper). San Carlos de Bariloche: Bariloche Foundation of Argentina.

McGranahan, Donald V.

- 1971 "The Interrelation between Social and Economic Development." Social Science Information, 9(6).

Moore, Wibert E.

- 1965 The Impact of Industry. Englewood Cliffs: Prentice-Hall.

National Commission on Technology, Automation, and Economic Progress

- 1966 Technology and the American Economy. Washington, D.C.: U.S. Government Printing Office.

National Goals Research Staff

- 1970 Toward Balanced Growth: Quantity with Quality. Washington, D.C.: U.S. Government Printing Office.

Nettl, J.P.

- 1967 Political Mobilization: A Sociological Analysis of Methods and Concepts. London.

- O'Connell, Harold J.  
1972 "Toward a social policy model: Methodology and design." Unpublished Master's thesis. Ames, Iowa: Iowa State University.
- Report of the President's Commission on National Goals  
1960 Goals for Americans. New York: Prentice-Hall.
- Rose, Arnold (ed.)  
1958 The Institution of, Advanced Society. Minneapolis: University of Minnesota Press.
- Seers, Dudley  
1972 "What are we trying to measure?" Journal of Development Studies, Vol. 8, No. 1.
- Sheldon, Eleanor B.  
1971 "Social reporting for 1970's." Pp. 403-436 in the Report of the President's Commission on Federal Statistics, Volume I. Washington, D.C.: U.S. Government Printing Office.
- Sheldon, Eleanor Bernert and Howard E. Freeman  
1970 "Note on social indicators: promises and potential." Policy Sciences 1(April):97-111.
- Smelser, Neil J.  
1963 The Sociology of Economic Life. Englewood Cliffs: Prentice-Hall.
- Stanford Research Institute  
1969 "Toward master social indicators." Research Memorandum EPRC-674702. Menlo Park, California: Stanford Research Institute.
- Task Force on International Development  
1970 U.S. Foreign Assistance in the 70's: A New Approach. Washington D.C.: U.S. Government Printing Office.
- Terlecky], Nestor  
1970 "Measuring progress towards social goals: Some possibilities at national and local levels." Management Science 16 (August): B765-B778.
- Tinbergen, Jan  
1964 Central Planning. New Haven: Yale University Press.
- United Nations Research Institute for Social Development  
1971 "Proposal for a research project on the measurement of real progress at the local level." Unpublished manuscript, UNRISD/72/c.10. New York: United Nations.
- U.S. Department of Health, Education, and Welfare  
1969 Toward a Social Report. Washington, D.C.: U.S. Government Printing Office.

U.S. Senate

1969 "Full opportunity and social accounting act." House of Representatives Bill No. 10116, 91st Congress, 1st Session (April).

Wallace, Walter L.

1972 The Logic of Science in Sociology. Chicago: Aldine-Atherton.

Wiener, Norbert and Karl Deutsch

1955 Communication between Norbert Wiener (M.I.T.) and Karl Deutsch (Yale University).