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**The RAND Corporation**  
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## SEMIANNUAL REPORT NO. 2

1 May 1964 - 31 October 1964

(Research Director: F. T. Moore)

This is the second semiannual report on RAND research for AID. It summarizes work that has been continued from the previous period, work that has been initiated and finished within this reporting period, and work that will be carried on into succeeding periods. The main focus of RAND's research for AID is on problems of planning and allocating U.S. economic assistance and on suggestion of policies to improve both the allocation of aid and its effectiveness. It will be clear from the discussion below that work under some of the projects will continue in one form or another throughout the life of the contract. Specific research topics are separately identified below.

### I. PROGRAMMING OF CAPITAL ASSISTANCE: AN APPRAISAL

In the first semiannual report we identified one research topic as "The Evaluation of Projects."\* At that time we said: "The purpose of the research on this topic is to indicate ways in which the decisionmaking and programming may be improved and also to indicate ways in which the flow of project proposals can be improved." This is still a central problem but in phrasing it this way it now appears that undue emphasis is given to the project proposal itself. In fact

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\* AR-134-AID

the concentration on project formulation and evaluation is too narrow in its scope, for it does not take into account several very relevant factors: first, that there are administrative, institutional, and technical impediments to the creation and response of the demand for project funds and the decision to supply them; and second, that there are alternative ways or strategies for using funds effectively. Program loans may complement (or substitute for) project loans, and the circumstances in which each is to be used and the mix between the two present a number of difficult problems. As we have gotten into this topic, it has become clear that it is necessary to investigate a number of elements that together make up the substantive and institutional framework for decisionmaking in the allocation of economic assistance. Thus the problem that we first visualized in terms of project formulation and evaluation is more appropriately and broadly seen in the context of decisionmaking in the assignment of funds and the various barriers to the smooth allocation of resources to development programs.

For these reasons we decided to undertake an appraisal of the programming of capital assistance generally, including an evaluation of alternative kinds of loan policies, the kinds of leverage that they confer, the impediments to effective decisionmaking, and related topics. In this study we are pursuing three main lines of inquiry, described below.

### Examining the Strategy of U.S. Assistance

There are two broad categories of loans: program loans that provide general balance of payments support for a development program, and capital project loans for the financing of specific construction projects. Although these two categories seem totally different, the line of demarcation between them cannot be sharply drawn, for loans to development banks and intermediate credit institutions might be included under either heading. Nevertheless, as a practical matter it is usually possible to distinguish between them. For our purposes the important characteristics for distinguishing the one from the other are of three kinds: (1) the purposes of the loan and the ability to transfer resources (i.e., the fungibility

problem); (2) the extent and kind of leverage that it is possible for the United States to exercise in negotiating such loans; and (3) the degree and kind of control that AID exercises over the loan. In this section we shall try to assess the relative merits of the alternative loan instruments with respect to the generalized costs and benefits that they offer. Some of the inherent costs and benefits (or advantages and disadvantages) are explicitly recognized in the Manual Orders but there is little to justify the choice of one or the other; indeed it seems probable that some combination of both types of loans will be required. The "costs" of each type of instrument are measurable in terms of both real and monetary factors that bear on resource use (e.g., project loans may put a heavy burden on technical manpower skills in AID). The "benefits" are similarly measurable in terms of their resource implications (e.g., program loans may at times involve perverse incentives). It is, therefore, the purpose of this section to try to assess the relative merits of loan instruments in terms of several pertinent criteria.

#### Improving Operational Policies

A number of policy instruments that seem promising are being examined. It seems useful, for example, to develop and expand the use of feasibility and "pre-feasibility" studies. Feasibility studies are a means to explore alternatives, to determine quickly and inexpensively a large number of potential projects in order to determine their strong and weak points. At the end of such a study one of three decisions might be made: to go ahead with the project on a full-blown scale leading directly to a loan application for construction purposes; to acquire additional information in a successive step in order to make a final decision later; or to abandon the project temporarily or permanently because of some of the findings of the studies. In other words, feasibility studies are potentially a means for diminishing or eliminating uncertainties in a sequential decisionmaking process. In fact, feasibility loans have not been used in this spirit; it appears that there are policy changes that might improve the use and effectiveness of this instrument.

To make the project selection process efficient, it is necessary to take into account the major alternatives to any project within the same economic sector. One weakness of the project approach is that it tends to produce scattered results; when a number of projects are being developed in the same sector of the economy, there is the greatest need for some comparison of costs and benefits in these projects so as to establish some order or priority among them. It seems likely that greater attention to developing a capability for sectoral studies as a standard part of the procedure offers some substantial benefits.

As a further example of potentially fruitful lines of inquiry, project monitoring and postmortems are ways to improve performance and to provide guidance for future projects. Among other things, these require the specification and use of sanctions and incentives so as to increase the efficiency of resource use, to insure that they will be used promptly, and to be reasonably assured that the appropriate criteria are applied.

The examples cited above are by way of illustration of areas in which investigation may reveal ways to improve operational policies; these and other areas will be examined in the report.

### Improving Operational Capabilities

This line of inquiry covers a multitude of administrative, procedural, statutory, and other rules that constrain, bind, and otherwise affect decisionmaking on loans in the Agency. Some of these are mandatory, some permissive, but all affect the flow of information, the locus and kind of decisionmaking, the timing of such decisions, etc.

One important issue is the extent of centralization or decentralization of decisionmaking with respect to loan agreements and similar topics. There are many questions here: How much should be decentralized to the mission? What should be the criteria for deciding these questions? Should the decision be based in part on the size of the country, an evaluation of the efficiency of the mission, or of the total size of the program? The issue might also be approached directly in terms of the recent decision to authorize the missions in some countries to

approve loans up to \$2-1/2 million. Why is the limit at \$2-1/2 million? A \$2-1/2 million loan in Peru, for example, is apt to be much more important than the same size loan in Brazil. What percentage of the loans fall under \$2-1/2 million? And what does this imply in terms of centralization or decentralization of decisionmaking over significant parts of the programs? These and similar questions are germane to this important issue.

A second set of issues revolves around who does the decisionmaking and when; that is, it concerns the effective use of personnel. One important problem is the need to develop ways to economize on one of the scarcest of resources-- the technical and economic expertise needed to examine and to decide upon project proposals. This raises questions with respect to the qualification of necessary personnel resources, the relative merits of alternative ways in which they might be used (e.g., regional staffs versus centralized staffs), substitution possibilities between contract and permanent party personnel, etc. To the extent possible, questions of this kind will be examined from the point of view of suggesting ways to increase the effectiveness of the decisionmaking process.

The above three major lines of inquiry clearly overlap and complement one another; taken together they are intended to cover a range of problems and a number of alternatives that are present in the programming of capital assistance.

## II. AN APPRAISAL OF THE ECONOMIC ASSISTANCE PROGRAM IN VIETNAM

At the specific request of AID we undertook a major study of the assistance program in Vietnam; the purpose was to review the existing program, to suggest new areas in which aid might be effective, and to recommend changes in policies where necessary and appropriate. During May and June a team of economists was sent to Vietnam to study the problem. They worked with the AID Mission there and discussed specific problems with representatives of other elements of the U.S. Country Team and with representatives of the Government of Vietnam. Upon

their return they prepared a report of their findings and recommendations which was submitted to AID in July.\* The report made a number of recommendations for the development of an urban program and for a better focused rural program. It also considered the consequences of these recommendations with respect to program feasibility and political and economic considerations. Following the presentation of the report, extensive briefings and discussions were held with various members of AID, the Department of State, and the Department of Defense. In addition, several memoranda were prepared for AID elaborating on particular points and developing specific action programs. As a final step in this study the full team returned to Southeast Asia in September-October, prepared to discuss problems of implementation of the recommendations in the report. The director of the AID Mission in Vietnam, however, decided that this was unnecessary. The team therefore confined its visit to Laos and Thailand, informally discussing similar problems in those countries. The work on Vietnam is concluded; whether any additional work is to be done on Laos, Thailand, or regional problems of that area will be decided in other discussions with AID. (See also the following topic.)

### III. THE EVALUATION IN DEPTH OF SELECTED COUNTRIES

This topic appeared in our previous report and is very likely to continue as part of our research program throughout the duration of this contract. In the previous report we said: ". . .if one is to try to come to some judgment about the effect of U.S. aid and on ways to improve its impact, it is necessary to consider project aid, nonproject assistance, assistance from other sources, and the effects of the individual country. Indeed, in such analyses it is desirable to look at military aid as well and at other aspects of U.S. policies such as trade and commercial policy, in order to evaluate the total effect of U.S. efforts in the country and to develop better total program 'packages.'"

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\* R-430-AID, U.S. Economic Assistance in Vietnam: A Proposed Reorientation (U), by C. J. Zwick, C. A. Cooper, H. Heymann, Jr., and R. H. Moorsteen, July 1964 (Secret).

To supplement the insights and information obtained in studies such as in Topic I above, it is necessary to undertake systematic analyses of the experience of a few countries. During this period several steps have been taken in this direction. First, an economist has been sent to Chile for the coming year to study U.S. assistance policies, program formulation and implementation, and similar matters. We expect several reports to result from this assignment. Second, several other countries are now being actively considered for study; these include Brazil, Turkey, possibly Laos and Thailand (see Topic II above), and possibly a country in Africa (Nigeria?). As we said in the previous report, "Research of this type will bring together in a systematic fashion all the factors relevant to an assessment of the impact of U.S. assistance on growth in specific countries."

#### IV. THE RETURNS TO INVESTMENT IN EDUCATION

This is an exploratory research project whose purpose is to marshal whatever evidence can be brought to bear on one facet of the question of the returns to investment in human capital, namely, what is the rate of return to investment in formal education within the less-developed part of the world? To make such a study we must, at least, have data on income by age and education from a sample of countries. Such data have been collected for India (all India urban household sample; Calcutta; and Hyderabad), for Ceylon, and for Mexico. Although there are a number of difficult problems involved in the use of such data, a preliminary report has been drafted. Several tentative conclusions emerge from this report: First, rates of return to investment in education in the less-developed countries appear to be substantial, but it is difficult to support the contention that they are greater than the rates of return on real capital. Moreover, it appears that the economic returns to an investment in literacy are high; that there is no necessary tendency for the secondary school system of a partially developed nation to remain underdeveloped relative to the system of higher education; and finally that the rate of return to investment in education is higher in the less-developed nations than in an advanced country such as the United States.

An expansion of this report, or a separate report, will consider further the decision problems with respect to investment in education, development of appropriate skill combinations, etc.

#### V. MEASUREMENTS OF ECONOMIC PERFORMANCE, SELF-HELP, AND RELATED TOPICS

Measures of performance, self-help, and the potential impact and cost of economic assistance are important ingredients to decisionmaking on allocation of economic assistance among countries. Several studies have been undertaken in this area during the previous period and will undoubtedly continue into succeeding periods. One report, RM-4042-AID, The Effect of Savings and Foreign Aid on National Growth Rates by R. E. Johnson, August 1964, has been delivered to AID. This report analyzes per capita growth rates in terms of receipts from abroad (including both foreign aid and private investment), the fraction of national income saved, and a measure of the rate of change of this fraction. It also attempts to measure the differential impact of these factors on per capita growth rates in a sample of countries.

A second report, now in first-draft form, addresses the question of the cost of various forms of capital inflow from the viewpoint of the recipient countries, relative to their estimated needs. It makes an attempt, using adjustments from the viewpoints both of donor and recipient, to find aid terms which maximize the gain to the recipient for a given amount of aid from the donor. Finally, it contains comments and suggestions on recent trends in terms of U.S. aid.

We have partially drafted a third report, which attempts to measure the level of development and to differentiate superior from inferior performance by the countries through the analysis of structural relationships (e.g., production functions, relationships of growth of investment to growth of income, etc.). Country "profiles" have been prepared showing the relative performance of the countries. Also, through the use of discriminant analysis, groups of countries are distinguished from one another in terms of important measures of performance.

Through further discussions with AID we expect to determine how much additional work is desirable in this area.

## VI. A SECTORAL POLICY FOR INDIAN TRANSPORTATION

This study, now in draft form, draws on several recent studies of Indian transportation to develop a framework for analysis and to outline the major policy problems that must be faced in choosing among projects within the sector. The purpose is to show how such studies can be used to develop concrete policies for U.S. technical and capital aid to a sector; at the same time, we hope it will provoke some discussion of the policy set forth in the recent Indian Long-Range Assistance Strategy.

## VII. DEVELOPMENT STRATEGY IN AGRICULTURE: CASE STUDIES IN LATIN AMERICA

In most underdeveloped countries the success of economic development depends heavily upon the stimulation and reorganization of agriculture. A major project in Latin America typically absorbs a large amount of funds (both foreign aid and local funds), takes a long time to complete, involves a large number of people, and requires a number of difficult programming decisions. A large planned or directed colonization program frequently involves irrigation, colonization and establishment of new farms, reorganization of production, provision for infrastructure and intermediate credit, choice of colonists, pricing of the land, etc. Programs such as this are illustrated in the San Lorenzo project in Peru, Santo Domingo de los Colorados in Ecuador, Las Majaguas in Venezuela, etc. Such large planned programs represent one polar case of a strategy for agricultural development. Examples of the opposite polar case, involving minimal investment programs, are the Upano River Valley in Ecuador, Caranavi-Alto Beni in Bolivia, and others.

These two alternatives pose some difficult choices. Is capital assistance (and technical assistance) apt to be most effective in the case of large planned colonization programs or in minimal investment programs that depend on favorable

spontaneous reactions by the peasants? Pursuance of either program alone is tantamount to a "pure" strategy and intuition and experience in other cases seems to indicate that this is apt to be inferior to a "mixed" strategy that combines elements of both. For example, it may be effective to use a planned colonization scheme to open up part of an area and then to rely on spontaneous reactions to fill up the rest. This is the "oil stain" concept applied to agricultural developments. If this is the proper course, what is the minimum efficient size of a colonization scheme? What are the costs and benefits that are typically realized by following either course? Although sociological and anthropological factors clearly affect the outcome, the emphasis in this project is on the preferred economic strategy. The study should provide valuable guidelines for future U.S. economic assistance in agriculture. Initially, a case study will be made of selected projects, probably drawn primarily from those in Bolivia, Peru, Ecuador, Colombia, and possibly Venezuela and Guatemala. The selection will be limited so as to achieve some preliminary substantive results within a reasonable time.

#### VIII. THE EFFECTS OF INFLATION ON GROWTH AND DEVELOPMENT POLICIES

There is a long-standing debate on the effects of inflation on growth and on the kinds of corrective policies that should be applied. The debate is most pronounced in Latin America, which is understandable, for the outstanding examples of inflation are to be found in countries in that area. Two contrasting schools of thought have emerged. One school traces the sources of inflation to monetary factors and mismanagement of monetary instruments, which implies that the corrective policies are to be found primarily in a reorientation of monetary and fiscal policy. A second school argues that the sources of inflation are to be found in various structural characteristics and malformations in the economy. Correctives for these conditions are much farther reaching in their economic and social implications, for they frequently require major institutional changes in the economy. Most of the debate, however, has been conducted at the a, priori theoretical level with little reference to the empirical evidence. What empirical evidence is introduced is typically fragmentary.

In this project we will try to formulate testable hypotheses as to the source and explanations of inflationary pressures, to pinpoint some of the origins of these pressures, to determine whether there is a differential impact as between different rates of price increase, and to show the effects upon investment behavior and income growth. From such an analysis would also come indications of the kinds of policies that are required in order to control inflation and to maintain the stimulus to growth. Such policies would include, most importantly, those relating to the provision for economic assistance. Obviously a study such as this must focus on the behavior and experience of specific countries; we plan to include Argentina, Brazil, Chile, Colombia, and Peru in the sample. Although some preliminary thought has been given to the design of the research and a certain amount of basic data has been collected, the amount of effort to be devoted to this topic in the succeeding period will depend, for the most part, on the competing demands of other research projects in this report.

#### IX. CRITERIA FOR INTER-COUNTRY ALLOCATION OF AID

Some preliminary thought has also been given to initiating a project on the appropriate criteria for inter-country allocation of aid. At this point it appears that there are three different but complementary approaches that might be taken to the problem. One approach essentially focuses on the institutional factors that affect the allocation process--the tendency for past allocations to set the pattern for the future, the political and economic aspects of bargaining among the various interested decisionmakers, etc. Such an approach should yield a number of interesting insights into the actual allocation process. A second approach attempts to focus on the quantitative needs and requirements (in pursuance of some given set of development or strategic objectives) as determined by consideration of such factors as probable gaps between savings and investment in particular countries, limitations imposed by balance of payments requirements, limits implied in "absorptive capacity," debt service capabilities, and similar factors. As a result of some very preliminary thinking, we confess to having

some doubts as to the conventional wisdom with respect to the applicability of some of these factors. A third approach, that would combine both of the previous two, would focus attention on this problem in the Alliance for Progress. There are five or six major claimants for assistance, each of which ostensibly can put forth reasonably strong arguments in his favor, and there is a more or less fixed amount of aid available. A case study of the Alliance for Progress should result in some important policy suggestions for the allocation of aid. The exact character and content of future work on this topic will depend upon the outcome of further discussions.

#### X. OTHER WORK

At the invitation of the Deputy Assistant Administrator for Program, a member of the research staff accompanied him on a trip to Colombia and Peru during late May and early June. The purpose of the trip was to discuss the aid program in those countries and to obtain information that might lead to improvements in program formulation and operation. At the conclusion of the trip the RAND staff member prepared an informal report that covered a variety of topics: the formulation of development projects (including observations on the uses and misuses of feasibility loans); the operations of the missions in those countries; observations on the impact of the development programs on the economies (including potential inflationary pressures that seem likely to arise); and suggestions of several topics for future investigation and research. At the request of the Deputy Assistant Administrator for Program a few copies of this informal personal report were made available to him and to several other people. Some of the findings have also had an effect on the direction of the RAND research program for AID.