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BEHAVIOR CHANGE FACTORS IN DEVELOPMENT

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A MULTIFACTOR SYSTEM FOR ANALYZING AND EVALUATING ACTION PROGRAMS TO ACHIEVE THE HUMAN BEHAVIOR CHANGES REQUIRED IN SOLVING THE MASS INVOLVEMENT PROBLEMS OF DEVELOPMENT

by
Gerald F. Winfield

MASS INVOLVEMENT PROBLEMS

People in all societies are confronted with a series of complicated, difficult to solve problems that have been surfacing since the beginning of this century. These problems are for the most part not new ones, but they were previously overshadowed by a class of problems that have begun to yield to administrative solutions generated by the rapid advance in science, technology, economic development, and social change. The now pressing problems have been increased or in some cases created by the success achieved with the administratively soluble problems. The emerging problems are highly variable. They occur in all societies and may be found in almost any segment or frame of reference in any given society. Their overriding common denominator is that they are mass involvement problems. Mass involvement problems have the following characteristics:

A. They exist in social situations in which their genesis and resolution have broadly distributed causes and effects that involve a considerable percentage of the total population or of significant segments of the population.

B. Their solution requires changed behavior by a large number of people, most of whom are not related to the new behaviors in any line of command way nor can be made to act by the enforcement of a law or decree, but must be approached as more or less independent decision-makers.

C. Usually there are unused knowledge, technology, or other processes available, the wide-spread application of which will achieve movement toward a solution of the problem.

D. The factors involved in achieving the crucial behavior changes are numerous and complex and usually require a complex, multi-institutional, systems approach for their effective functioning.

E. The solutions to mass involvement problems are continuing processes which must be maintained through the sustained practice of the new patterns of behavior.

F. While administrative effort and legal controls may play a part in the solution of these problems, ultimately they can be solved only by the sustained and inner directed involvement in new ways of doing things by the large numbers of people on whom the solution depends.

Mass involvement problems are perhaps more numerous and wide-spread in the newly developing countries but they are also present and important in the most advanced countries. A brief inventory of the more clearly defined of these problems will serve to illustrate their variety and major characteristics. In the under-developed countries, they tend to be more concentrated in the rural sector, while in the more advanced countries they tend to be more concentrated in and around the cities.

Mass Involvement Problems in Under-Developed Countries

Most of the mass involvement problems of the under-developed countries are clustered around the various facets of rural development and can be seen as being predominantly focused in four categories as follows:

I. Productive Change

The problems that focus around Productive Change are mass involvement problems because populations have already reached such densities that the agricultural base of the country, that includes the majority of the people, is small-scale subsistence agriculture in which large numbers of farm families operate tiny farms, with a limited proportion of all production entering the commercial market. Productive change problems are principally concentrated on the way farmers organize and use physical things for the production of increasing quantities of farm products. There are four major sub-sectors in this category:

1. Increase Yields Per Acre.

The principal productive change required to raise the standard of life of farm families and meet the demand for adequate food for already rapidly expanding populations is the increase in yield per acre on already cultivated land. In most of the less-developed countries, most of the land that can be made to grow crops is being cultivated. However, yields per acre, even on the best land, are

frequently much below the levels that existing technology can make them produce. The problem is to get millions of farmers to master and apply the complex of improved processes that can double, perhaps triple, yields.

2. Diversify Farm Enterprises.

It is not enough just to increase yields per acre for existing crops. Farms have become so small that most subsistence farmers are chronically under-employed. To increase their productivity, they must diversify their farm enterprises both by growing a wider variety of crops to make maximum use of available land, moisture, and labor, and by adding as much animal production as is possible to convert a larger amount of their produce to more valuable forms and provide year-round productive use for their labor.

3. Modernize the Farm Business.

The behavior change required by the expansion of production extends beyond the technical requirements of increasing yields per acre and diversifying farm enterprises, to include the farm management that is involved in modernizing the farm business. In essence this is the process of shifting from subsistence farming to commercial farming. The crucial areas where behavior must be changed include such things as understanding and managing capital investment, production credit, and marketing. It includes record-keeping and learning to determine which enterprises make and which lose money

and evaluating the best use of all resources including land, labor, moisture, and all the new tools and inputs that are required to increase yields and diversify enterprises.

4. Build the Rural Infrastructure.

Increased agricultural productivity cannot be achieved by individual farm families functioning without the support of an adequate rural infrastructure. This infrastructure includes such elements as irrigation and drainage systems, road and railroad systems, markets, storage, produce processing facilities, and the like. At this level, government and agro-businesses come into play to supply needed community resources and processes to solve problems that are beyond the ability of individual farm families, working alone or in voluntary associations, to solve.

II. Protective Change

The Protective Change mass involvement problems are also heavily concerned with the management of physical things, but the outcome they seek is to protect the individual and the community by preventing clearly definable injuries. These injuries relate to the damage caused by such processes as plant, animal, and human diseases, and the ill effects of environmental pollution and population overgrowth. There are five specific protective change problems that stand out as mass involvement cases.

1. Population Control.

The most important and pervasive of these is the problem of bringing the enormously explosive human population expansion under control. The basic facts are too well known to need repeating. In the developing countries, this accelerating increase of the number of human beings is one of the primary drags on all aspects of development and modernization. This is the mass involvement problem par excellence. The solution to the population problem requires the reduction of births to match the already fallen or rapidly falling number of deaths. This can be accomplished only by the almost universal modification of reproductive behaviors on the part of the entire human race so that instead of having 4 to 10 children per family, the number will drop to 2 to 3, or less. These are behaviors that are propelled by one of the most fundamental drives that shapes and controls human action, that are practiced from 1,500 to 5,000 times over the normal 30-year reproductive life of each woman, and the control of which is the most private and individual of all human activities. One could hardly imagine a more formidable array of obstacles to overcome or a more universal problem to be solved.

2. Nutrition.

The problem of improving the nutrition of populations in the under-developed areas includes at least three major aspects. (1)

Making full nutritional use of available foods and economic resources. This is largely a matter of better information and motivation to change deep-seated behavior patterns of mothers and grandmothers in preparing and serving food. It is here that the greatest mass involvement is required. (2) Expanding the buying power of rural and slum dwelling city people to make it possible for them to spend more on their food. (3) Increasing the amount, quality and variety of foods, including processing, packaging, and distribution, to provide a more abundant and well-balanced source of foods from which to put together economical high-quality diets.

3. Fecal Borne Disease Control.

This is the problem of environmental sanitation and the provision of safe water supplies. In its sanitation component modifying the defecation habits of rural people so that they construct and use effective facilities is the heart of the problem. Success depends on changing a complicated set of emotionally laden, regularly practiced behaviors. In many countries, particularly in the Orient, the sanitation problem is complicated by the basic requirement to return human wastes to the soil as fertilizer to make possible sustained high crop yields. Even in the advanced countries, as populations become more dense and water supplies become more loaded with wastes it may become necessary to develop and use systems of human waste

disposal that make use of the soil medium, specifically the compost heap, as a more effective means of handling human excreta.

4. Environmental Pollution.

As modernization and urbanization take place and standards of living rise, the capacity to generate increasing quantities and varieties of pollutants that tend to destroy the livability of the environment increases rapidly. In the under-developed countries, these problems have become acute only in large cities but they are destined to multiply and increase as development proceeds. It is none too soon to begin to focus attention on them and seek to build solutions as the problems arise. The solution of pollution problems will be a mixture of mass action behavior changes and of administrative enforcement of legal requirements. Because every family and individual produces pollutants the mass involvement component of environmental pollution control will have to be a significant part of the process by which the protection of the environment is achieved.

5. Control of Communicable Diseases.

The final type of protective change that has a mass involvement dimension is the control of communicable diseases other than fecal borne diseases. This group of diseases is steadily yielding to the attack of research directed to developing systems of immunization, on the one hand, or case finding and early and effective treatment

by a variety of means, on the other. The mass involvement process tends not to be as important in the control of these diseases as is the administrative and line of command control over behavior. Nevertheless, there is an element of mass cooperation required in making it possible to apply the preventive and curative procedures to the huge numbers of people who must be reached. This mass involvement behavior is more significant in the less-developed countries because populations there are still in the process of learning how cooperation in the control of these diseases works and is of advantage to them.

III. Social Change

The third category of mass involvement behavior change that is necessary for development relates to how man behaves in organized groups. For the purposes of this discussion, Social Change is defined as the modification of organizations and institutions through which people attack and solve specific problems that must be dealt with if development is to take place. What is changed is the structure, functioning and relationships of social organizations. The product is greater effectiveness or efficiency in the performance of the tasks of those organizations. There are four major types of institutions that are crucial to the social change that is required for rural development in the less-developed countries.

1. Local Government.

The modernization of local government to be technically competent and politically responsive to the needs of the people in its jurisdiction is probably the most important and urgent of the social change processes. This change, regardless of the nature of the central government under which the local government functions, must be in the direction of greater citizen participation, and increased political and technical skill in the bureaucracy.

Government is the only institution capable of the over-all allocation of resources and of providing the many modern services that must be available at the local level if the productive and protective changes already listed are to be performed by the people. Development is heavily a political process, not only at national policy-making levels but also at local operational levels. Local government is a mass involvement process for it must be interactive with the entire population both as leader and as responsive servant. This is one of the most important of the arenas of development.

2. People's Organizations.

For a vigorous modern society to develop, capable of responding continually to the changing needs of its members, a wide range of people's, that is non-governmental, organizations must come into being, everything from PTAs to political parties. These organizations must serve to aggregate the interests of their members and express them either in direct action toward the solution of the

problems that can be handled at their level or as means of communicating aspirations, needs, or demands to government. In their totality these are mass involvement processes.

3. Rural Education.

A third area of social change is rural education. This area is faced with an important dilemma. On the one hand, to gain and hold the support of the rural population, the educational program of the schools must be of a nature and quality to prepare rural youth for entry onto the growing number of ladders that lead to advancement in the modern urban and industrial trades and professions so that many who wish to do so can leave agriculture and have significant opportunities in the modernizing sectors. On the other hand, rural education must prepare those who stay in agriculture for the increasingly competitive and complicated profession of being successful commercial-scientific farmers who can raise both yields of their land and standards of income and living for themselves and their families. This latter process requires a carefully adapted in-school program and a vigorous adult-education effort. The numbers of those involved, as citizens that influence the character of the education process and as participants as parents and/or learners, are so large as to make many of the decisions and the on-going behaviors mass involvement ones.

4. Land Tenure Systems.

Land tenure systems set the rules under which farm people have access to the most fundamental capital good of rural life, the land. What the rules are and how they work in practice are heavy determinants of the way in which incentives to change and modernize appear to the farmer. Both the substance of the rules and the ways whereby they are changed are matters of great political import. The communist movement in many countries has skillfully harnessed the needs and drives in this area as major techniques for gaining the support of peasants and so gaining power for themselves. The reform of land tenure systems is a mass involvement issue that is extremely political in addition to having important social, economic, and technical aspects. The behaviors that are involved in successful solutions to this problem are, therefore, complex and heavily laden politically, requiring varying degrees of direct mass action.

IV. Attitude Change

The fourth category of change that is relevant to the achievement of solutions to mass involvement problems is attitude change. In tackling the task of changing attitudes one has moved completely away from the management of physical things and is dealing entirely with immaterial processes. The stuff that is worked with is knowledge, information, experience, emotions, human communication and interactions. One must understand the personal, social, and

cultural values that are held by those whose behavior must be changed and have some feel for how those values relate to both the old and the new behaviors. One needs also to understand the nature of the roles that are accepted by the target group which are relevant to the behavior change, and one must be aware of how those roles may be affected by the new behaviors. The goals, both personal and group, that the persons involved in the behavior change seek, will also be important as factors to be understood and reckoned with in dealing with the attitude change component.

The specific attitudes that may be significant will vary with the nature of the problem that is attacked and the structure, values, roles, and goals that are parts of the culture of the target audience. Among attitudes that may be significant are those toward the family, change, nature, status, wealth, work, government, the opinion of the neighbors, and many others.

Some mass involvement problems are primarily attitude problems. Among the most clear cut of these are the problems that exist between majority and minority groups particularly those based on race, religion and nationality. Every major society in the world has this class of problems.

In reality the four categories of change (Productive, Protective, Social, and Attitude) do not exist in water-tight compartments. In any specific action program directed at a mass involvement problem, while the major action may center in one of the categories, it is

highly probable that all four of them have a significant impact on the nexus of complex processes by which such problems can be successfully attacked. It is necessary, therefore, to be constantly alert to the interactions between these categories of change as we build and illustrate the Multifactor System that is required.

Mass Action Problems in the United States

The under-developed countries, because they have not reached such a high level of specialization, have a greater number and variety of problems that are of the mass action variety than do the industrialized countries. This is in large measure because an important part of the development and industrialization process tends to bring more and more aspects of life under management control with a corresponding reduction in problems and processes that are dependent on the relatively independent action of large numbers of individuals. Nevertheless, the advanced countries also have mass action problems. For example, the United States has at least four problem areas that are to a considerable degree mass action problems.

1. Environmental Pollution.

The pollutants that are increasingly threatening the land, water and air in the United States are generated by many types of agents and institutions. Some among them are of the mass action variety that can be solved only if the large numbers of

pollutors, usually working in concert, change their behaviors to either reduce or make possible effective ways of dealing with the pollutants they generate. This applies to such areas as air pollution by automobiles, the collection and handling of household garbage and trash, and may increasingly apply to sewage collection and disposal. The big industrial pollutors are another matter. Here the behaviors involved and the power to change those behaviors are lodged in huge and not so huge industrial organizations. The processes by which these organizations are brought to take responsibility for their handling of industrial wastes so that they are not destructive of the environment almost certainly will involve massive effort by an aroused citizenry using persuasion, economic pressure, and governmental authority.

2. Population Limitation.

Population growth and the requirement for its future limitation is the second mass action problem that is significant in the United States. Although population growth has already begun to decline, the over-all impact within even the American society is still very important and it is not difficult to prove that if the environment is not to be completely destroyed further decline in population expansion is required.

When special populations, particularly that 20 to 30 percent that are listed as poverty-stricken, are focused upon, the population limitation requirement stands out with special vividness.

This is a mass action problem with all the characteristics that have already been outlined. With respect to poverty-stricken populations, there are a number of special dimensions, one of the most important of which is the widely-held feeling in black communities that efforts to reduce birth rates among blacks, are, in fact, a racist attack on the black community. Even with this feeling put aside, the actual process of reducing births among those parts of the American population that have the highest birth rates take on many of the same types of difficulty that surround the introduction of family planning in under-developed countries. For our purposes it is enough to note the existence of the problem of population limitation in the United States.

3. City and Ghetto Problems.

The last 15 years have seen dual migrations that have dramatically changed the makeup of many American cities. The first of these is the migration of black populations from tenant farms and poor communities throughout the South, from which they have been squeezed out, by the application of soil-bank and other policies, to the cities of the border states and to the North. This migration has resulted, for example, in Washington, D.C. becoming a city of black people, many of them recently uprooted from rural and in some cases quite primitive environments. As they have come in to the heart of the city, they have been crowded together in low-standard housing, seriously inadequate in both

quantity and quality. They have left behind those elements of stability and community that have been important parts of their lives and have come into configurations that were not always conducive to the generation of new community relationships; and so the black ghettos have been created.

The second migration has been that of whites out of the hearts of cities to the suburbs. With them have gone much of the previously existing buying power and much established leadership with concomitant impact on the situation in the cities.

In the cities and the ghettos there have been spawned a wide variety of problems ranging from education to crime which are not susceptible to solution except as many behavior patterns exercised by large numbers of people are effectively changed. This group of mass action problems is important and will be difficult to solve.

4. Race Relations.

The biggest, most pervasive and most difficult of the mass involvement problems that confront the American nation is that of race relations. The core of this problem is a set of deeply engrained attitudes that have been generated out of the history of our nation. It is not necessary to go into how this problem has arisen. The only purpose is to focus attention on the problem as an example of one of the most abstract and complicated of all the mass action problems.

The types of behaviors that must be changed, if race is to cease to be a divisive and violent element in American life, are deeply engrained attitudes and emotions that spawn a wide variety of overt actions that mark one race with the stigma of inferiority, and consciously or unconsciously inflate an unjustified assertion of superiority by the other. While there are important areas in the race relations arena that can be influenced by legislative and other administrative actions, so much of the problem lies at deeper levels in roles, goals, and values that a real solution to the race problem can be achieved only with far-reaching changes in basic attitudes and their working out into new behavior patterns from which this superior-inferior complex is eventually eliminated. This is, indeed, an enormous challenge to every American.

BEHAVIOR CHANGE

We have now examined in some detail what is meant by mass action or mass involvement problems. By definition, this class of problem can be solved only through changing specific behavior patterns in large numbers of people. In seeking to design action programs that are relevant and effective in changing behaviors that lead toward solutions to this class of problems, it is necessary to consider seven inter-related sets of factor systems that must be understood and given weight in action programs. These factor systems are:

I. Identification of problem and specification of solution.

II. Target audience factors.

III. Political-Social-Communication matrix factors.

IV. Factors in behavior change packages.

V. Institutions that generate change package factors and establish the matrix.

VI. Language/Cultural transformation.

VII. World scientific and research systems.

We shall now turn to a detailed examination of each of these seven factor systems.

I. Identification of problem and specification of solution.

In the solution of any problem, the clear and accurate definition of the problem, including the relevant internal characteristics that determine the actions which will constitute a solution, is a first necessity. By the nature of the case, the definition of mass action problems is at once important and difficult. In defining the problem, it is important to seek to determine the degree to which the problem is, in fact, a mass action problem and to identify that part of it which may be handled by the enforcement of law or decree. It is also necessary to define to what degree there is some chain of command or administrative authority that can enforce the changed behavior and with what degree of permanence the new behavior can be enforced. It is desirable to determine both the points and flows

involved with policy formation, decision-making, and specific implementation for each element in the solution to the problem.

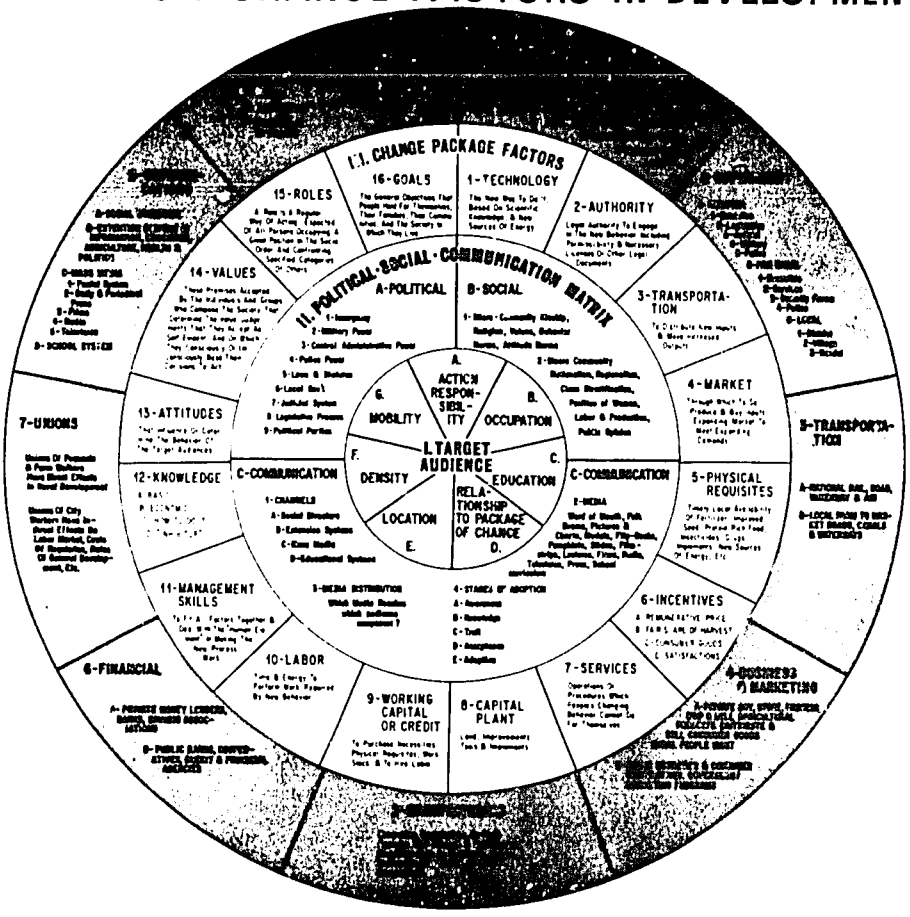
Finally, it is extremely important to determine to what degree the persons or groups whose behavior change is crucial to program success are, in fact, able to act as independent decision-makers and to implement the changed behavior.

All this is aside from the necessity of defining specifically the technical and substantive part of the behavior change that is required for the problem under consideration.

II. Target audience factors.

Having defined the nature of the problem and specified both technical and social aspects in its solution, it is necessary next to define specifically the target audiences who are involved in the behaviors which must be changed to solve the problem. In thinking of these groups, attention should be focused first on the "end-use" doers. These are the people whose behaviors when changed will solve the problem. All too frequently we have attacked our planning by focusing attention on institutions or groups that are far removed from the final arena in which the solution to the problem takes place. In order to visualize effectively the complex relationships which will be presented, frequent reference is made to the diagram in Figure 1. Note that in the diagram one reads from the inner circle out. The target audience occupies ring I of the diagram.

BEHAVIOR CHANGE FACTORS IN DEVELOPMENT



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A. Action Responsibility.

In determining the specific action responsibility of the target audience in changing behaviors to solve mass action problems, four functional subcomponents of the target audience should be delineated. They are:

(1) Direct Action Audience.

The direct action audience is made up of the persons or groups that must take primary responsibility to practice the changed behaviors that are essential for the success of the change package. They are the end-use doers and are the people on whose behavior the activity of the other audience sub-groups focuses. For example, in family planning the direct action audience consists of the married couples whose reproductive behavior must be modified to limit the total number of children they have in a lifetime. In some types of mass involvement problems, the direct action audience, on the basis of the specific behaviors that must be changed, may be divided into primary and secondary groups. This is the case in family planning since the behaviors of the marriage partners vary according to whether the specific contraceptive being introduced is a male contraceptive or a female contraceptive. If the contraceptive is a female device, then the wives constitute the primary direct action audience and the husbands the secondary direct action audience. If it is a male device, then the opposite is true.

(2) Indirect Action Audience.

The indirect action audience is made up of all those organizations and persons which are responsible for making available to the direct action audience the new knowledge, the new resources, the new services and the new motivation required by the new behavior. In the family planning example, this means that the general and specific family planning elements of health ministries and departments, the services of doctors, pharmacists, nursing systems and all other agencies that play an organized part in moving either information or supplying necessary material requisites or services in the family planning area belong to this indirect action audience. It is this audience in which the professional change agent is most likely to function. It is here that A.I.D. programs make their contribution to the problem-solving process.

(3) Direct Support Audience.

The direct support audience consists of the micro-community in which the direct action audience lives. It comprises the siblings, the extended family, friends and surrounding social groups whose norms and opinions have effect on the behavior of the direct action audience. Communication research in all parts of the world has shown that the powerful levers for changing strongly held opinions and in modifying deep-seated behaviors tend to be in the micro-community. Here are found the opinion leaders who, because of the nature of their pre-existing social relationships, have the greatest influence in changing

people's emotions and actions. In most mass action problems, the effective use of this direct support audience to influence the behavior of the direct action audience must be effectively implemented.

(4) Indirect Support Audience.

The indirect support audience is made up of the national and local leadership and the general public that must build and support the norms and attitudes toward change and toward solving the specific problem under consideration. The degree to which this audience is crucial to behavior change will vary considerably with the nature of the problem. In family planning it is highly important. In improved rice yields it may be of less importance since motivation to grow rice is much more affected by tangible, economic factors.

In analyzing program requirements, the specific behaviors of each of these four types of audiences must be understood and should be written out point by point so that judgments may be made on relative priorities and on specific actions designed to stimulate each audience to carry out its necessary actions, all pointed to the purpose of changing the behaviors of the direct action audience.

The over-all purpose of orchestrating the action of these interrelated audiences is to achieve in the direct action audience, as expeditiously and economically as possible, the specified behavior changes needed to solve the problem and to change behavior in a

sufficiently large percentage of the group to achieve the minimal critical mass required to sustain the behavior change. Minimal critical mass in behavior change is analogous to minimal critical mass in an atomic reaction. In any radioactive material there is a minimal critical mass that must be reached by the degree of concentration of the material before the chain reaction will be sustained. This is also true in behavior change within a social group. People will change their behaviors under the stimulus of an action program as long as that stimulus is applied, but if minimal critical mass has not been achieved, the change process will stop when the action program ceases to apply stimulus. Since the solution of mass action problems requires permanent changes in behavior, it is crucial that the design of the effort should seek to determine what the minimal critical mass is. Whether or not the action program is designed to achieve minimal critical mass becomes an important criterion for evaluating the adequacy of the action designed.

B. Occupation.

In all parts of the world but perhaps more specifically in the under-developed countries, occupation is an important factor in determining many types of behavior. In analyzing target audiences it may be important to be able to know specifically the occupational break-down of the target audience. In countries where recent and detailed censuses have not been taken, it may not be

possible to make a full occupational break-down, but for planning purposes, a break-down into (1) agriculture, (2) government, (3) business and professions, (4) manufacturing and transportation, and (5) services will probably be adequate.

C. Education.

Specific knowledge of the educational makeup of the target audiences is important since it determines both what channels and media of communication can be used effectively and will influence heavily how information is understood and reacted to. A useful working classification would divide the audience into the untutored, those who have had no schooling and are illiterate; the literate, those who have primary school or adult literacy training and can therefore read and write; and the educated, those who have had secondary school or higher education.

D. Special Relationship to the Package of Change.

In many mass action problems there may well be a special factor that is of extraordinary importance. In the family planning field, marital status and the number of living children is such a factor. In agricultural production land ownership carries special significance for the way people behave. Each mass action problem should be examined carefully to determine whether or not such a special factor exists and what its impact on the behaviors involved in solving the problem may be.

E. Location.

In designing and carrying out mass action programs, perhaps the most important and persistent single difficulty is that of how the program makes and sustains contact with the various target audiences. This is true in developed as well as under-developed countries. Therefore, the location of the specific target audience elements as between rural and urban and as related to space and lines of communication for information and for the movement of people and things are all important factors to be specifically understood and incorporated in planning.

F. Density.

The knowledge of space distribution of target audiences is important for planning purposes. If the area is sparsely populated, say with no more than 10 persons per square mile, the problem of contact will be particularly difficult. In practice, population densities in rural areas can be expected to range upward to densities that may reach 2,500 to 3,000 persons per square mile. For many types of problems it may be sound strategy to begin efforts in more densely populated areas. Judgments as to the weight of this factor in planning a program should be carefully made.

G. Physical Mobility.

Target audiences in under-developed countries may be quite limited in their physical mobility. One should, therefore,

determine what proportion of the audience is limited in its mobility to distances that are in walking range. As a rough rule of thumb, this would mean that supplies, information, inspiration, physical requisites and organizational contacts will have to be placed within one to five miles of the house of the person. If rural people possess bicycles then the mobility radius may go up to say 2 to 10 miles. If there is bus service, then the radius is 5 to 25 miles, but if the target audience is composed of people who move by automobile, then one may expect to bring contacts within a radius of only 10 to 50 miles.

III. Political-Social-Communication Matrix Factors

The target audiences whose behavior mass action programs are designed to change live and function in a political-social-communication matrix that is represented by ring II in Figure 1. This matrix differs in each locality and must be understood by the field operator. The principal significant elements of this matrix merit consideration.

A. Political.

The political factors bear on the problem-solving process with a considerable amount of weight. In some situations, such as now exists in Viet-Nam, the conflict and problems of the changing society have erupted in insurgency and war. In other situations, pressures almost as tense exist but are restrained to act in and through

political systems that range all the way from primitive, or traditional-medieval forms at least at the local level, to military dictatorship and to new democracies struggling to achieve a sufficient command of government functions to operate a modernizing state.

Historically, in its assistance to development, the United States has attempted to hold its involvement in the politics of the country to the smallest degree possible. Many technicians and project designers and operators have approached their task with the avowed purpose of remaining completely free of any kind of political involvement. They have said, "We just want to help the agriculture or health, or what have you, of this country and please keep the dirty political stuff off our necks." This position has grown from an over-simplified belief that development is primarily a technological matter and that if one is able to come in with a new technology that solves a given problem, one need not be involved with politics.

At the other end of the spectrum stands Mao Tse-tung and his equally over-simplified position that says: "Politics rules all." The Mao position holds that if the people get their political loyalties sorted out and throw themselves into the development process with political and social fervor, then the thoughts of Mao will make it possible to solve all problems. Within this framework, technology is of no particular importance.

The truth, of course, lies between these two extremes. Development does have to take place in a political context. The nature of the political philosophies, organizations and functions that are going forward in the society are powerful influences on the behaviors that must be changed if mass involvement problems are to be solved. The development planner and operator therefore must understand and plan within the political realities of the situation where he works. Indeed, political forces will have to be harnessed in the construction of many behavior change packages as we shall see later.

B. Social.

(1) The micro-community of intimate relationships.

We have already seen how important the micro-community is as the direct support audience that exerts great influence on those whose behaviors must be changed. This micro-community is made up of family, kinship, friendship, religion, values, roles, goals, attitude norms, behavior norms, age pattern in relation to power of decision, and a system of rewards, punishments and sentiments, among other things. It is here that culture and cultural difference both within the country and with external change agents and assistance programs have their most significant effect. Any successful program of mass behavior change will have to include an extensive and accurate understanding of the micro-communities and relationships that function through them.

(2) Macro-community of general relationships.

In the wider community such factors as nationalism, regionalism, class stratification, position of women, the factors of labor and production and public opinion exert important influences on the total society. They, too, may have considerable influence on behavior and so must be understood and made use of.

C. Communication.

(1) Channels.

There are four channels of communication in any society. They are:

(a) The social structure.

The social structure consists of the micro-community as outlined above with all of the pre-existing patterns of relationship that determine who speaks to whom, who listens to whom, who is influenced by whom. This is the communication channel that exerts the greatest influence, but because of its nebulousness and complexity it is not an easy channel through which to work. The arenas of action in the social structure where communication happens are many and varied, tending to cluster around the market place, the teahouse and other means of amusement and entertainment, the religious life of the community, the family, its gatherings, relationships, and functions; and those associations and organizations that have developed in traditional societies around occupation and locality.

(b) Extension Systems.

Extension systems in agriculture, health, and adult education are new organizations which are based on membership, small group relations, and volunteer workers to sustain patterns of contact and instruction throughout the society. They function in such arenas as operating centers and offices, farm and home visits, tutorial and small group instruction; and by use of large group and specialized public meetings, including farm tours, exhibits and fairs. Recent research on the diffusion of innovations in a number of under-developed societies has again underlined the great importance of agent contact through extension service operations as a primary means of propagating new ways of doing things.

(c) Mass Media.

All forms of the mass media, printed, films, and electronic, are growing steadily in the under-developed parts of the world. As a channel of communication for behavior change these media are quite important, functioning primarily at two levels: first, as a means of introducing the messages and necessary instructional information to direct action audiences and their surrounding micro-communities where those messages can be used in the special leverages of face-to-face communication, and second, for wider dissemination to the public opinion forming ranges of leadership and the macro-community. In both of these ranges the most effective use of the mass media requires careful planning and evaluation.

(d) Educational System.

The educational system, particularly primary education, is the fourth major channel of communication in a society. This channel is mostly concerned with the transmission of knowledge and experience from one generation to the next and in generating the wide ranges of knowledge which provide the operational background against which people learn to act with a sense of psychological security because they understand more and more about the world that surrounds them. In the long pull, the educational system is a channel of communication which cannot be over estimated. On a shorter range basis, the rural school, particularly the community rural school, has an extremely important role to play in the total development process and in assisting the solution of mass involvement problems.

D. Media of Communication.

Within each of the channels of communication and adapted to appropriate arenas of action, one or more of the following media of communication may be appropriate to use: word of mouth, action example, folk singer, story teller, folk drama, puppet shows, instruction using real things in connection with services, pictures and charts, models, word dominated pamphlets, picture dominated pamphlets, flipbooks, flash cards, method demonstrations, result demonstrations, slide sets, filmstrips, lectures, illustrated lectures, panel discussions, films, radio forums, television forums,

postal system, daily press, periodical press, commercial films, educational films, radio, television, school curricula.

E. Media Distribution.

A crucial factor in evaluating the usefulness of each of these media is an accurate awareness of how the individual medium is distributed in the society. It is necessary to have specific answers to such questions as: which media reach which components of the target audiences? what are the shortcomings of media distribution? can these shortcomings be remedied?

F. Stages of Adoption.

Research on the diffusion of innovations carried out in the United States and in many other parts of the world has indicated that no matter what the innovation, school teachers adopting new methods of instruction, doctors adopting new drugs, farmers adopting new cultural practices, etc., typically individuals pass through a definite sequence of stages in the adoption process. These stages have been outlined in slightly different terminology, by different investigators, but a widely accepted sequence is as follows: First, Awareness. The individual comes to know about the innovation. Second, Knowledge, in which the individual acquires sufficient detailed knowledge of the innovation to begin to form a judgment as to its usefulness to him. Third, Trial in which the individual tries the new practice or participates in a demonstration which provides him with a vicarious trial in which he is satisfied that

the conditions of the demonstration completely duplicate his use of the innovation. Fourth, Acceptance. This is a crisis in which after the trial or demonstration the person accepts or rejects the innovation. Fifth, Adoption in which the innovation is completely incorporated as a habitually-used new practice that becomes a more or less permanent part of the adopter's behavior pattern. Sixth, Disadoption in which the adopter gives up the practice. Disadoption is likely to happen in a percentage of cases for any of many types of reasons. This is another way of saying that no matter how effective a program is, it is likely not to be adopted by 100 percent of the target audience and if it is, some percentage will disadopt.

IV. Factors in Behavior Change Packages.

Thus far in our analysis of factor systems we have looked at the definition of the problem, the major characteristics of the target audiences, and have noted the major influences that operate through the political-social-communication matrix. Now, as shown in ring III of Figure 1, we focus attention on the factors that make up the package of influences that directly bear on the behavior change we seek to propagate. In one sense, to speak of these factors as a "package" is not good since it injects a notion of rigidity and finality which is far from true. However, I use it because it does focus attention on the idea that there is a definable, examinable, and manageable set of factors which taken together will generate a situation that will make it possible for a large percentage of the

target audience to adopt the new behaviors that are required for success in solving the problem under consideration.

Focusing attention on the behavior of the target audience, there are four key questions which the innovator must ask himself, and ask the situation, as he seeks to determine the specific content of the behavior change package. These questions are: First, to adopt and sustain the practice of the new behavior, what must the direct action audience know that they do not now know. Second, what new resources must they have that they do not now have. Third, what new services must be made available to them that they do not now have. Fourth, what new feelings must they have that they do not now have. If the action program is successful in seeing that new knowing, new having, new services and new feeling are brought together in time and space within the control of the individuals who make up the direct action audience the probability should be high that those people will adopt and practice the new behavior.

It should be emphasized that what is relevant in the answer to these four questions needs to be common sense and practical in its nature. Every effort should be made to keep this analysis from taking on an academic character so that it becomes highflown and abstruse rather than practical and operational.

As an approach to identifying specific details involved in formulating answers to these four basic questions, sixteen factors

which must be considered have been identified. It should be emphasized that this list is designed as a checklist of questions which the program designer or evaluator asks himself and asks about the specific operating situation before he can assign the factor a place in the package that is judged to be essential to achieving the behavior change required, or decides that it is not significant to the problem. While the answers he seeks must be rooted in an awareness of the total population of events that bear on the factor, it will not be necessary to have completely researched quantifiable answers to all of the questions he considers. The sixteen factors (see Figure 1, ring III) are as follows:

1. Technology—the new way to solve the problem based on scientific knowledge of how nature really works or on new sources of energy. The peoples of the under-developed parts of the world through centuries of imperical experience have achieved, in many cases, remarkably efficient levels of using existing resources. It is therefore rare that an advance toward the solution of a problem can be made by simply reshuffling the technology that is already available. In most cases, advance is dependent upon the introduction of some new type of technology. To be effective this technology must be soundly based on extensive research and must be exhaustively tested in the operating framework within which it is to be applied in the program being designed. All too frequently we have geared up an effort to introduce a new technology

which was seriously flawed in one way or another so that it was unacceptable from the point of view of the direct action audience and so was not an effective technological answer to the problem.

2. Authority--to engage in the new behavior including permissibility and necessary licenses or other legal or administrative documents which makes the changed behavior possible. A precise determination of the authority factor in all of its possible ramifications is highly important. Many developmental programs have failed because this factor was not sufficiently understood and provided for in the operational design. Within the framework of the requirements of the agencies that provide assistance, this factor can also be of considerable importance. In the A.I.D. program, for example, the planning and money-committing documentation in terms of project agreements, E-1 forms and other program documents are the instruments by which the authority to expend resources on the program is achieved. Without this documentation, nothing can go forward.

In many situations it may be necessary to obtain the passage of new laws or the issuance of decrees or regulations to provide the authority base for the new behaviors. On the other hand, one should not assume that the passage of the law will result in behavior change. Indeed, in transitional societies the operative impact of laws or regulations may be of minor effect.

3. Transportation--to distribute the new inputs and move the increased outputs and to move the people who must come and go as they learn and manage the new processes. Transportation is a particularly crucial factor in many programs that deal with rural problems. This is due to the nature of the agricultural process which is designed to catch energy as sunlight strikes the chlorophyll of plants. This requires that plants be distributed over a wide area since sunlight hits the earth in a thin, even layer. Such processes, then, require that large tonnages of new inputs, such as fertilizers, be distributed to farms and that many tons of increased production be transported from the farms. A change in the cost of transportation can have a crucial effect on whether or not the production of a crop makes or loses money for the farmer.

4. Market--through which to sell produce and buy inputs and consumer goods, expanding and modernizing systems to meet growing needs and demands. The productive change aspects of rural development are dependent upon marketing arrangements. The marketing institutions and organizations must perform a wide variety of functions efficiently and well if full advantage of increased production is to be achieved. It is therefore clearly an important factor in productive change programs, but it may also be of considerable importance in protective change and social change types of activity.

5. Physical Requisites—timely local availability of fertilizer, improved seeds, insecticides, drugs, contraceptive devices, mixed feeds, protein-rich food, sources of energy, etc. Points to be emphasized relate to the importance of timeliness — subsistence farmers cannot afford to buy and store fertilizer over a crop cycle. If the material is not available to them at precisely the time they need to apply it to their crop, it will simply not be used. Package size — the size of the package in which the input is provided — may be very important to whether it is bought and used or not. If it is too big to be easily handled or is packaged in quantities that are too big in cost so that it does not accurately fit purchasing power, it will not be used. Transportation distance — the physical requisite must be located within the transportation range which the end-user himself commands. If he cannot readily transport the input from the purchase point to his farm, he will not use it.

6. Incentives. There are four components to the incentive factor as it bears on a willingness to make the extra effort required by new behaviors. They are:

(1) A remunerative price for the increased production in productive change programs. Price is deeply effected by policy. Government has an important role to play in determining price policy by which given production incentives are instituted.

(2) Fair share of the harvest. A farmer will not have a strong incentive to take risks and make extra efforts to produce if he knows an unfair share of the output will go to the land owner or the money lender. Land reform may therefore be a key requirement in providing adequate incentive for production.

(3) Desired consumer goods. Experience in all parts of the world has shown that the extra efforts to produce and to deal with new problems is related to the availability of desired consumer goods in the market. In many places the desire for a transistor radio, a flashlight, a bicycle or some such immediately useful or status-giving commodity has supplied the push needed to change ways of doing things.

(4) Satisfaction in status and esteem. The desire for recognition, for elevating ones position in the eyes of his neighbors, and of becoming esteemed in the community through his success, his service, or by other achievements prized by his group constitute important stimuli that may provide incentive for change and improvement. It is necessary to be familiar with the nature of this type of factor as it operates in the specific social group.

7. Services—that are crucial to the new behavior and are of such a nature the direct action audience cannot provide them for themselves. These.services include such things as the systems that provide for innoculation of animals against disease, the provision of diagnostic and treatment services in human health, the insertion of intrauterine devices in population control, and the like.

8. Capital Plant—land, improvements, tools and implements. There are many mass action problems that do not have a heavy capital plant component. Whether this factor is significant must be determined in each specific case.

9. Working capital or credit—to purchase necessities, physical requisites, work stock, and to hire labor. An effective system to provide for this factor may be crucial in many packages of change although it may have no bearing on others.

10. Labor—time and energy to perform the work required by the new behavior. The introduction of a new technology or the assumption of a new behavior pattern to solve a problem may well require an increased application of labor either in terms of more intensive or more extensive effort. How onerous to the target audience is this effort going to be? Will the satisfactory outcome of the new behavior more than compensate for this new effort? Will the increase in labor be so great as to require the hiring of additional workers? An understanding of and estimate of the effects of this requirement is necessary in designing behavior change packages.

11. Management skills—to fit all factors and functions together into profitable combinations and deal with the "human element" in making the new process work. The development of new ranges of management skills in the direct action audience is frequently a matter of crucial importance. A major portion of

the change which a peasant farmer must make in order to become a modern commercial-scientific farmer is the acquisition of a considerable range of new management abilities with respect to such things as planning for his capital investments, making full use of modern marketing processes, improving his management and record-keeping with respect to his own and any hired labor he uses, and learning to think about each of his farm enterprises as a businessman would in terms of profit and loss. He must also acquire the capacity to manage the use of complicated and critical new biological and chemical inputs that must be applied precisely in relation to plant and animal growth cycles, the seasons, and the times when disease entities are in critical stages with respect to transmission and damage causation.

Management skill may be of less crucial importance in other types of mass action problems but many of them require changes with respect to this factor.

12. Knowledge. In almost all mass action problems, the range of new knowledge that the end-use doers must acquire and use in their new behavior patterns include both specific technological knowledge which is determined by the nature of the problem, and knowledge which is primarily related to motivation. This latter aspect of knowledge has four significant components:

(1) Basic Knowledge that provides the background and support needed for the psychological security to act. Most people

are basically prudent. Most of them are simply unwilling to act too near the limits of their knowledge. They, therefore, must know from 75 to 100 percent more about a subject than they put to use when they act, or they will not act. In order that people may have this layer of extra knowledge that gives them psychological security to act, they must be over-taught. This over-teaching consists in insuring that basic knowledge well beyond the immediate requirements for action is provided to the person. In well-tutored populations most of this basic knowledge is built into people through primary and secondary education. In un-tutored societies, however, one cannot depend on general basic knowledge that is relevant to the behaviors that are to be changed being available in the target audience. It is therefore necessary to specifically determine what the relevant basic knowledge is and to include remedial educational activity as a part of the operating program to supply this basic knowledge. One of the major functions of adult and extension education is to provide this type of specific basic knowledge to the relevant target audiences.

(2) Economic Knowledge by which the direct action audience can make a hardheaded determination of the advantage, or disadvantage, to them of the new behavior. This type of knowledge is fundamental both to motivation and to supply the needs of the knowledge stage in the adoption of an innovation process. It may include some knowledge of economics, but mostly it is relevant practical information on

which unsophisticated people can make sound judgments. For example, if the objective is to teach peasant farmers to use chemical fertilizer, the common economic knowledge they would need to have would include such things as where and how to buy the chemical fertilizer? How much will it cost? What level of increased yields can be expected when the fertilizer is applied under conditions that duplicate those of the farmer? Will this increased yield be in an order of magnitude of 40 percent or greater and clearly beyond the range of normal crop yield fluctuation from year to year? Can the farmer see and experience this increased yield by observing a demonstration and not have to depend upon a chart or verbal declaration of increased yield? When yields rise, will the price for the product remain up or be depressed? When the crop is finally sold will the principal advantage go to the farmer, the land owner or perhaps the money lender? In many cases a specific plan would have to be instituted to assure that the farmer acquires all this economic knowledge so that he can make a hardheaded decision as to the advantage of the use of chemical fertilizer.

(3) <u>How-To-Do-It Knowledge</u> that gives mastery of the skills involved in the new behavior. In past development operations all too frequently we have begun our communication of knowledge process by teaching people how to do something on the assumption that if they know how to do it, this would motivate them to want to do it. Many times this has proved to be fallacious. It is

only after people know enough about the area of action and have acquired the economic knowledge which makes it possible for them to accurately evaluate the new ways of doing things that they are ready to learn how to do it. This corresponds to the trial stage of the adoption process. When a learner is well motivated, skills are quickly acquired and immediately put to use. For effective operations the specifics of what needs to be taught at the how-to-do-it level should be accurately defined and to conserve resources the most efficient ways of teaching it in both verbal and action terms should be designed.

(4) "Inhibitor" Knowledge is knowledge that the people already have which may prevent them from adopting the new behavior. It can arise from many sources. If the new behavior seriously conflicts with a strongly-established role, then this role conflict will probably function as an inhibitor. If the new behavior violates or appears to violate clearly held religious or moral values, then the values will probably operate as inhibitors. Similarly, if the new behavior is directed at goals that are either in fact or appear to be different from, or in conflict with, the accepted goals of the group, then these goal differences may operate as an inhibitor.

Inhibitors also arise out of individual experience. A villager may have tried a highly recommended new process that for some reason failed. He suffered loss. He is then inhibited when someone else seeks to get him to try something new. In many

situations, even when basic knowledge has been supplied and economic knowledge is available and people have been taught how-to-do the new behavior, they do not act because of one or more inhibitors. When this situation arises, discovering the nature of the inhibitor becomes a research task laid on those who seek to achieve behavior change. In many cases, the person whose behavior is inhibited cannot verbalize about the nature of the inhibition. It may then have to be discovered by some pattern of trial and error experimentation, which, of course, must be conducted with great care and skill lest additional and even more powerful inhibitors are generated.

When behavior change action programs are introduced and target audiences do not respond, the first assumption should be that there are inhibitors which are at work which can be discovered and dealt with. In some cases, failure to act may be due to laziness, stupidity or just generalized resistance to change. But these cases are likely to be rare. All too frequently that series of derogatory terms is applied by the change agent to the target people to mask the fact that he has not looked for the inhibitor which is at work, or that he has been unsuccessful in finding it. He escapes from his failure by blaming the people whose behavior he is trying to change.

13. Attitudes—that influence or determine the behavior of the target audiences. Attitudes are complex states of mind. They

are formed and maintained out of a wide variety of influences. Culture, religious belief, personal experience and the operation of many of the factors we have already discussed all have an effect on the attitude with which people approach a problem or consider whether or not to change their behaviors. Conversely, the attitudes which people have has a strong effect on many of the other factors which we have already enumerated.

14. Values—those premises accepted by the individuals and groups who compose the society that determine the judgments that they accept as self-evident, and on which they consciously or unconsciously base their decisions to act. The nature of these values is highly important in determining behavior. The modernization processes require an enormous extension of the range of application of many values. People who are traditionally concerned about their own families and their immediately surrounding micro-communities must develop values which make it possible for them to empathize with wide ranges of their fellow countrymen and to form new attitudes and relations with what may have formerly been distrusted, even hated, "foreigners." Values that primarily express themselves in quite selfish terms must be replaced by the capacity to trust and work with a wide variety of people. These and many other value-laden attributes are significant in behavior change situations.

15. Roles—a role is a regular way of acting, expected of all persons occupying a given position in the social order and confronting specified categories of others. Many behavior change packages require changes of such extent that roles and role relations must be changed before the new behavior is fully institutionalized. When a behavior change involves extensive modification or outright change of a role, the resistance to the behavior change goes up. This is because so much of every day living is determined by the expectations which are carried in roles. When one's role is changed, these expectations are violated and the people involved become very uncomfortable. In many situations behavior change efforts have failed because the change program did not understand the requirement for role change implied in the new behaviors. Should a role change be involved, specific efforts must be made to focus attention on this fact and assist in achieving the role change. Otherwise the conflict involved may well frustrate the behavior change.

16. Goals—the general objectives that people hold for themselves, their families, their communities, and the society in which they live. Modernization in most of the processes involved in the solution of mass involvement problems may require fairly extensive changes in peoples' goals at the personal, family, community, or societal levels. If the new behavior can be related to already existing goals, then it may be relatively easy to get

the new behavior adopted. If on the other hand some new goals have to be generated, articulated and accepted before the new behavior makes sense, then the lead time involved in achieving the new behavior will probably be considerably lengthened. Behavior change programs need to be sensitive to and make overt efforts in understanding the goals held by the audiences involved, and where necessary the redefinition of goals will have to be undertaken.

The 16 factors which comprise ring III in Figure 1 are deliberately placed in a circle about the Target Audience at distances that are equal in order to emphasize that any given package of behavior change may consist of from 7 or 8 to all 16 of these factors. They are numbered not as a matter of rank ordering, but simply to give a convenient means of referred to them. In fact, their relevant importance to a given change will vary considerably from place to place with respect to the same problem, and in many of the rapidly evolving situations that exist in the world today, they will vary from time to time in the same place. The process by which these factors can be used to build a suitable mix that can be expected to be effective in problem-solving, while emphasizing the value of quantitative data and information to the extent that it may be available or feasible, ultimately depends on an essentially qualitative, even intuitive,

balancing out of the various factors. The purpose of this listing is to insure that crucial factors are not overlooked. On the other hand, a thorough analysis of each of these factors with respect to a given problem and a specific locality will undoubtedly generate more good things to do than there will be resources to tackle. This means that after such an analysis has been made, it will be necessary to assign operational priorities and focus effort on those factors which are the current operative bottlenecks in the specific situation. Such an analysis can also assist the planner and operator in evaluating how much he can depend on other programs or agencies to deal with one or more of the priority factors and so allow him to concentrate his resources on the neglected bottlenecks. Since this process is relatively so complex that no one can absolutely, confidently assert that any given mix of factors is indeed the one and only way to solve the problem, and since any program's ability to completely manage every one of these factors probably does not exist, this factor analysis serves as a guide within which decision makers will have to pick points of entry and directions of action which on balance seem to be likely to be effective. It is then necessary to constantly re-evaluate and adjust the operation in light of actual experience, feeding back the experience for evaluation against the same pattern of factors. No one can do this perfectly, but anyone who does it consciously may well improve his performance by a significant margin.

V. Institutions that Generate Change Package Factors and Establish the Matrix.

Ring IV in Figure 1 shows the institutions that generate the factors that make up specific change packages. These institutions are divided into nine groups as follows:

1. Technical and Professional.

The technical and professional institutions in a country function to produce the technologies and manpower trained in the application of technologies and to provide the specialized leadership of the development process. They comprise (a) colleges and universities; (b) experiment stations; (c) scientific societies and associations; (d) technical and professional societies and associations; and (e) technical training institutes.

2. Government.

Government institutions are concerned with creating the authorized framework in which behavior change takes place and is responsible for guiding and allocating resources with respect to the total development process. They include government at (a) the national level—the Executive, Legislative and Judicial Branches, along with the peacekeeping and law enforcement agencies of the military and police; (b) provincial level government with executives, services and police functions; and (c) local government at the district, township and village levels.

3. Transportation Systems.

Transportation systems may be Government-owned or privately operated, or a mixture of these two types of organizations. They are frequently divided into (a) national transportation systems including railways, highways, water ways and air transport, and (b) local systems including farm to market roads, canals and water ways. In many developmental situations, the development of local transportation systems is highly important for the solution of production-type problems.

4. Business and Marketing Institutions.

The business and marketing institutions are concerned with the actual operations by which goods move in the society. They are (a) private institutions that buy, store, process, ship and sell agriculture products and that distribute and sell consumer goods which rural people want, and (b) public marketing and consumer cooperatives and Government-run marketing programs.

5. Manufacturing Institutions.

The manufacturing institutions are the companies, corporations or agencies of Government that produce and sell physical requisites, such as, fertilizers, seed, implements, drugs, etc., and consumer goods.

6. Financial Institutions.

Financial institutions are both private and public. The private ones include money lenders, banks and savings associations. The

public institutions include Government banks, Government-sponsored cooperatives, credit and financial agencies.

7. Unions.

The unions are agencies which affect labor and include such things as peasants and farm workers organizations which frequently have direct effects on rural development and unions of city workers that have indirect effects on the labor market, costs of requisites, rate of general development, etc.

8. Communication Institutions.

The communication institutions comprise the channels and major media that fall into four categories: (a) the social structure with its traditional patterns of human relationship, contact and communication; (b) the extension and adult education systems in information, education, agriculture, health and politics which are newly introduced organizations that work principally at the small group level; (c) the mass media which include the postal system, daily and periodical press, films—both educational and commercial—radio and television; and (d) the school system which is primarily concerned with the transmission of information from one generation to the next.

9. Social Institutions.

Many different classifications of social institutions might be arranged. For our purposes, the principal social institutions are (a) family and kinship; (b) religions; (c) class and status; (d) occupation and employment; (e) private organizations and associations, and (f) secret societies.

The development of these institutions is frequently a necessary part of the development process. Before a society is capable of generating continuously the behavior change package factors, it must be equipped with these institutions and they must function continuously to generate the factors and adapt to changing conditions in the society. Frequently overt efforts at change must be focused on changing these institutions.

VI. Language/Cultural Transformation.

Up to this point we have been discussing factors and relationships that are internal to the developing country. Development, however, is really a part of a world-wide system in which each developing country must relate itself to sources of scientific, technical, and economic information and experience that has been generated in other countries. Before this class of resources can become operative in a developing country they must undergo both a linguistic and cultural transformation. This process usually must take place in the institutions that we have just outlined. The purpose here is to convert the relevant information and experience which has been generated outside the country into forms that are useful to a wide variety of persons and processes inside the country. Since the majority of the people in the country do not command foreign languages, they can benefit only when the new information and experience is translated into a language which they can understand and use. At the same time, certain cultural adaptation may have to be applied to this information and experience. Resources

within the country, both human and material, must be provided to permit these linguistic and cultural transformations.

VII. World Scientific and Research Systems.

The final factor system that is significant to the developmental process is the system of world scientific and research institutions that are located in the advanced countries. These institutions by their research and teaching constitute the reservoir of existing scientific knowledge and the principal source of research designed to solve new problems or to adapt existing knowledge to new requirements. Most developing countries are neither economically nor technologically able to make extensive fundamental research contributions to this world system of scientific and research institutions, but they must be in two-way working contact with them. These institutions include the universities and research institutes, scientific societies and associations, public and private research laboratories, experiment stations, scientific and research businesses, and the publishers of scientific books and journals in the advanced countries which engage in the full and free publication and exchange of scientific knowledge and information.