

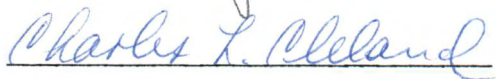
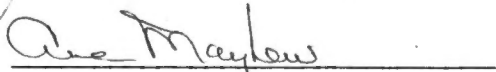
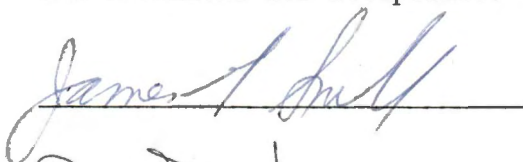
To the Graduate Council:

I am submitting herewith a dissertation written by Michael A. Fuchs-Carsch entitled "Planning Donor-Supported Small Farmer Projects in Less Developed Countries: Lessons from Ethiopia and Ghana." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Agricultural Economics.



D. W. Brown, Major Professor

We have read this dissertation
and recommend its acceptance:



Accepted for the Council:



Vice Chancellor

Graduate Studies and Research

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PLANNING DONOR-SUPPORTED SMALL FARMER DEVELOPMENT
PROJECTS IN LESS DEVELOPED COUNTRIES:
LESSONS FROM ETHIOPIA AND GHANA

A Dissertation
Presented for the
Doctor of Philosophy
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Michael A. Fuchs-Carsch

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ABSTRACT

This dissertation was addressed to the problems with initiation of effective projects in less developed countries (LDC's) that seek to help small farmers produce more marketable surpluses. The focus was on projects being prepared for loan and grant support by the Agency for International Development, the World Bank and other international, donor agencies. Special attention was drawn to elements in the political and economic environment of LDC's and to the manner in which projects are brought into being and planned that are conducive to project acceptance and success. The histories of four small farmer projects which the author helped to plan in Ethiopia and Ghana were examined in special detail, as a source of added insights about the problems that can be encountered and their possible solutions during the planning phase. Implications for donor agencies and research institutions, in their efforts to help create better small farmer projects, were drawn.

Building on the findings and recommendations of other observers who have evaluated rural development projects in many LDC's, this dissertation explained major features of more desirable small farmer project structures and processes which have recently been recommended to donor agencies. A framework was then established for identifying important conditions under which more desirable or recommended small farmer project structures and processes could be planned and executed in LDC's with donor-support. Emphasis was given to the desired roles of major actors—policy makers, planners, small farmers in LDC's and

donor agencies—in shaping an environment that leads to the necessary and sufficient conditions for maximum project impact. Emphasis was given also to the potential uses of cost-benefit analysis as an important component of an information system which generates better project planning data and monitors project impacts.

The major obstacles to planning recommended small farmer project structures and processes were identified by comparing the framework with the author's project planning experiences in Ethiopia and Ghana. Problems common to both of these countries were caused by four major interrelated factors.

First were those limitations caused by either an absence of, or lack of commitment to, a strategy which enables the rural population to raise its contribution to LDC growth objectives and development goals.

Second were those problems caused by an inadequate understanding of the environment, small farmer systems and constraints, and the conditions under which small farmers are able to generate marketable surpluses most effectively.

Third were those obstacles caused by a tendency of small farmers to either distrust LDC governments and project authorities or to expect public institutions to do all things for them.

Finally were those problems caused by ineffectiveness of local organizations in representing and communicating small farmer interests.

In the context of the limitations encountered in Ethiopia and Ghana the author concluded that a learning-by-doing approach in which

specific development hypotheses could be tested and in which small farmers are more directly involved, would strengthen project planning and execution.

It was concluded also that much more productive use could be made of cost-benefit analysis as a device for identifying major assumptions and conditions under which desired project benefits and rates of return could be generated and sustained.

Finally, the author drew several inferences for USAID and the U.S. research community. It was suggested that USAID field missions be given much more programming, budgeting and implementation flexibility. This would enable phases of the project process to be more effectively integrated and executed in line with capabilities of small farmers and their local organizations to participate in project activities. It was suggested also that the U.S. research community focus much more on applied, action research and work more closely with LDC institutions in identifying critical needs of farm communities for augmenting and mobilizing their own resources for sustained community growth and development.

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CHAPTER I

INTRODUCTION

A. INTRODUCTION

One of the major tools of development in less developed countries (LDC's) is the project. The function of a project is to mobilize resources in specific investment or development activities. The project is a major mechanism through which national plans, policies and programs can be implemented; it is also a major mechanism for transferring resources from donor agencies¹ to LDC's.

As a development tool the project is surpassed in importance only by LDC macroeconomic policies. These policies, together with the level of public sector investments in social and economic overheads and in direct income-generating activities, define the roles and responsibilities of the private and traditional sectors to effectively participate in growth and development processes in LDC's.

In the development literature much has been written about the broad strategy plans and policies which are most likely to achieve development goals in LDC's under various conditions and constraints. However, less attention has been given to the specific nature and characteristics of projects, how they are brought into being, how

¹Multilateral agencies such as the International Bank for Reconstruction and Development (IBRD) or bilateral agencies such as the United States Agency for International Development (USAID).

they are planned and the conditions under which their execution would have maximum impact on growth and development.

This gap in the literature has become particularly evident since the early 1970's, when donor agencies began to focus more of their assistance on the "poor majority" in less developed countries. This has resulted in a situation where donor agencies are operating under new mandates and policies without the approaches, tools or projects to implement these mandates with maximum impact on LDC growth objectives and development goals.

This dissertation deals with the problems and limitations of planning and executing successful, donor-supported projects which endeavor to increase productivity, marketable surpluses and incomes of small traditional farm production units in LDC's. It builds especially on the observations and recommendations of two recent studies which have accumulated considerable current thought and experience about the development of small farming systems.

B. BASIC ELEMENTS OF THE PROJECT STRUCTURE

The first study, undertaken by Development Alternatives Inc. (3), evaluated 36 donor-supported small farmer projects in Africa and Latin America. The recommendations of this study can best be understood by explaining the basic elements of a project's structure in the context of the evolution of various donor assistance approaches to agriculture in LDC's.

At the heart of applying projects to any development activity is the establishment of causal, feasible, predictable and verifiable linkage among four basic elements which comprise a project's structure.² These elements are:

1. Project inputs or resources which are combined and applied to a specific development activity;
2. Project outputs or immediate results of such an activity;
3. Project objectives which outputs are intended to achieve;
4. The effects that the attainment of objectives has an overall sector development or welfare goals.

Many donor agencies have since the late 1960's redirected their assistance strategies to LDC's. In agriculture this redirection has led donor agencies to prepare and implement projects which seek to benefit small farmers. With respect to the four basic project elements, the shift in donor policy can be illustrated in Table 1.1.

1. Past Donor-Supported Agricultural Project Structures

Before the late 1960's, donor-supported agricultural development projects focused primarily on increasing marketable agricultural surpluses. This may have been regarded as an end in itself, as LDC policy makers favored projects that supplied cheap and abundant food for urban consumers, increased foreign exchange and raw materials for urban-based industries. The objectives of these projects were achieved

²This construct was developed for USAID in the early 1970's by a consulting firm, Practical Concept Incorporated. See (27) for more details.

TABLE 1.1
GENERAL CHARACTERISTICS OF PAST AND PRESENT DONOR-SUPPORTED AGRICULTURAL PROJECTS
IN LESS DEVELOPED COUNTRIES

Basic Project Elements	Past Projects	Present Projects
Inputs	Capital intensive and high level manpower resources.	Greater reliance on locally available resources and traditional production systems.
Outputs	New large-scale capital intensive production systems.	Improved input distribution and agricultural service systems.
Objectives	Increased production of specific commodities for urban, export and industrial markets.	Increased agricultural productivity and production from traditional production units.
Goals	Not specified.	Increased incomes, employment and welfare of poor majority particularly in rural areas.

with imported capital, using technologies which were applied to large-scale, state or privately owned production units.

In general, the LDC experiences with these agricultural projects have been mixed. In some countries, such as Ghana where large-scale production units were state owned and managed, failures are well documented (35).

In other countries, such as Ethiopia where large-scale production units were privately owned and managed before the Revolution in 1974, impressive increases in marketable surpluses have been recorded.³ However, these and similar efforts to direct public sector investments or support programs toward large-scale production units have tended to ignore the important role of small traditional production systems in generating marketable surpluses and in contributing to national employment, income and welfare goals.

2. Present Donor-Supported Agricultural Project Structures

In the late 1960's, goals and objectives of agricultural projects changed to reflect donor agency concerns for the effect of assistance programs on the welfare of the poor majorities in LDC's. The redirection was abetted by the energy crisis in 1973, which increased the foreign exchange costs of imported technologies and inputs such as agro-chemicals, fertilizer and fuel. Also, increased evidence became available that small, traditional production units were able to generate marketable surpluses at lower on-farm and foreign exchange costs than large production units if major constraints could be removed. These constraints were seen as:

³See (17, 19, 20 and 21).

- a. Irregular access to improved technologies and inputs;
- b. Lack of applied research results on improved agricultural practices;
- c. Inadequate mechanisms to transfer and diffuse improved technologies and practices;
- d. Inadequate tenure arrangements;
- e. Inadequate agricultural services such as marketing and credit;
- f. Inadequate infrastructure such as feeder roads, storage facilities, village water systems, etc.

Within the context of promoting the production of specific crops important to the national economy, small farmer projects were planned in many LDC's by national planning units and donor agencies to overcome these constraints. In most instances, these projects were implemented through public institutions on a national basis or by specialized project authorities in specific geographic areas.

In spite of the apparent desirability of this approach, experiences have been mixed. Frequently expected linkages among project elements have not been realized.

Development Alternatives Inc. and others⁴ have identified numerous shortcomings of past small farmer development projects. These can be summarized as follows:

- a. They impose development goals and technologies on local farm communities without a full knowledge of their farming systems,

⁴For example, see U. Lele (24).

environment, on-farm and off-farm constraints and the behavioral adjustment farmers need to make to adopt improved inputs and practices for specific commodities or crops.

b. They endeavor to reach small farmers rather than to actively involve them in decision-making in project planning and execution.

c. They do not motivate small farmers and other project beneficiaries to contribute to the costs of development activities;

d. They do not assure that project benefits and activities will be sustained and financed after the projects development phase when external resources are withdrawn;

e. They do not allow project planners to acquire knowledge of least cost, sequential development approaches to promote national objectives which can be extended and replicated with minimum burden on central government revenues.

These basic shortcomings underlie the following observations and criticisms of past small farmer development approaches; these are that they:

- a. Have been complex and costly, relative to the incremental benefits they actually generate;
- b. Have taxed experienced high- and middle-level management resources which are scarce in LDC's;
- c. Have evolved strong dependency relations of beneficiaries on project authorities and have bred high and unrealistic expectations of the roles and responsibilities of LDC governments or project authorities in executing and financing development approaches;

- d. Have not been replicable;
- e. Have been a drain on central budget revenues relative to the number of farmers reached;
- f. Have been over-planned and over-structured in the beginning relative to available information about local sociological, economic and cultural conditions;
- g. Have lacked effective information systems for monitoring and evaluating project effectiveness and impact on objectives and goals.

In the context of these shortcomings and their effects, Development Alternatives Inc. identified small farmer participation in resource contribution and decision-making as key elements which would lead to more successful⁵ planning and execution of small farmer projects. A project structure which would incorporate the recommendations of Development Alternatives Inc. may be illustrated as follows:

Project inputs—resources provided primarily by local communities and complemented by a few, critical, external resources.

Project outputs—increased decision-making capability of local communities in allocating and mobilizing resources for growth and development.

⁵Success was defined as having the following dimensions: increases in small farmer incomes, agricultural knowledge, self-help capabilities and a higher probability that project benefits would become self-sustaining (3, p. 9). Increases in marketable surpluses were not explicitly defined as a dimension of project success, although it may have been implied.

Project objectives—sustained and equitable increases in marketable surpluses, incomes, employment and community development.

Project goals—to raise local community contribution to national income, employment, equity and development.

As will be stressed throughout this dissertation, it is important when planning small farmer projects that the assumed linkages among these elements be based on sound estimates of resource requirements and resulting outcomes, particularly increases in marketable surpluses. Cost-benefit analysis can be a helpful device for identifying the conditions and assumptions needed to attain the desired outcomes.

C. PHASES OF THE PROJECT PROCESS

The second study on which this dissertation builds was undertaken by Lele (24). The study evaluated several rural development projects in Africa and evolved recommendations similar to those of Development Alternatives Inc. However, the recommendations of Lele's study focused much more on the importance of integrating the phases of project processes which generate project structures over time. The phases⁶ of the project process are as follows:

1. Project identification—when development activities are proposed and recommended for detailed study and planning.
2. Project planning—when development activities are formulated, project elements and their expected linkages are defined and information systems are designed.

⁶See Baum (1) for a more detailed explanation of the functions of these phases.

3. Project appraisal and selection—when projects are reviewed, by external funding agencies, in terms of their external resource requirements, manageability, financial profitability and their desired effects on development objectives and goals.

4. Project implementation—when projects are actually executed and managed, when linkages of basic project elements are established or tested in practice and when information systems are used and updated.

5. Project evaluation—when project activities are monitored for their effectiveness, performance and impacts on objectives and goals.

6. Project modification—when project activities are reformulated and redesigned on the basis of past experiences and when linkages among project elements are redefined.

Lele's study points to the need for involving small farmers and their communities in the project planning and implementation phases of the project process. The study recommends a sequential approach to involving farmers in project processes. Such an approach would expand project activities as constraints are overcome, as marketable surpluses and incomes of small farmers are increased and as local farm communities demonstrate a capacity to increase their involvement in project planning and implementation.

Failure to integrate project phases is a problem that has been observed by various persons. For example, Holmquist (11) has referred to "implementation without planning" where self-help actions at local community levels lead to the execution of projects which may not be consistent with national objectives. These projects may not be supported

by requisite, complementary public services and infrastructure investments to assure that benefits generated under local initiatives will be sustained over time.

Chambers (2) gives a more serious example of the lack of integration of project phases. This is known as "planning without implementation." Under this regime public institutions attempt to plan project structures at highly centralized levels with little knowledge of the needs, constraints and potentials of communities which must ultimately become directly involved in local growth and development. Frequently this situation is exacerbated by planners from donor agencies who, in their urgency to meet almost magically contrived funding levels, are concerned only about the role they play in bringing project proposals to the approval stage. The effect is that projects often are designed with little regard for the ability of LDC institutions to implement projects or for the capacity of project participants to generate and sustain benefits during and after the development period of a project.

Another example of the lack of integration of the project process has been termed "implementation without evaluation" by Waterston (34). In this situation implementors are not able to keep a project "on track" because information systems do not exist or, even if they did exist, do not give appropriate criteria for assessing project performance and impact. A serious consequence of this situation is not so much that a project is "off track" but that the reasons for a project's failure are not adequately documented, analyzed and understood. Under these circumstances, lessons from experience cannot be drawn, with the result

that future projects may duplicate past failures or, at best, "reinvent the wheel."

For these reasons Lele et al.⁷ argue that full integration of phases of project processes is most likely to be achieved when small farmers and their communities are directly involved in all project phases and decisions, and when effective two-way communications exist between small farmers and/or their local organizations and centralized public sector institutes or project authorities in LDC's.

D. OBJECTIVES AND APPROACHES OF THIS DISSERTATION

As donor agencies seek to implement their mandates of reaching the "poor majority" in LDC's in general and small farmers in particular development approaches are increasingly being accepted which, in principle, combine the recommendations of both studies regarding more desirable project structures and processes. These approaches seek to identify a few, key, external resources which effectively complement and mobilize local community resources in LDC's for sustained growth and development. These approaches would initially focus on income-generating activities and gradually expand components as marketable surpluses, community incomes and taxable capacities are increased and as lessons are learned about the ability of small farmers or their organizations to share in project decision-making and resource contributions.

⁷Development Alternatives Inc. (3) and Winch and Fuchs-Carsch (35).

Much can be said in theory about the desirability of planning and executing more desirable project processes and structures in LDC's. However, much also needs to be said about the practical problems and limitations which are likely to prevent donor agencies from applying recommended small farmer project structures and processes in LDC's. Particularly, consideration should be given to the LDC environment in which such projects could be brought into being and the manner in which such projects could be planned for most successful project execution.

The objective of this dissertation is to describe my experiences in project planning in Ethiopia and Ghana with a view to identifying several important problems and limitations to applying recommended project structures and processes with donor support.

This will be done by examining the relation between small farmer project structures and processes and the environment and manner in which donor-supported projects are brought into being in LDC's. The major argument of this dissertation is that discussions of small farmer project structures and processes cannot be divorced from observations about the environment in which projects are brought into being and the manner in which they are planned. More specifically, in examining the evolution of four small farmer projects, it will be shown that inadequacies of the environment and manner in which they are brought into being are the basic causes of the problems and limitations encountered.

This dissertation is organized as follows. First, in Chapter II, the conditions and components of an environment will be identified in

which recommended small farmer project structures and processes could be planned and executed with donor support in LDC's. This will be done by delineating important stages in the evolution of such an environment. Emphasis will be given to the most desirable roles and interplay among major actors in shaping an environment in which small farmer project structures and processes are likely to have maximum impact on local community and national growth and development. These major actors are LDC policy makers, development planners, small farmers and donor agencies.

The manner in which small farmer projects should be planned—as now recommended by development experts—will also be depicted in Chapter II. Emphasis will be given to possibilities for using cost-benefit analysis as a device for identifying assumptions and conditions under which project objectives and goals can be realized and as a tool for monitoring project impacts on growth objectives and development goals.

Second, using this framework as a point of departure I shall describe my experiences in planning several small farmer projects in Ethiopia and Ghana with which I have had close association. This will be done in Chapters III and IV for Ethiopia and Ghana, respectively. For each country the discussion will be divided into two basic parts:

- a. The environment underlying the evolution of the acceptance of small farmer projects and the conditions which affected the way in which they were brought into being; the actual roles and interplay among major actors will be highlighted.

- b. The manner in which specific projects were planned, focusing on the mistakes made and the lessons learned about using cost-benefit analysis to overcome some of these problems and limitations.

None of the projects discussed has actually been carried to completion. The focus here is on problems and possible solutions during the planning stages, on the generation of interest in such projects in the first place and on the necessary and sufficient conditions for executing successful small farmer projects.

Third, in Chapter V the key insights gained from these experiences about the environment and manner in which small farmer projects were brought into being will be distilled and assessed in terms of the framework developed in Chapter II. This will be done to identify the major causes which underlie the problems and limitations to planning small farmer projects.

Finally, Chapter VI summarizes the major findings and suggests some ways in which such donor agencies as USAID, as well as the U.S. research community, could strengthen their efforts to encourage and support more successful small farmer projects in LDC's.

E. MAJOR ISSUES AND PREMISE

An important issue that underlies the central arguments in this dissertation needs to be made explicit.

In project planning cost-benefit analysis has traditionally been used as a tool to determine the returns to resources allocated to specific investment on development activities, given certain assumptions and conditions. [Projects which yielded highest returns over time have

been put forward as likely candidates for selection. Where the linkages between project elements are governed primarily by technical factors and relations, returns have been measurable and predictable. In these circumstances cost-benefit analysis has been regarded as a powerful and useful tool to guide decision-makers in project appraisal and selection. With small farmer projects, however, the linkages between project elements are governed primarily by nontechnical factors and relations. Returns are, therefore, less measurable and predictable. Consequently, in its traditional form, the role and usefulness of cost-benefit analysis, when applied to small farmer projects, has been questioned.

In describing the manner in which small farmer projects can be effectively planned and executed it will be stressed that actors in the project process should regard information systems as essential to monitor project implementation, to provide a framework for evaluating project performance and impact and to provide criteria for project adjustments.

It will be argued that cost-benefit analysis and related techniques, applied in less dogmatic and traditional forms, are essential components of such information systems. In its less traditional form cost-benefit analysis can be used as a tool to determine and identify important assumptions and conditions that should obtain so that a given return to resources could be realized. When the cost-benefit framework is applied in this inverted form, small farmer projects can be considered for selection on the basis of the assumptions made and the conditions underlying their success rather than solely on the basis of their potential rate of return. Also, in this inverted form cost-benefit

analysis is not only an important tool in project appraisal and selection but also an important tool in project monitoring, evaluation and adjustment.

In assessing the impact of a proposed project on community growth and development, cost-benefit analyses has an important role in delineating required linkages among the basic elements of a project's structure. Cost-benefit analysis also has a role in identifying the assumptions and conditions under which required linkages are likely to be realized.

For example, a decision to place either 10 or 20 extension workers in a project area must bear some relation to the value of additional agricultural output that these extension workers are able to bring about. Further, the additional agricultural output that may be generated should bear some relation to the capacity of the marketing system to clear resulting surpluses. Otherwise, sufficient price incentives will not obtain and marketable surpluses will not increase.

Similarly, the number of small farmers who will have to be reached by extension agents to generate requisite surpluses must also bear some relation to the ability of the input distribution system within the project area to make available sufficient inputs, at the right time and at the right price. Otherwise, the economic rate of return to the extension staff—be it 10 or 20 extension workers—may not be realized.

Finally, for increases in marketable surpluses and small farmer incomes to be sustained over time, it is necessary to relate projected incremental incomes of small farmers to the availability of goods and services which small farmers will desire to consume. Otherwise, the

broader goals of the project, increased material well-being, will not be realized.

This example bears out the complexity of planning small farmer project structures. It should also point to the necessity of involving small farmers in identifying the conditions under which required linkages among basic elements of a project's structure will obtain.

CHAPTER II

THE ENVIRONMENT AND MANNER FOR BRINGING RECOMMENDED SMALL FARMER PROJECT STRUCTURES AND PROCESSES INTO BEING

A. INTRODUCTION

In Chapter I, key elements of a more desirable small farmer project structure were identified on the basis of recommendations by Development Alternatives Inc. (3) and Lele (24). These elements were small farmer participation in resource contribution (project inputs) and in decision-making (project outputs). The execution of this recommended project structure entails the identification and allocation of a few, important external resources which effectively complement and mobilize local community resources for increases in small farmer incomes, marketable surpluses and sustained community growth and development.

In generating such a recommended project structure, small farmer involvement in project planning and execution⁸ was identified by Lele and other observers as a key aspect in integrating project processes.

The objective of this chapter is to explain the conditions under which these recommended project structures and processes can be applied in practice with donor support in LDC's.

This chapter is divided into two major parts. In the first part an environment will be described in which recommended project structures and

⁸ Execution includes the implementation, evaluation and modification phases of the project process.

processes are most likely to be brought into being. This will be done by describing desired roles of important actors in shaping an environment in which the necessary and sufficient conditions obtain for planning and executing small farmer projects in LDC's. In the second part the manner in which recommended small farmer projects could be planned and executed with maximum impact on growth and development will be described. Emphasis will be given to the use of cost-benefit analysis as a component of an overall information system and as a tool in identifying important assumptions and conditions under which requisite project benefits could be realized. The desired roles of major actors in executing various phases of the project process will also be described.

B. ON THE ENVIRONMENT FOR BRINGING RECOMMENDED SMALL
FARMER PROJECTS INTO BEING

The environment in which recommended small farmer projects can be brought into being will be described in the context of the special requirements of small farmer projects. On the basis of my experiences in Ethiopia and Ghana I have identified seven stages in the evolution of an environment in which the special requirements of small farmer projects are most likely to be met. These stages are described in Table 2.1 and grouped into three major categories as follows:

1. Toward a consensus,
2. Necessary conditions,
3. Sufficient conditions.

TABLE 2.1

STAGES IN THE EVOLUTION OF AN ENVIRONMENT IN WHICH RECOMMENDED
SMALL FARMER PROJECT STRUCTURES AND PROCESSES
COULD BE BROUGHT INTO BEING

STAGE I: Emphasis on applying capital-intensive technologies and expatriate, skilled manpower resources on large-scale production units.

Toward a Consensus

STAGE II: Redefining development goals in terms that would enable the majority of the population to increase their contribution to national employment, incomes and equity objectives. Learning that generating incremental marketable surpluses on large production units are not sufficient to attain overall development goals.

STAGE III: Reaching a consensus that traditional production units must be reached with appropriate technologies.

Necessary Conditions

STAGE IV: Testing and demonstrating technologies and services primarily addressing on-farm constraints to increases in productivity on traditional production units.

STAGE V: Diffusing these inputs and services. Promoting policies and programs that would give traditional production units access to improved technologies and recommended practices and incentives to adopt them.

Sufficient Conditions

STAGE VI: Learning that improved technologies, inputs and services do not address all constraints in generating increases in marketable surpluses from traditional production units.

STAGE VII: Implementing policies and programs that involve the majority of the population in growth and development processes, and which encourage the majority to participate in decision-making and resource contributions to programs which address off-farm constraints to increases in marketable surpluses, community incomes and development.

Stage VII depicts an environment where recommended small farmer project structures and processes can be planned and executed with maximum impact on growth and development. In this stage the objective of recommended small farmer projects is to enable small farmers to increase marketable surpluses; the broader objective to which this goal is applied is to enable small farmers to raise their contribution to national employment, income, equity and growth. Small farmer projects executed during other stages may have different objectives and may not have as much impact on growth and development as projects executed during Stage VII.

The characteristics of each of the categories and the forces bearing on the evolution toward an environment depicted in Stage VII will be discussed below.

1. Toward a Consensus

Several of the most important factors which are likely to lead to a consensus on the desirability of public sector support to small farmer projects can be summarized as follows:

- a. A large portion of the total number of holdings are small—e.g., cultivating ten acres or less primarily for subsistence.
- b. Small holdings cultivate a large proportion of total area cultivated.
- c. New technologies and improved practices exist, or can be identified which would be accepted by small farmers, so that they could increase productivity, marketable surpluses, and incomes at little risk.

d. New technologies and improved practices can be diffused to small farmers and resultant increases in marketable surpluses can be made available to end users at reasonable costs (relative to the value of incremental marketable surpluses and relative to costs of alternative strategies and programs such as public sector support to large-scale capital-intensive production units).

e. Evidence that on-farm costs (particularly their foreign exchange components) of increasing marketable surpluses on traditional small-scale production units are less than on large-scale production units.

f. Evidence that lack of public sector/donor support to small farmers will cause them and their families to abandon or leave their farms and migrate to urban areas in search for new employment opportunities.

g. Evidence that these rural-urban migrants cannot be effectively absorbed in urban employment.

Not all of these factors need obtain at the same time to justify a small farmer strategy or public sector/donor support to small farmer projects. However, where and when they do obtain simultaneously, a small farmer strategy can be justified on equity grounds as well as on the basis of its contribution to overall growth objectives. When these factors do not obtain, small farmer strategies and projects commonly have growth-equity trade-offs.

For example, take the case where on-farm and off-farm costs of increasing marketable surpluses are higher for a small farm than for a

large farm strategy and where, as a result of implementing a large farmer strategy, labor displacement causes migration and urban unemployment. In choosing a small farmer strategy under these conditions, policy makers in developing countries must implicitly weigh the costs of that strategy against the value to society of reducing urban unemployment and increasing rural employment and incomes.

These are difficult issues to come to terms with in practice. In matters of policy, decision-makers seldom start with a clean slate. The issue is rarely one of choosing between a small or a large farmer development strategy; rather it is one of deciding how much of each, when, and where. These decisions must take into account the conditions under which small farmer projects can be executed with minimum burden on public revenues and maximum impact on national development objectives.

The objectives of the next sections are to review these conditions. However, here it should be pointed out that the degree and magnitude of the growth-equity trade-off of small farmer strategies is an important determinant in the evolution of a consensus for the desirability of small farmer projects.

This is particularly true if policy makers regard the attainment of growth objectives in general, and a stable and cheap supply of agricultural products for urban consumers in particular, as an important precondition for remaining in power.

In the stage where a consensus for the desirability of small farmer projects is evolving, there are special roles and responsibilities for donor agencies and development planners. For donor agencies the

responsibility is primarily to foster the introduction of technologies that are relevant to small farmers. For LDC development planners the responsibility is primarily to assist their policy makers in evaluating the economic costs of foregoing public sector investments in small farmer development projects. This may be done by providing policy makers with hard facts about the organizational aspects, costs and returns of programs diffusing improved technologies and services to small farmers.

2. Necessary Conditions

The necessary conditions for executing small farmer projects have to do primarily with the existence of a technology or a technological package which:

- a. Raises the productivity of the factors of production on small holdings,
- b. Is profitable to small farmers relative to the risks that they are willing to bear,
- c. Is easily accessible to small farmers.

Table 2.2 lists several examples of agricultural inputs and services, any combination of which could comprise a technological package appropriate and essential for small farmers. The most appropriate combination usually depends on a host of factors given by the ecological, cultural, social and economic characteristics of the area in which small farmers cultivate their holdings.

In most developing countries the institutional and organizational capacity to deliver these services is in its infancy. The resources required to provide these inputs and services for most farm enterprises

TABLE 2.2

SOME EXAMPLES OF AGRICULTURAL INPUTS AND SERVICES
WHICH COULD COMPRISE A TECHNOLOGICAL PACKAGE
APPROPRIATE FOR SMALL FARMERS

A. Inputs and Services Commonly Provided by Public Institutions:

1. basic and applied research
2. crop and livestock extension/demonstration and education
3. disease and pest control
4. regulatory services and quality control
5. planning and statistical services
6. market intelligence and market promotion
7. marketing of essential export commodities
8. institutional coordination of special public works and community development programs
9. conservation of resources
10. land and tenancy reform and administration

B. Inputs and Services Commonly Provided by Private Organizations:

1. procurement, production, distribution, and sale of agricultural inputs and supplies, i.e., fertilizer, fuel, and agro-chemicals
 2. agricultural credit—short and long-term
 3. output marketing and distribution
 4. special hire services such as tractor pools
 5. agricultural processing
 6. production, repair, and maintenance of agricultural machinery, tools, and implements.
-

on a national basis will impose considerable burdens on LDC revenues and on experienced high- and middle-level personnel. It takes a long time, frequently many generations, before these systems can be put into place and made accessible to small farmers. It is for these reasons that essential agriculture service systems in LDC's frequently are implemented on partial bases, either for a few selected crops important to the national economy or in a few geographic areas having considerable production potentials or special needs and requirements.

One of the most important issues in development policy and planning has to do with the macro policies and public sector programs which would encourage an optimum mix of public and private effort in implementing coordinated agricultural input delivery and services systems. Where policies and public sector programs inhibit effective participation of the traditional or private sector, implementation of small farmer projects may impose large burdens on LDC government revenues and manpower resources.

A common example where policies and public sector programs inhibit the development of the private sector is in the area of food crop marketing. Frequently, para-statal marketing corporations are established in an attempt to reduce marketing margins. Often such public sector investments ignore the fact that marketing margins of private traders are high because marketing costs and risks are high. These may be high because there are few feeder roads, the conditions of primary and secondary roads are deteriorating and vehicle fleets are ageing. In reducing marketing costs a program of feeder road construction

may have greater effect on reducing marketing margins than resources allocated to para-statal marketing corporations (which will inevitably have to compete with private traders under the same difficult conditions).

The point being made in this section is that, in bringing about the necessary conditions for executing small farmer projects, it may be desirable to implement macro policies and public sector programs which would encourage maximum private sector participation in the provision and distribution of essential agricultural inputs and services. Under these conditions the resource burden on LDC governments in financing the off-farm costs associated with distributing inputs to small farmers and with moving marketable surpluses to end-users will be considerably reduced. Resulting savings in LDC government revenues and manpower resources could then be allocated toward bringing about the sufficient conditions of an environment where recommended small farmer project processes could be planned and executed.

In the stages where the necessary conditions are being established, major actors also will have specific roles and responsibilities. These responsibilities have to do primarily with identifying and executing programs and policies which:

- a. Allow small farmers effective and equitable access to improved technologies and services.
- b. Give small farmers requisite incentives to adopt improved technologies and practices.

Where improved inputs are distributed primarily by the private sector, it is likely that small farmers in outlying rural areas will not

have as easy access to these inputs as farmers located near rural market towns. Private traders may not have incentives to distribute relatively small amounts of fertilizer or seeds over large distances to a few buyers. Under these circumstances there may be a special case for using public resources to subsidize the cost of distributing inputs to outlying areas. This could be done by:

- a. Subsidizing private traders
- b. Sponsoring special voluntary organizations
- c. Using the extension service or other para-statal organizations such as crop development boards or credit institutions
- d. Subsidizing and promoting farmer associations.

Whatever the choice, it should be made on the basis of organizational and administrative feasibility and cost effectiveness.

Policies and programs designed to provide price incentives to small farmers can also take many forms, but fall into two broad categories:

- a. Subsidizing inputs such as credit, fertilizer and seeds,
- b. Stabilizing product prices directly through minimum guaranteed prices or indirectly through commodity purchase schemes administered by para-statal corporations.

The needs and justifications for these programs in LDC's are varied and complex, as are the underlying causes of the problems that these programs attempt to address. In most instances, however, the problems are caused by failure of the pricing mechanism to bring about desired production responses.

Development planners will have a specific responsibility in understanding the forces underlying these problems so that they can evaluate trade-offs of alternative policies and programs. Frequently, pricing policies and public sector programs may create new problems or compound existing problems.

For example, in many LDC's small farmers and their families are also traders whose activities may account for significant proportions of total volumes brought to urban markets. The incomes that farmers and their families derive from trading may account for large proportions of the total cash income of the farmer's households.

These forces give rise to an atomistic market structure where products moved from farm to end-user pass through the hands and mark-ups of many traders. In bad crop years and high food prices, marketing margins are likely to increase proportionally more than farm gate prices. As a result, retail prices to urban consumers will be even more affected. This situation frequently leads to pressures on policy makers to curb the activities of middlemen and "hoarders." As a result para-statal marketing boards or corporations are commonly established. They may or may not be more effective than small traders in moving marketable surpluses to urban consumers. However, as these corporations control larger proportions of marketed surpluses, small traders will be driven out of business. Many may also be farmers. Their ability to maintain household cash incomes will be reduced, unless they have or are provided incentives and means to increase farm production and marketable surpluses.

There are other examples where macro policies and public sector investments in agricultural input delivery and service systems are likely to create new problems as they solve old problems. Again development planners will have special responsibilities in understanding the environment in which they attempt to "engineer" change.

For example, in drawing small farmers into the market nexus there will inevitably be pressures on development planners to do this for crops in which the country has a comparative advantage, and in regions where the domestic resource cost of generating foreign exchange earnings through the promotion of an export crop or import substitute is lowest. Where the country has balance of payments problems this may be a desirable objective, but to pursue it under certain conditions may make some small farmers worse off.

These conditions usually relate to situations where small farmers crop their fields between seasons in complex land and crop rotations and within seasons in equally complex intercropping systems. Assuming that the introduction of a new cash crop is technically feasible in a specific geographical area, it leaves open the question whether its production implies behavioral changes and adjustments of small farmer systems which are economically and socially feasible. If the adjustments are not feasible, then the incremental production of the new cash crop may be limited to a few, relatively larger and more progressive farmers who, because of their overall income position, have a higher propensity to bear risks associated with adopting innovations. However, because of their social position within the community, they may also have a high

degree of skill in avoiding taxation. The poorer farmers may become absolutely and relatively worse off, and the economic pay off of the project may not be translated into commensurate increases in government revenues.

The above examples illustrate the fact that planning and execution of agricultural input delivery and service systems are necessary but not sufficient conditions for the effective and equitable implementation of strategies and programs designed to raise marketable surpluses from small holdings. Further examples of this will be given in the next section, where important sufficient conditions for executing recommended small farmer processes will be identified.

3. Sufficient Conditions

The provision of essential agricultural inputs and services, or technological packages, may lead to increases in productivity on small holdings, if these packages are profitable. However, these packages will not necessarily lead to increases in marketable surpluses from small holdings.

Frequently small farmers and their families have expectations of increasing household incomes from sources away from the holding. In that case improved technologies may lead to increases in labor productivity. This may result in reduced labor inputs necessary to maintain production at a level required for household maintenance. Released labor will be employed elsewhere if employment opportunities exist; otherwise there will be more leisure. In either case there may

be a net gain to the economy or a gain in the well-being of the household. However, there may not be an increase in marketable surpluses.

Under other conditions a technological package may appear to be profitable but not be acceptable to small farmers. The incremental labor (family or hired) required to adopt the package may not be available; the recommended practices associated with the package may be culturally taboo; or a recommended crop or improved variety may not fit into established cropping patterns or be inconsistent with traditional tastes and preferences. Consequently, the crop or improved variety may not be grown in spite of the potential cash incomes that may be realized.

Under different conditions the lack of a technological package may not be the most important constraint to increasing marketable surpluses. Off-farm constraints such as lack of feeder roads, domestic water supplies or health services may be more limiting than inadequate inputs and services.

The point being stressed is that the sufficient conditions for planning and executing recommended small farmer project processes are very complex and extremely difficult to establish. They may also be extremely costly in terms of the time and resources required to put them into place.

This is because they require many components which can not always be foreseen when they are planned from the top-down and with little knowledge of the specific ecology and the socioeconomic environment.

Small farmer projects may require considerable reform of existing social institutions; they may require considerable efforts in organization and coordination among a host of public institutions and private agencies for successful execution; and they require a great deal of commitment, even under the most ideal conditions, to a task which may have a long gestation period before initial benefits are attained and long pay-back periods before sufficient returns may be realized.

These facts underlie the high off-farm and project costs of a small farmer development strategy compared to a strategy of producing incremental marketable surpluses on capital intensive, large-scale production units. While it is probable that these costs may be more than offset by relatively lower on-farm and foreign exchange costs of small farmer projects, off-farm and project costs must be financed in the short run. Therefore, in planning and executing small farmer projects measures need to be found to reduce these off-farm costs and/or shift the burden of financing these costs to small farmers.

It is for these reasons that recommended small farmer project processes are best planned and executed on a geographical basis in areas having relatively homogeneous ecological, cultural and economic conditions. Under these circumstances the following sufficient conditions can be most easily brought about:

- a. Small farmers can be involved in identifying on-farm and off-farm constraints to increasing productivity, marketable surpluses and incomes.

- b. Small farmers can be involved in identifying and planning project components/activities to overcome these constraints.
- c. Small farmers can participate in decision-making in project planning and execution.
- d. Small farmers can contribute in cash or in kind to project costs.
- e. Project components/activities can be expanded at a rate that small farmers can mobilize their own resources.
- f. Limited external resources can be mobilized which are most complementary to local community resources.

These conditions underlie a manner and approach to planning and executing small farmer projects which has rarely been applied with donor support. This may be better understood by discussing the optimum roles of the most important actors in shaping the environment in which recommended small farmer project structures and processes can be planned and executed.

4. The Optimum Role of Major Actors

a. The policy maker. By far the most important actor in establishing the sufficient conditions is the LDC policy maker. It is he who must define the overall development strategy and it is he who must define it in terms consistent with the aspirations of the majority of the population and in terms consistent with the ability of that majority to participate in the attainment of national growth and development objectives. The LDC policy maker must also define the broader policies

and programs which are likely to affect the manner and pace of strategy implementation. And he should define the roles of the private and public sectors in implementing the programs consistent with that strategy. Finally, he should be able to monitor events, to hold various public institutions accountable for their actions and to steer private organizations on desired paths. The policy maker is most likely to accomplish these things when he:

- i. Implements a system of political and administrative decentralization which effectively involves local communities and traditional authorities in decision-making.
- ii. Defines a macroeconomic policy mix which provides maximum incentives to the private, traditional sectors in participating in growth processes.

b. The development planner. The responsibility of the development planner, be he with the host country or a donor agency, is to find ways to implement and finance the strategy. In the context of shaping the environment in which recommended small farmer projects can be executed, the planner should live and work in rural areas, where the small farmers are, so that he can understand the ecological, social and economic characteristics of the environment and the communities he serves. He should help communities to identify their constraints and their potentials. And he should act as their spokesman in facilitating two-way communications between small farmers and the national agencies established to serve them.

More specifically, the development planner should help local communities to identify the optimum size, composition and timing of investments which would most effectively and equitably promote the growth and development objectives of local communities. He should identify the external resources required that would best complement and be most consistent with the manner in which communities can mobilize their own resources for sustained growth and development.

In doing these things the development planner should have the following skills:

- i. An ability to organize and manage talent and resources to identify, design, appraise and plan the implementation and financing of investments that are workable and have impact on the well-being of the community.
- ii. An ability to organize and manage talent to monitor and evaluate such investments for their efficiency and effect on community growth and welfare.
- iii. An ability to identify and communicate key external resource needs to agencies that are most capable and likely to provide these resources.

c. Donor agencies. When sufficient conditions for implementing recommended small farmer project processes are being put into place, the optimum role of donor agencies is a passive one. Their roles should be restricted to responding to specific assistance requests and to rapidly evaluate these requests in terms of their own mandates. When

these requests are approved, donor agencies should provide real goods and services at a rate that host countries are able to absorb.

d. Small farmers. The effectiveness and effect of small farmer development projects will be determined largely by the manner in which small farmers, either individually or through their local organizations, are able and willing to share in decision-making and resource contributions to specific development activities. A most important precondition for executing recommended small farmer projects is that small farmers not expect LDC governments or project authorities to do all things for them. Small farmers should come to an understanding that they bear the major responsibility for initiating, planning and executing development activities that they themselves want and perceive to affect their incomes and well-being. Finally, if small farmers choose to abrogate these responsibilities to their local organizations they should learn to hold the leadership of their organizations responsible for the effective participation and involvement in national growth and development processes.

C. THE MANNER IN WHICH RECOMMENDED SMALL FARMER PROJECTS
COULD BE BROUGHT INTO BEING

In this section the manner in which recommended small farmer projects processes could be set in motion will be described. It is hoped that this discussion will provide a clearer understanding of the processes that should be approximated in practice with donor support.

1. The Initial Request for Assistance

The basic force that should set recommended small farmer projects in motion in a given geographical area is a specific request for assistance by small farmers and/or their local organization. The assistance activity may have been identified by farmers, or by technicians, or planners. The request may be for one or more of the following:

- a. The introduction of a new crop, farm activity or enterprise;
- b. The provision of specific inputs and services;
- c. Resources to plan, execute and finance off-farm activities which affect farm productivity and incomes, i.e., feeder road improvement, village water systems, community storage schemes, health services, etc.

The request is then evaluated by development planners and their local planning units in terms of its consistency with local plans, development priorities and resources. If the request is consistent with plans, and priorities and local resources are not available, the request is forwarded to national planning units. There the request is similarly reviewed. Possibly visits are made to the district to get some idea about the returns to external resources and their complementarity with local resources. If required resources are not available from domestic sources, the request, under certain circumstances, will be forwarded to a donor agency. A similar review process is then initiated before external resources can be justified and mobilized.

This is not to say that it would be possible or desirable to move ahead with all projects that local people have proposed in the form that

they have suggested. National planners and decision-makers have to mesh projects and other programs together so that they complement one another as much as possible. Shortages of funds, personnel, or materials may make it necessary to provide less help than requested, or delay action, or give other development activities higher priority. Project aims may need to be modified to be compatible with the interests of other groups in the economy. The main point is that an improved environment for bringing projects into being can and should lead to more local capability to initiate and shape proposals suited to their own situations.

2. Donor-Supported Project Planning Process

Suppose the initial request dealt with making available a technological package (e.g., improved seeds, tools and fertilizer) for grain legume crops in the area in question. Suppose also that the request was based on trial and demonstration results on similar soils which showed that the technology could be profitable.

The project planning or design team—composed of farm leaders, members of local and national planning offices, and donor agency representatives—must first come to a decision about the optimum size and composition of the assistance program. A framework must be evolved which would identify the following:

- a. The important assumptions underlying the attainment of project benefits (i.e., increased productivity, marketable surpluses and incomes of small farmers).
- b. The conditions needed to sustain a desirable stream of benefits when external resources are withdrawn.

- c. The factors of uncertainty which are likely to have the greatest effect on the attainment of project benefits.
- d. Criteria and information necessary to assess project impacts and cost effectiveness, small farmer participation in decision-making and small farmer contribution to project costs.

An essential component of such a framework is cost-benefit analysis, along with such related techniques as farm budgets and household expenditure studies. This is because cost-benefit analyses will enable planners to identify questions and issues which, though they cannot all be answered during project planning, will have to be examined further during the course of project execution. Most of these questions and issues relate to conditions and assumptions about the adjustments that typical small farmers would have to make in order to adopt the technological package and to generate and sustain incremental grain legume production increases. Some of these questions and issues are as follows:

What is the cropping pattern of the typical small farmer?

What is the farmer's net cash flow throughout the agricultural year?

Can the farmer finance the incremental costs associated with the package, given his risk preference?

Is a credit component necessary to assist farmers in financing the package? What interest charges, pay-back periods and organizational structures are appropriate?

What are the incremental labor requirements of the package? By whom can labor be supplied at what time of year?

Who is traditionally responsible for what farm activities at what time of year?

Will adoption of the package require hired labor? At what price will it be forthcoming?

Will a water development component free additional family labor? What is the cost of water development relative to the value of labor that will be freed?

How does the introduction or promotion of grain legumes fit into intercropping, crop and land rotation systems and fallow practices? What incremental yield effects will this have on other crops in the rotation?

What investments in permanent improvements, such as on-farm storage and harvesting materials, will the small farmer have to make to accommodate the new crop or yield increases?

What are the seasonal price variations and how do they affect the new cash flow of the holding?

What proportion of incremental production will be consumed, wasted, spoiled and required?

Will the farmer require credit to finance consumption of traditional food crops not now produced and/or to carry inventories of the new crop to obtain higher prices later in the season?

What is the relation between farmer traders and other marketing agents?

Are other institutional arrangements necessary to strengthen farmers bargaining position vis-a-vis marketing channels? What would be the effect on farmer and trader income?

Is a marketing component required? What form should it take? Should it include input distribution functions?

Are cooperatives feasible? Should they use systems of warehouse receipts? Must they keep farmer produce individually identified?

Are processing facilities necessary? Who should own them?

Is a feeder road improvement scheme necessary so that marketable surpluses can be evacuated?

What form of extension and demonstration system is most appropriate to educate farmers in the use of the new technological packages?

Are existing local organizations effective mechanisms for establishing a two-way communications between small farmers and the implementing agency?

Insights related to these and other questions can help the planning team to:

- a. Identify requisite components, activities and resources which are most likely to generate desired project benefits.
- b. Determine the cost of these resources.
- c. Define the optimum size of the program in relation to anticipated benefits.
- d. Identify the conditions under which desired relations between project inputs, outputs, objectives and goals will be realized.

- e. Come to a judgment about whether these conditions are realistic and are likely to be attained during the course of project execution.
- f. Identify those activities which are most manageable and are most likely to have a desired rate of return.

With this framework, the available data and the assumptions made the planning team could come to a judgment about whether it is desirable to move ahead with the project. It should be stressed that this judgment is not based on a rate of return of the project. It is based primarily on the nature of the assumptions made under which a desired rate of return may be realized. The more stringent and unrealistic these assumptions appear to be, the more cautious the planning team should be in recommending the project.

The problem in project planning is that all the information necessary to determine whether a project is feasible cannot always be obtained before a decision has to be made as to whether or not to go ahead with the project. The most intractable pressures to move ahead with a project commonly arise from the expectational process that project preparation efforts generate. These expectations come from many sources, but primarily from farmers. One can guard against them in two ways:

- a. By encouraging maximum involvement of farmers in project planning and in discussing and reviewing the conditions and assumptions under which the linkages between basic project elements would be realized.

- b. By preceding project execution with an experimental phase during which:
 - i. Certain components/activities are executed which appear to be more workable and less problematical, whose returns appear more certain, and whose objectives are most likely to be attained. Examples are intensified extension and demonstration, supply of essential inputs, applied research on farmers' fields, and formation and training of farmers groups, associations and other organizations.
 - ii. The extent to which the conditions of the more difficult components, whose returns and sources of financing are less certain, can be tested. Examples of these components are self-help activities in feeder road improvement, terracing, afforestation, construction of dams and water impoundment systems.

It is important, however, that new activities are initiated only when sufficient evidence exists which would bear out a maximum probability that:

- a. A given rate of return is likely to be realized;
- b. Economic returns can be transferred into incremental revenues to finance future investments and/or social services;
- c. The components are workable and manageable;
- d. Small farmers are involved in decision-making and resource contributions.

For these reasons an information system, of which cost-benefit analysis is an important component, is essential not only for project planners, but also for project implementors and evaluators. Such an information system must be continuously refined and updated as new knowledge becomes available, new techniques and components are tested and as lessons are learned. Such an information system organizes research for action and allows the project process to evolve smoothly and at a rate commensurate with the rate at which information becomes available. Under these conditions the project process can be fully integrated in its planning and execution phases—a state of affairs where planning is done for action and execution, and where execution furthers more planning for action, and so on.

D. SUMMARY

In the foregoing sections an environment and manner in which recommended small farmer project processes could be brought into being has been described in some detail. Points and issues have been put forward which could be regarded by some readers as belaboring the obvious. For these readers it should be pointed out that the reality in LDC's is far removed from the conditions under which recommended small farm project structures and processes could be planned and executed. Within the scope of my experience, the following overall limitations frequently exist:

- a. Policy makers regard increases in marketable surpluses as means to placate urban elites rather than as means to enable the rural

population to effectively contribute to overall growth and development processes.

b. Systems of political and administrative decentralization are regarded as a threat to policy makers whose power base is at best tenuous.

c. Agricultural input delivery and services systems, where they do exist, cater primarily to large and wealthier farmers.

d. Macro economic policies and programs do not encourage optimum participation of the private sector but reflect an overall system of public sector control which frequently leads to arbitrary decisions about the allocation of resources, particularly of foreign exchange.

e. National sector planning, programming and budgeting is a "top-down process," frequently benefitting the implementors of public sector programs rather than the target population.

f. Development resources are primarily channeled and expended in urban areas.

g. Methods of tax collection and revenue disbursements are frequently inequitable and do not give sufficient incentives for rural communities to mobilize resources for growth and development.

h. Past development efforts and some of their failures have made local communities suspicious of government intentions.

Because of these major limitations, it is possible that donor agencies may lose sight of the objectives to which they endeavor to apply their resources and skills in implementing their new mandates.

It is anticipated in this study that an attempt to contrast actual conditions to the environment and manner described above will point to:

- a. Some major problems and limitations underlying the reasons why the recommended structures and processes can seldomly be approximated in practice,
- b. A rationale for the things that donors do under limiting conditions.

Before proceeding it may be useful to summarize the special requirements of small farmer projects in relation to the roles of the major actors responsible for shaping the environment in which recommended structures and processes can be brought into being.

Responsible Actors

Requirements and Conditions for Planning and Executing Recommended Small Farmer Projects

1. Policy makers

- a. definition and commitment to a strategy which endeavors to affect the well-being of the majority of the population;
- b. macroeconomic policies which encourage maximum private, traditional sector participation in growth and development processes;
- c. political and administrative decentralization which would

encourage maximum participation
by small farmers or their local
organization in decision-making;

- d. a revenue collection and
distribution structure which is
effective, equitable and provides
incentives to local communities
to participate in financing
growth and development activities.

2. Development Planners

- a. identification of local policies
and programs consistent with the
strategy;
- b. involvement of local organizations
and the traditional sector in
planning and executing such
policies and programs;
- c. identification of external
resources required to effectively
complement and mobilize local
community resources.

3. Donor Agencies

- a. assisting LDC efforts in financing
and managing resource gaps;
- b. readily responding to LDC requests
for assistance by providing real
goods and services which are

complementary with domestic resources and ability to mobilize them.

4. Small Farmers

- a. keeping expectations for growth and development in line with their willingness to participate in project planning, execution and financing;
- b. initiating and integrating various phases of the project process;
- c. holding leadership of local organizations accountable for effective and equitable discharge of their functions.

It has also been suggested that, when actors behaved and acted in a manner consistent with these requirements and conditions, recommended small farmer project structures and processes could be generated. The phases of these processes can be summarized and related to the major actors as follows:

<u>Phases/Components</u>	<u>Responsible Actors</u>
1. Initial project identification and preparation of initial request.	Small farmers and their local organizations in a geographic area.

- | | |
|---|--|
| 2. Initial review of request relative to availability of resources, returns and district plan priorities | local planning and technical units |
| 3. Request for national assistance and resources | local planning units |
| 4. Review of request relative to availability of national resources, returns and national plan priority | national planning and technical units |
| 5. Request for external assistance and resources | national planning units |
| 6. Review of request relative to availability of donor agency resources and consistency with donor mandates | donor agency |
| 7. Project planning | small farmers, officials from local, national and donor planning and technical units |
| a. identification of important assumptions underlying project success | as above |
| b. identification of important conditions that need to be | as above |

- attained so that project goals are realized
- c. design of information system as above
and criteria to assess project impact, effectiveness and sequencing of project components
 - d. determination of optimum as above
size, composition and sequencing of project components relative to desired rate of returns and local resource contributions
 - e. determination of as above
effectiveness of local organizations to involve small farmers in decision-making and resource contribution
 - f. project approval as above, and national and local planning units and donor agencies
 - g. project execution and financing local farmer organization with assistance from local and national agencies, special outside experts and traditional/private sector

- a. preproject experimental as above
activities
- b. using and updating as above
information systems
- c. monitoring and evaluation as above
- d. adjustments as above.

In the context of the above, the actual environment and manner in which four small farmer development projects were brought into being with donor support in Ethiopia and Ghana will be discussed in Chapters III and IV, respectively.

The author participated in the identification and planning of these projects. These projects are listed in Table 2.3 together with several of their major features.

TABLE 2.3

MAJOR FEATURES OF SMALL FARMER PROJECTS WITH WHICH THE AUTHOR WAS
ASSOCIATED IN ETHIOPIA AND GHANA

Country/Project	Objective	Focus	Implementing Agent	Donor	Manner in Which Cost-Benefit Analyses was Applied	Degree of Small Farmer Involvement in Decision-Making and Resource Contribution
<u>1. Ethiopia</u>						
a. Pulse Promotion Program	to promote pulses for export	nation-wide	Ministry of Agriculture	USAID	to identify a rate of return	none
b. Tigre Land Improvement Program	to introduce new soil conservation techniques	area specific	Ministry of Agriculture	IBRD	limited to several project activities only but as part of information system	none
<u>2. Ghana</u>						
a. Managed Input Delivery and Agricultural Services Program	to provide inputs and services on a timely basis	nation-wide	various Public and private sector agencies	USAID	to identify the assumptions and conditions under which a desired rate of return could be realized and as a component of an overall information system.	none
b. District Planning and Rural Development Program	to involve farmers in rural development processes	area specific	local community organizations	USAID		high

CHAPTER III

THE ENVIRONMENT AND MANNER IN WHICH DONOR-SUPPORTED SMALL FARMER DEVELOPMENT PROJECTS WERE BROUGHT INTO BEING IN ETHIOPIA

A. INTRODUCTION

The objectives of this chapter are twofold. The first objective is to describe the environment in which projects were brought into being from the way I perceived the events in Ethiopia during the period May 1972 to June 1974. As implied in the previous chapters my perception of events is influenced by the way I have delineated the stages in the evolution of an environment most conducive to recommended small farmer project structures and processes. These stages were depicted in Table 2.1, page 21.

In practice these stages are not distinct and there may be considerable overlap between them. However, for the purposes of the arguments made throughout this dissertation it is important to note that the roles and interplay among the major actors in development planning are the major determinants of the evolution of these stages. Also, these stages are the major determinants of the identification of small farm projects and the manner in which they are planned and executed. Therefore, it is in the context of the evolution of these stages that the Ethiopian environment will be described in the first

part of this chapter as it affected the planning and execution of small farmer development projects.

The first part is organized into four major sections: the first will delineate important background forces so that critical influences bearing on the roles and interplay among major actors can be understood; the second will describe important factors bearing on the evolution of a consensus about the desirability of small farmer projects in Stages II and III; the third will describe the important factors bearing on the evolution of the necessary conditions for planning and executing small farmer projects in Ethiopia, i.e., Stages IV and V; the fourth will describe the important factors bearing the evolution of the sufficient conditions in Stages VI and VII.

The second objective is to describe the manner in which projects were actually planned, i.e., formulated and designed. This will be done in the second part of this chapter where my experience in the design of the Pulse Promotion and Land Improvement projects will be highlighted. This second part of the chapter is divided into three major sections: the first will describe important features and constraints to project planning; the second will describe the reasons that the Pulse Promotion and Land Improvement projects were identified; the third will describe the problems and limitations in which these projects were designed focusing particularly on the practical uses and abuses of cost-benefit analyses.

B. THE ENVIRONMENT IN WHICH SMALL FARMER
PROJECTS WERE BROUGHT INTO BEING

1. Background Forces

When I arrived in Ethiopia as an advisor to the Project Identification and Preparation Division of the Ministry of Agriculture in May 1972, Ethiopia was already regarded as an ideal testing ground for development approaches to small scale farming for several reasons.

First small farmers (tenants or otherwise) cultivating three hectares or less made up a large proportion of the total number of holdings. They also accounted for significant proportions of total land area cultivated, total agricultural production and total marketed production of food and export crops.

Second, results from the Food and Agriculture Organization/Freedom from Hunger Campaign (FAO/FFHC) trials and demonstrations (14) on farmers' fields⁹ had shown encouraging responses of major cereals to fertilizers, improved seed varieties and improved cultivation practices. Ethiopia, therefore, had found a technology which was relevant and potentially profitable to a large proportion of its farm population.

Third, by 1972 Ethiopia had had considerable experience in two integrated agricultural development programs and with the practical aspects of disseminating these technologies. The first was started in September 1967, supported by Sweden, and called the Chilalo Agricultural Development Program (CADU). The second, started in December 1969 with

⁹ The program was started in 1966 and implemented throughout the highlands of Ethiopia.

support from the International Development Agency (IDA), was called the Wolamo Agricultural Development Program (WADU). Each was implemented in a different subprovince or awarja by specialized project authorities which were later to come under the jurisdiction of the Extension and Project Implementation Department (EPID) of the Ministry of Agriculture.

Consequently, several lessons had been learned about organizing the delivery of technological packages to farmers, about the conditions under which the package was most profitable, and about who benefitted from the package.

However, the beneficiaries were primarily absentee landlords, who, finding improved access to stable urban markets, rapidly displaced their tenants and consolidated their holdings into large-scale, mechanized farming operations.

These experiences led to a decision by officials of the Ministries of Economic Planning and Agriculture, supported by officials from Swedish International Development Agency (SIDA) and the International Bank for Reconstruction and Development (IBRD) to replicate the technological package on a national basis to gear it specifically toward small scale production units. This decision, and the evidence of the relative efficiency of small-scale nonmechanized farming operations, were communicated to the first meeting of the Consultative Group for Ethiopia of major donors in Paris early in 1971. This lead to the implementation of the Minimum Package Program (MPP) in the Fall of 1971 (15).

The objective of the program was to provide minimum inputs and services (i.e., the necessary conditions) so that the adoption of the package (fertilizer, improved seeds, and cultural practices) would be profitable to small cereal farmers throughout the Ethiopian highlands. These services were credit and easy and regular access to improved inputs, and advice on improved cultural practices. Ten MPP's were to be established each year on sites whose suitability had been determined by the FAO/FFHC demonstration activities and trial results. Each site was to extend 75 kilometers along a major road, encompassing a band three to five kilometers on either side. Each MPP area contained about 10,000 small farmers, of whom 75 percent were to be reached after eight years. Each farmer reached, cultivating an average of 1.5 hectares, was expected to bring 90 percent of his holding under improved inputs and practices within five years. This would result in a doubling of weighted¹⁰ average yields per hectare from a without-project yield of 10 quintals per hectare to a with-project yield of 20 quintals per hectare.

Each area was staffed by one supervisor, five extension agents and five input distribution agents. Farmers in each MPP area could obtain improved inputs in kind on credit from one of five trading centers. Activities of agents in each area were closely monitored. The MPP was under EPID of the Ministry of Agriculture which had, by the time of initial MPP operations in 1971, obtained the right to hire

¹⁰Weighted by the cropping pattern of the typical small holding.

agents on a contract basis. EPID could therefore operate outside civil service personnel guidelines by hiring, firing, and promoting agents according to its own criteria of effectiveness and efficiency. Each MPP area was closely evaluated and studied on an ongoing basis for its impact on farmers reached and on farm production and incomes according to criteria evolved from its cost-benefit calculations. As experience was gained, as production was increased, and as new constraints and potentials were identified, each MPP area was to expand its activities and services to small farmers.

2. Toward a Consensus

The evolution of the MPP program had, by the time of my arrival in Ethiopia, set the stage for future small farmer development approaches. It had also given shape to the environment and manner in which future programs were to be identified and formulated. This was true in spite of the radically different agricultural development strategy promulgated in the Third Five-Year Development Plan that began in 1968.

The plan document emphasized incremental marketed production, its effects on the balance of payments and the role of large-scale commercial farms, such as those located in the fertile Awash Valley. The capital costs of these farms, whose establishment had displaced many Muslim nomads from their traditional rangelands, were subsidized by the Awash Valley Authority, a regional land and water development agency established in mid-1966 and supported by IBRD. The Plan mentioned the need to search out new technologies for peasant farmers but it

focused on investments, with IBRD support, on new large-scale cotton, sugar, and tobacco farms in the Awash Valley, large maize farmers in the Humera area near Eritrea, and large dairy farmers near Addis Ababa and Asmara.

However, the evolution of MPP and the experiences at CADU and WADU had by 1971 completely reoriented the views of donors and development planners. This reorientation radically affected the final design of a third large-scale agricultural project, supported by the United States Agency for International Development (USAID), in the Ada awraja located in the highlands near Addis Ababa. This awraja was an important producer of high quality (white) teff,¹¹ the preferred crop of Ethiopians. The project initially focused on the provision of tractor hire services and on the promotion of new export crops, primarily pulses. The project was initially consistent with the growth focus of the Plan. However, the experiences of CADU, WADU, and MPP induced USAID to redirect the objectives of its programs. USAID was also influenced by the arguments of Carl Eicher, a Michigan State University economist, who visited Ethiopia at that time. Of much influence also was a study by Gene Ellis (4), which supported the new wisdom with hard facts about the efficiency of traditional small-scale production units relative to larger mechanized units. Therefore, the Ada Agricultural Development Project was reformulated and redesigned with the objective of testing

¹¹Teff is a cereal with characteristics similar to wheat.

new innovations and technologies for traditional production units, including model lease arrangements which would give tenants greater incentives to adopt improved technological packages.

3. On the Necessary Conditions

After 1971, when MPP was reaching more small farmers with improved inputs and services, the single most important issue that determined the interplay among policy makers, development planners, donor agencies, and farmers in the formulation of agricultural policies and programs was land reform. The issue concerned the high concentration of land ownership by a relatively few, frequently absent landlords in individual tenure areas, and the resulting incidence of tenancy.

Individual or freehold tenure was the most prevalent form of land tenure in Ethiopia, particularly in the more productive highlands. More than half the total cultivated area was farmed by tenants, and more than half the rural population were tenants (21). There was considerable agreement among development planners and donor agencies that landlord/tenant relations were unsatisfactory. Most of the arrangements were oral, security was inadequate, and rents were paid primarily in kind as an agreed percentage of the annual crop. These rents were sometimes three-quarters of the annual crop, if the landlord provided oxen, frequently one-half, but more commonly one-third, if the landlord provided no inputs. The problem with these arrangements from a development point of view was that they provided tenants very little incentive to adopt new technologies and practices; the tenant would incur all incremental costs associated with the use of the technological

package but would receive only two-thirds or even one-half of the incremental crop. Only under very exceptional circumstances would the tenant view the package as attractive. The example below is illustrative.

The incremental gross income per hectare of the typical holding participating in the MPP was estimated in the cost-benefit calculations to be Eth\$ 155.¹² The cost of inputs was Eth\$ 59 per hectare and on-farm yield dependent labor costs were imputed at Eth\$ 37 per hectare, giving an incremental value cost ratio of 2.6¹³ if the tenants incremental labor had no opportunity cost. Now, for a tenant paying one-third in rent, the ratio is reduced to 1.76 and further reduced to 1.3 if he pays one-half. If the tenant attaches an opportunity cost to labor and other things are equal he will not adopt the package.

However, other things are not equal. Landowners will adopt the package within an MPP area. Production will increase and prices will decrease if there are no new market outlets. Also, landowners are likely to increase rent because the new technology has increased the value of land. In either case the tenant will be at a further disadvantage. What adjustments are possible? Ellis argued that tenants would be forced to adopt the package, unless they saw an alternative use for their and their families' labor. However, in many instances the tenant had little time to study returns of alternative employment since he was summarily evicted.

¹²One U.S. dollar equaled 2.55 Ethiopian dollars in 1972.

¹³The conventional wisdom established by project designers usually stipulates that this ratio must be 2.0 before farmers will adopt a package.

Policy makers, however, viewed things differently from development planners and the donor agencies. Policy makers at that time were members of the Ethiopian Parliament. This was a body in which the Emperor had cleverly vested authority to consider the new land reform legislation promulgated, with considerable caution, by the Ministry of Land Reform and Settlement. Almost all Members of Parliament were landowners, and many were absentee-owners of large tracts of land. The pace of reform was slow, cumbersome and difficult, and the lack of action by Parliament considerably retarded the rate at which new small farmer development projects were proposed and could be carried forward. This was true especially after the Summer of 1972, when Parliament had refused to approve a second, rather mild form of tenancy legislation.

There were other issues on which policy makers were set against donor agencies and development planners. The idea was put forward by Ethiopian development planners and donors that a settlement program on Government land should be initiated for evicted tenants. However, there was no legislation that recorded and controlled Government rights to land. Also, there was some confusion between Government land and Crown land which the Emperor doled out freely as patronage grants to faithful soldiers and servants. The ownership of most Government land (especially fertile land) that the Ministry of Agriculture had surveyed on reconnaissance missions to identify areas for settlement projects was disputed. The Ministry referred these cases to the Ministry of Land Reform and Settlement, but no further action was or could have been initiated by them in Parliament.

In the last half of 1972, a series of events occurred which further consolidated the view of development planners and donor agencies. These events also widened further the rift between Ethiopian development planners and various Ethiopian policy makers.

The first event was the publication, in July 1972, of the preliminary draft of the IBRD "Agricultural Sector Survey" (19). The document highlighted land tenure as the most critical area for reform, and the lack of such reform as the major constraint to increasing overall agricultural production from small production units. However, under the assumption that the Ethiopian Government would make more rapid changes in land reform in the future, the report recommended a ten-year investment program for agriculture of US\$ 670 million. The largest single allocation—36 percent—was to finance projects in the peasant farming sector, including expansion of MPP activities and new projects in land improvement, soil conservation and settlement. An additional 27 percent was allocated to infrastructural improvements (i.e., rural roads) and supporting services in planning, research, seed multiplication, training, marketing and storage, land survey, registration, mapping and land-use inventory.

The MPP program now came to be regarded as the major vehicle for promoting not only employment and equity objectives but also growth objectives in the agricultural sector. Also, alleviation of constraints to its rate of projected expansion (10 new MPP areas/year) and measures to foster its effectiveness were given priority in the indicative investment program. For the IBRD—the major donor in Ethiopia, which

heretofore had mainly underwritten projects to assist large commercial farms in Ethiopia—the report represented an official shift in IBRD's assistance strategy.

The second event was the publication in December 1972 of the Draft Strategy Outline for the Fourth Five-Year Development Plan (1974/5-1978/9) (18). The Strategy Outline, more than any previous Plan document, emphasized employment and equity objectives equally with growth. The agricultural section of the draft, based largely on the recommendation of the IBRD report, also viewed MPP expansion and land settlement as major measures for achieving these objectives. However, the implications of this strategy for the performance of MPP, particularly on its contribution to required cereal production increases, were staggering. For example, according to the author's own estimates, about 45 percent of the total increase in cereal consumption requirements—projected to grow by 3.7 percent per year over the plan period—would have to be contributed by MPP activities and land settlement projects. This represented quite an undertaking, even under the best of circumstances where requisite necessary conditions obtain (e.g., tenancy legislation, favorable factor product price relations, etc.).

The Strategy Outline, drafted by the Ministry of Economic Planning, was frequently criticized by the Ministry of Agriculture¹⁴ for expecting MPP to do all things. In addition to its projected impact on growth, employment and equity, MPP also came to be regarded as the major vehicle

¹⁴See (17).

for promoting decentralized approaches to integrated rural development which would actively engage "the people themselves in planning and implementing a significant part of the program" (18, p. 12).

4. On the Sufficient Conditions

For several reasons both development planners and donor agencies were moving along a path which approximated the ideal described in Chapter II. The primary moving force was evidence that small-scale production units were efficient; that the incremental on-farm costs per unit of output of improved inputs and technology were significantly lower on these units than on large scale units; that a technological package existed, and could be profitable to small farmers; and that organizational means had been found to distribute the package and to market resulting surpluses as efficiently as possible.

However, MPP's rate of expansion, its effectiveness and its ability to achieve objectives were constrained by the same factors which militated against its becoming an effective vehicle for initiating more desirable small farmer project structures and processes at that time. The factors were: first, decision-makers did not support it with requisite legislation in land and tenancy reform; second, the preconditions for decentralization did not obtain either in Addis Ababa or at local levels, especially not in individual tenure areas.¹⁵ This is because the

¹⁵ It is for this reason that the first model awraja chosen under the awraja self-government program was initiated in August 1973 in Tigre Province, a communal rather than an individual land tenure area.

landlords and ballabats (local feudal chiefs) not only would have fought against broad-based participation in decision-making, planning and project implementation, but would also have attempted to shift some of the financial burden of development onto the tenants; third, and possibly for the reasons stated above, the initiative for designing and implementing development approaches could only come from donor agencies and not from small farmers and/or their local organizations.

The initiative could not come "from below," nor was there a mechanism by which local groups could contribute to project costs. Therefore, MPP's absorptive capacity had to be determined primarily by the rate at which the central government and donor agencies could provide resources rather than by the rate at which local communities in MPP areas could mobilize their own resources. Thus the rate of MPP expansion was constrained by the number of well trained, experienced supervisory and middle level personnel, particularly extension agents, willing to live and work in outlying rural areas.

MPP's absorptive capacity was determined also by the degree to which other institutions and agencies could effectively coordinate with EPID at working levels to provide requisite supporting services and economic infrastructure in areas covered by MPP activities. Other institutions and agencies were, for example, the Ministry of Community Development (needed to promote, register and regulate cooperatives), the Ethiopian Grain Corporation (needed to assist in the provision of marketing services), and the Ministry of Public Works (needed to organize the

construction of feeder roads).¹⁶ Unfortunately, in Ethiopia as in most countries where much of the central bureaucracy is not accountable to the people it serves, this coordination did not obtain.

One may question here the appropriate role of donor agencies under such limiting conditions. For example, should they have pushed more forcefully for land reform and decentralization? From my vantage point it is difficult to see how they could have done more in bringing about the necessary and sufficient conditions for planning and executing small farmer projects. In any case, by mid-1973, internal forces were at work which turned the tide of events.

C. ON THE MANNER IN WHICH SMALL FARMER PROJECTS WERE PLANNED

1. Important Features and Constraints to Project Planning in Ethiopia

During the time that I was in Ethiopia, from May 1972 until June 1974, only four new projects were identified and prepared in agricultural subsectors for which the Ministry of Agriculture had direct responsibility.¹⁷ These new projects were: a settlement project in the Shire lowlands of Tigre Province, a national grain marketing project, a national pluse promotion project, and a land improvement project (also

¹⁶It was estimated that MPP areas would saturate the existing road network (only 6,000 miles of roads were passable year round) in 1978.

¹⁷Excluded were livestock, coffee and other export and industrial crops which came under the authority of specialized boards and agencies.

in Tigre Province). I was responsible for the preparation of the last two projects, which were to be supported and financed by USAID and IBRD, respectively. Of the four projects, only the settlement and pulse projects were implemented before the army took power in September 1974.

The slow rate and ad hoc manner in which agricultural development projects were identified and prepared was regarded by IBRD in its Agricultural Sector Survey as one of the most important constraints to increasing public sector investments in agriculture. However, there were several reasons which explained the slowness as well as the ad hoc manner in which agricultural projects were identified and prepared for donor funding.

First, as explained in Section 2 above, the implementation of the MPP program had already taxed the absorptive capacity in agriculture, particularly its high and middle level manpower resources.

Second, the apparent shift to a small farmer development strategy, the constraints of land tenure, and the lack of clear cut policy guidelines from the power structure were not conducive for anyone in the civil service to embark on a new course of action. Such a course could be taken only if policies and programs favored decentralization and greater private sector participation in the distribution of agricultural inputs and services.

Third, with regard to the ad hoc manner in which projects came forward, it should be said that no comprehensive inventory or studies of the type which would enable a systematic program of project identification had ever been undertaken in Ethiopia, or would ever be

undertaken by development planners in the foreseeable future. The major reason for this can be explained as follows:

The Central Statistics Office had conducted the first round of a Rural Sample Survey during the 1964-67 period. A second round had been conducted in 1968-69, but no processed results had been published during the author's tour. Unfortunately, the first round of the Survey was almost totally inadequate as an indicator for the selection of projects or project areas. It covered only population and a few agricultural characteristics of the households. Further, scant information existed on the distribution of rainfall and on its reliability, and there was nothing on intensity of fall and timing. Systematic information on soils was even cruder. Virtually no mapping existed as a basis of a comprehensive inventory, and the aerial photography required as a base for such mapping had become obsolete.

The only information useful to development planners were data supplied by the FAO/FFHC Fertilizer Program. This information was invaluable in selecting MPP sites, but provided few facts about the vast areas away from extension posts along major roads.

Under the circumstances, project identification could not be as systematic as desired by donor agencies. Under these circumstances also, project identification proceeded on an ad hoc basis, where project planners utilized information from a variety of unrelated sources. They frequently relied on observation of knowledgeable observers, and above all, on information gleaned first hand from short field visits.

Therefore, since there was no satisfactory formula for choosing areas for project development, the choice of type of project and project area was influenced primarily by the way in which information was obtained. As many things in LDCs, this was irregular, uneven, and gradual. Consequently, selection of projects and project areas was not determined by development planners and project designers in the context of a framework and certainly not as the result of directives from decision-makers (whose commitment to development was, at best, sporadic). Rather, projects were usually "given" to planners on the basis that they somehow were consistent with specific constraints or potentials identified in plan documents or in IBRD, FAO or other donor-sponsored agricultural sector assessments; on the basis that some knowledge already existed about them; and, above all, on a hope that somehow they could be made to work.

A fourth reason explaining the rate and manner in which agricultural sector development projects were initiated, prepared, and implemented in the public sector was the pace at which donor agencies were able to organize external resources in project identification, formulation and implementation.

However, just as the lack of a steady pipeline of bankable projects was a concern to donor agencies, so were Ethiopians concerned about the fact that all agricultural development projects had been identified and designed and were being formulated by donor agencies and other outsiders in Ethiopia. That this was a valid concern to Ethiopians can be illustrated by the fact that the proposed capital development budget of the Ministry

of Agriculture for the Fourth Five-Year Plan period was composed entirely of donor-supported projects and programs.¹⁸

Worse, each donor agency had its own method and format in project design and appraisal, and each had its own speed and mode of operation in carrying projects through approval stages into implementation. Consequently, a consistent format in project appraisal could not be established, nor could a uniform set of criteria be evolved to assess the payoff or workability of proposed projects. For the purpose of development planning and budgeting, this situation led to extreme difficulties in assessing the absolute and relative impact of projects on national targets and in deciding how budgetary resources should be allocated to projects so as to have maximum impact on national production and/or employment.

For example, during one budget session the author attended, the representative of the Awash Valley Authority complained bitterly about arbitrary cuts in his program on the grounds that MPP, financed by SIDA and whose budget was increased, did not have to abide by the same rules in project formulation as did AVA, which was financed by IBRD. The reason that MPP could project a higher economic rate of return than AVA was not because of differential shadow pricing. It was because development planners and project designers were willing to make more heroic assumptions about the conditions under which MPP's incremental benefits could be realized.

¹⁸ See (17).

2. Reasons Underlying the Identification of the Land Improvement and Pulse Projects

In the setting described above, the land improvement project and the pulse promotion program were identified. A short history of how they came into being may be useful.

a. The land improvement project. Land improvement was regarded as the other side of the coin to settlement, particularly in communal tenure areas of the eroded Northern Highlands. Just as tenant eviction was regarded as a major cause of out-migration from the individual tenure areas of the Southern Highlands, so the reduction in the carrying capacity of land was regarded as a major cause of out-migration from the famine-prone Northern Highlands. The Northern Highlands were characterized by irregular and low annual rainfalls, high population densities, and intensive land use on small and fragmented holdings leading to cropping patterns which barely provided subsistence.

These factors combined to reduce the supply of cultivable land, whose soils were being rapidly depleted of their chemical and physical properties. These factors also combined to denude natural vegetation and forests, which in many instances led to extreme forms of gulley and sheet erosion. The IBRD Agricultural Sector Survey and the Ministry of Agriculture gave priority to programs that would experiment with low-cost approaches to promote soil conservation in communal tenure areas. Without appropriate soil conservation measures, the ecological conditions were expected to deteriorate even more rapidly as a result of continued pressures on land use from population growth in the face

of declining carrying capacity. This, under both the family and village system of communal tenure, would lead to accelerated fragmentation and size reductions of holdings, leading to reduced fallow and increased cultivation on steeper slopes, and to even higher rates of erosion.

The project design process was initiated in December 1972 and, with assistance from IBRD technical staff, completed in June 1974. It culminated in a report entitled "Proposal of the Pilot Phase in Tigre Province of the Northern Highland Land Improvement (and Rehabilitation) Program" (13). It was to be implemented by EPID of the Ministry of Agriculture working through the MPP framework. However, by that time the famine had broken out in Wello Province, just south of Tigre, the IDA¹⁹ funds requested for rehabilitation in Tigre found more urgent use for relief in Wello Province.

b. The pulse promotion program. The pulse promotion project was first identified late in 1969 by a special Inter-Ministerial Steering Committee organized by the Planning Commission Office. A reconnaissance mission was organized in early 1970 but was not able to evolve specific recommendations for follow-up work. Work was delayed until January 1971 when a large-scale project preparation effort was undertaken with AID grant funds by an eleven-man consultant team from Experience, Inc., in Minneapolis. This effort culminated in a report, entitled "The Feasibility of Producing Pulse Crops for Export Markets," May 1972 (5).

¹⁹ International Development Association—the soft loan window of IBRD.

The team was able to recommend a ten-year investment program which would have a total cost of US\$ 17 million and would increase total Ethiopian haricot bean production tenfold in five major production areas. A special Pulse Development Authority was recommended to administer the project. The project was to have a five-year development phase. It would provide employment for nine American technicians, at a cost of US\$ 2.1 million, and 40 Ethiopian counterpart personnel of all skill levels, at a cost of US\$ 1 million. It had marketing, storage and processing components to be implemented by the Ethiopian Grain Corporation (an autonomous agency responsible to the Ministry of Agriculture); a seed multiplication component; activities in research and extensions; a commodity loan program to guarantee minimum farm gate prices; a credit component for providing working capital to private traders; and annual production credit and some medium-term credit to large-scale mechanized farmers who would thus be encouraged to participate in the program. The internal rate of return was calculated to be well over 50 percent.

In January 1973 the project proposal was reviewed by an Inter-Ministerial Committee. This committee included representatives of the Ethiopian Grain Board, an autonomous agency which undertakes activities similar to the Ethiopian Grain Corporation but which is responsible to the Ministry of Commerce and Trade. These representatives put forward the argument that through their own ongoing programs they anticipated a without-project increase in haricot production similar to the with-project projections made by Experience, Inc.

Also, members of EPID and the Ministry of Economic Planning pointed out that in all of the proposed project areas small farmers accounted

for significant proportions of land cultivated under haricots and other pulses. They indicated that the components of the project would have to be radically restructured to enable these farmers to participate in the project.

The project proposal was shelved until June 1973, when it was reworked to fit into the MPP framework. This task was accomplished by December 1973. The project (16) was approved by an Inter-Ministerial Committee in February 1974 and by USAID/Washington in June 1974.²⁰

It should be noted that both projects were moved from identification to detailed planning and design because they could be implemented by EPID of the Ministry of Agriculture and accommodated under the MPP framework. Donors and development planners regarded MPP as the only effective implementing mechanism for small farmer projects. Also, donors and development planners regarded MPP as the major vehicle for decentralizing the functions of the Ministry of Agriculture at levels which would, over time, enable greater participation by small farmers and their communities in planning and executing a broader range of development activities. Also, EPID which was developing a national agricultural input delivery and service system, had at that time some personnel slack at high levels and some administrative excess capacity to take on several new activities without reducing the effectiveness of

²⁰ However, when the author revisited Ethiopia in January 1976, USAID was still trying to find technical staff to assist MPP in implementing several components of the program.

its ongoing programs. There are several additional advantages to working through established or ongoing programs:

The first is that specialized incremental activities under the new project are grafted onto existing work programs and budgets. This minimizes the opportunity-cost in deciding whether to go on with the project after the development phase when technical assistance will inevitably be withdrawn.

A second important advantage derives if ongoing projects have established information systems and procedures for assessing project impact and for assessing the efficiency of implementation.

A third advantage derives if ongoing projects have been designed on the basis of attempting to generate an economic payoff, even though, as in Ethiopia, the tax structure was weak and did not allow for the direct financial recovery of incremental economic benefits.

A fourth advantage of designing projects for implementation as integral parts of ongoing programs is that the people who are expected to take part in implementing the new activity are also involved in its planning. Their past experience in implementation is also a valuable input to planning additional activities.

Therefore both the land improvement and pulse projects were both designed with the foreknowledge they could be made to work. It remained to show the donor agencies that these projects had an economic payoff.

In the design of the land improvement project, this was done by analyzing the conditions under which the project would generate requisite payoffs and by satisfying decision-makers, development planners and donor

agencies of the reasonableness of the assumptions made under which these conditions could most realistically be expected to obtain.

The design of the pulse project was far less rigorous. The cost-benefit framework was applied in restricted, narrow terms; the critical assumptions were not highlighted and the exercise became a game of showing that the project was economic and profitable. In Stolper's (29) terms, the cost-benefit calculations were not honest.

3. Problems and Limitations in Designing the Land Improvement and Pulse Promotion Projects

a. The Tigre land improvement project. Before the project was designed, the Planning and Programming Department had decided to reduce the cost of project preparation and to gain firmer control over the project preparation processes by reducing dependence on expensive overseas consultants. The design of the land improvement project was, therefore, also regarded as an experiment in involving locally available expertise as much as practicable and in using overseas consultants sparingly and only for special technical tasks.

Before the design team visited Tigre, it was decided to promote soil conservation measures in the context of improving land use within an entire watershed. The team assumed that this could be done by the following: (i) promoting MPP activities in the lower and upper reaches of the watershed, (ii) establishing on-farm demonstrations of soil moisture retention and conservation techniques such as ridging and mulching, (iii) organizing community conservation programs in afforestation,

terracing, construction of storm drains, check dams and stop washes, wind erosion control and water spreading over communal pastures; (iv) developing surface water sources; (v) testing various labor intensive water extraction systems; (vi) implementing nonformal education programs to promote cooperatives and self-help groups for organizing and financing infrastructural investments in conservations, roads, etc.; (vii) undertaking (vii) undertaking research and trials on irrigated crops, fodder crops, tree species and short-maturing cereal varieties.

It was recognized by the design team that a learning-by-doing approach was required. This meant that the project in its early phases would provide a minimum number of inputs required to test out the numerous assumptions and conditions under which benefits of a larger project might be realized. The design team already had evidence of the organizational aspects and pay off of terracing and afforestation (there was an extreme shortage of firewood throughout Tigre) and of small-scale irrigation schemes undertaken under USAID Food for Peace projects in Tigre and Eritrea. Also, FAO/FFHC trials throughout Tigre's sandy soils had shown encouraging results.

The question that the design team posed was whether it would be possible to induce farmers cultivating the upper reaches of the watershed to construct terraces and, where necessary, to relocate some of their holdings to the lower reaches of the watershed. It was concluded that, even if such relocation was socially feasible, the project must in its initial phase focus on increasing the productivity of land in the lower reaches of the watershed and on increasing the cultivable area, possibly through irrigation.

Before the design team visited Tigre to identify and survey the watershed and further specify project components, a series of initial cost-benefit calculations were made on the basis of alternative assumptions regarding the number of farmers, cropping patterns, present and possible incremental yields, increases in area cultivated and production under irrigation for a typical watershed. This was the beginning of an information system which would be revised and expanded as more data became available from follow-on surveys. The information system was used to guide the team in identifying important data gaps and assumptions crucial to the determination of the potential economic payoff of the project.

For example, the watershed was chosen partly on technical criteria, and partly on criteria evolved from the initial cost-benefit calculations. The design team had estimated that a minimum of 8,000 holdings cultivating an average of at least two hectares must be reached to support the cost of the components which were required to obtain optimum results from the experimental activity. Consequently, the watershed had to have not only the appropriate physical characteristics, with conservation problems common to much of Tigre Province, but also had to have a sufficient number of holdings and sufficient agronomic potential so that 8,000 holdings could be reached which could double production over a ten-year period.

After a suitable watershed was identified, field surveys commenced to obtain baseline information on the watershed's social, demographic and economic characteristics. At the same time, a small two-hectare

experimental station was established to test improved dryland farming and soil moisture retention techniques. With the results of these surveys, the cost-benefit calculations were updated and used inter alia to determine the economic feasibility of a test well-drilling program recommended by IBRD technical staff. The cost of the drilling program was compared to the discounted net present worth projected to be derived from irrigation. The present value of net discounted benefits did not show a surplus sufficient to cover drilling costs with margin to cover unforeseen events at least not under assumptions with which the design team felt comfortable. Consequently, drilling was delayed until further information on the benefits of irrigation from underground water sources became available.

The point here, and which the design team learned very quickly, was that without the cost-benefit calculations and the guidelines it established, the components of the program could have multiplied too rapidly relative to the value of the incremental benefits that could be expected under the best of circumstances. With these calculations, however, the team was able to assess the importance of each of the components relative to each other, and relative to its contribution to the overall economic payoff of the entire project.

These calculations were important since the design team was, throughout the preparation phase, under pressure to increase the number of components. This pressure came not only from short-term consultants (one of whom recommended a tourist component since the area was well stocked with rock-hewn churches), but also from local leaders and elders

in the project area. These leaders had very little previous contact with the national government. The contact they did have was restricted mostly to unwelcome visits by tax assessors from the Ministry of Finance. When the design team had communicated the objectives of its mission, these leaders quickly pressed for additional components in health and social services. This problem is common to many projects that are designed from the top down for farmers to achieve objectives which, though regarded as important from a national point of view may for a variety of reasons not be viewed with the same urgency at local levels. The problem is almost a dilemma. Without adding such additional components as health, improved nutrition, domestic water supply systems and education, there may not be sufficient participation and interest in the project. Therefore, requisite benefits will not be generated. However, it is likely that, even with these additional components, there may not be any participation either, but rather an expectation that Government will continue to provide expensive services.

It is difficult to assess how or whether the design team should have come to terms with the problem during project preparation. The team had some evidence that farmers in the project area were interested in adopting MPP technologies; that these farmers had, even in their own life times, observed and felt the cumulative effects of sheet and gully erosion; that they felt a shortage of firewood; and they were willing to experiment with new practices and techniques to counter these problems whether or not additional services were provided under the project. On the basis of the cost-benefit calculations, the team decided that

additional components could not be carried by the project and that, if these components were in fact preconditions for participation, the project could not be implemented. This was carefully communicated to local leaders, who slowly came to appreciate the need for the project as an experimental activity whose components and activities could be expanded if the initial income-generating activities were successful.

It can be seen, therefore, that the land improvement project was designed to test specific development hypotheses in soil conservation and that the cost-benefit framework became a convenient tool in formulating and expressing these hypotheses. These formulations had to do with identifying the conditions under which projected benefits might be realized and with identifying the minimum components necessary to generate benefits. In a world of limited knowledge, uncertainty and risk, the project designer cannot be expected to do much more. But he must steer the project implementor on a path that is manageable and leave him with guidelines which he and the evaluator can use to judge whether projected benefits are being realized in the course of implementation. This was understood by the design team, who were able to evolve a complex project by learning-by-doing and by using the cost-benefit framework to identify important assumptions and conditions under which a payoff could be realized. The design team did not use the cost-benefit framework as a device for generating hypothetical benefits to show that the project had a "decent" rate of return. It felt that the decision to go ahead or not to go ahead with the project should be based on the assumptions made, and not on a "contrived" rate of return.

b. The pulse promotion project. The purpose of this section is to describe the "tricks of the trade" that frequently underlie the abuses of cost-benefit analysis.

This situation came about after USAID and the Ministry of Economic Planning requested the Division to reformulate the pulse project so that it could fit into the MPP framework and focus on small-scale farmers. The conventional wisdom did not question the desirability of the project. Pulses, particularly haricots, were a valuable export crop enjoying stable market outlets in Europe. Many large-scale farmers in or adjacent to MPP areas where agro-ecological conditions were favorable, were rapidly expanding their acreages on their own. Pulses fit well into crop rotation patterns and required less fertilizer than cereal crops. Also, in the famine areas, chick peas, which did well on marginal soils, were an important subsistence crop. And the introduction of other pulses would improve nutrition. There was, therefore, considerable enthusiasm for the project, and officials were eager to push on with it as rapidly as possible.

However, USAID's grant funds were limited, so it was proposed that the project be funded with USAID's Agricultural Sector Loan. This required a detailed economic analysis showing that the project had, relative to the opportunity-cost of capital in Ethiopia, a reasonable rate of return. The Ministry was charged with undertaking the task as quickly as possible so that funds could be allocated in the current fiscal year. This could only be done by keeping field trips and surveys to a minimum and by utilizing secondary data where they existed and by

making "guesstimates." The team was under considerable pressure to show that the project was feasible.

This was done as follows: First, the components were costed out. There were extension, research (including seed multiplication), marketing and processing, coordination and evaluation. The project also had two revolving funds to provide working capital for purchasing stations and annual production credit to farmers. Having estimated all costs, except the cost of the revolving funds, the design team estimated the incremental tonnage, valued at purchasing-gate prices, necessary to cover project costs, incremental marketing and on-farm costs, as well as an amount sufficient to show an internal rate of return of 20 percent per year. The team then developed farm budgets for a typical tenant and owner operated small farms, and derived the incremental yields per hectare necessary to generate incremental value/cost ratios equal to 2.0 for tenants paying one-third of incremental output in rent. For each production area where project activities would be carried out, an average area cultivated under pulses was guesstimated. These were applied to the typical farm budget and to projected incremental tonnage to obtain the requisite number of farmers who had to be reached each year by the program to produce the tonnages required to sustain a 20 percent rate of return. From the farm budgets, incremental cash costs were estimated to finance the credit program for MPP farmers. With the tonnage figures for each production area, the capacity of each purchasing station was estimated, as well as working capital requirements to finance the purchasing program. All the financial costs of the program were converted

to their economic costs and an internal rate of return of 21 percent was derived for a twenty-year projection period. Appropriate sensitivity tests were run. Thus, for example, a 15 percent reduction in annual incremental gross program revenues would reduce the IRR to 11 percent, which was still above the opportunity-cost of capital in Ethiopia.

The point to be stressed here is that, although the pulse project was a desirable project, the cost-benefit framework was bastardized and exploited for the purpose of developing a reasonable IRR. It was not used as a framework to identify and test important assumptions regarding the relation between inputs and their effects. Thus, for example, one anomaly which could have been spotted by anyone studying the tables of the economic analysis, was that it required only seven extension agents to encourage 12,000 new small farmers to bring 25 percent of their land under haricot cultivation in only five years. The implied farmer/agent ratio of 1720 to 1 is, according to anyone who has had any extension experience, a total impossibility. The design team was aware of this anomaly, and took great pains not to bring it out in the project write-up. The simple fact of the matter was that under no circumstances would EPID/MPP be able to find and hire more than seven additional experienced extension agents in Ethiopia at that time.

In the process of this exercise, the cost-benefit framework could only be used partially, if at all, to guide project implementors and evaluators. Since the assumptions were not made explicit, and since no primary data existed on farm populations in the pulse production areas, it could only be hoped that an information system could be evolved for the pulse project under EPID/MPP's ongoing evaluation program.

CHAPTER IV

THE ENVIRONMENT AND MANNER IN WHICH DONOR-SUPPORTED PROJECTS WERE BROUGHT INTO BEING IN GHANA

A. INTRODUCTION

This chapter repeats the general format of the previous chapter and draws on my more recent experience in assisting the USAID Mission to Ghana in the identification and planning of two small farmer projects. However, the perspective will be changed somewhat, reflecting more the views and ways of a donor agency rather than the views of the host country government.

Relative to the stages in the evolution of the environment in which recommended small farmer project processes could be brought into being, Ghana was in the mid-1970's far behind the stages that Ethiopia had already reached in the late 1960's. In the first part of this chapter the reasons for this will be explained. Also the interactions of the major actors in shaping the environment in which small farmer projects could be planned and executed will be discussed.

The manner in which the two projects were identified will be described in the second part of this chapter. That part is divided into four sections: the first describes the manner in which the Managed Input Delivery and Services Project (MIDAS) was identified and planned; this project attempted to establish the necessary conditions for reaching small traditional farmers in Ghana. The second describes the manner in

which the District Planning and Rural Development project is being planned and the manner in which it will be carried forward in the future if it is approved in Washington. This project attempts to establish the sufficient conditions for involving small farmers in growth and development processes. The third section describes the more specific problems and limitations encountered in planning the MIDAS project. The fourth section focuses on the use of cost-benefit analysis in overcoming some of the problems in planning the MIDAS project.

B. THE ENVIRONMENT IN WHICH DONOR-SUPPORTED
PROJECTS WERE BROUGHT INTO BEING

1. Background Forces

I arrived in Ghana in October 1974, as an agricultural economic advisor to the USAID Mission to Ghana. During the 1960's the Mission had financed large-scale assistance programs in the agricultural sector in support of the strategies, programs, and projects of the Nkrumah Regime and its successor regimes—the National Liberation Council and the elected Busia Government.

In 1972, the National Redemption Council (NRC) came to power, following a massive devaluation by the Busia Government in an attempt to set the stage for liberalization of foreign exchange controls.²¹ The NRC's first action was to revalue the currency by 10 percent and to renegotiate loan repayment schedules with major creditor countries.

²¹See Leith (25).

During that time the Mission's agricultural program awaited the policy initiatives and directions which were expected after the debt rescheduling issue had been settled. Since January 1974, the Mission had been formulating an assistance approach for the agricultural sector that would be consistent with the new Congressional mandate, to be promulgated in the Foreign Assistance Act of 1974.

Under the new mandate, USAID Missions were encouraged to reduce their program-lending activities for generalized balance of payments support and to channel more assistance, preferably in combined loan and grant funded packages, to projects and programs in specific sectors that directly affected the livelihood and welfare of the poor majorities in LDC's. These sectors were agriculture and nutrition, population and health, and human development and education.

In formulating sector development strategies, USAID Missions were encouraged to define sector lending programs jointly with LDC decision-makers and development planners over a five-year programming period. A systems approach had also been favored in recognition of the complex interrelations of the many variables that typically underlie constraints on sector development, particularly as they inhibited greater participation by the poor majority in the growth process. "Integrated" approaches to rural development problems were to be given priority, especially if these approaches also recognized the role of women in development (Percy Amendment), the role of private voluntary organizations in assisting private sectors in LDC's, the role of U.S. Land Grant Colleges in assisting LDC research institutions to explore the unknown

worlds of the poor majority, and the role of Title I and II of the Foreign Assistance Acts as possible additional funding mechanisms.

At the time of my arrival, the USAID Mission had planned and brought forward to implementation only one project in agriculture. However, two studies had been completed by the Tennessee Valley Authority (28) and Mississippi State University (26), respectively. These studies examined the feasibility of AID assistance to Ghana's fertilizer and seed industries.

The existing project was a management training program for high and middle level staff of the Ministry of Agriculture. It was implemented in December 1974. The small assistance program reflected the Mission's limited relations and communications with the Ministry of Agriculture, as well as the Mission's view of the major constraints and possibilities for promoting small farmer development projects through public institutions in agriculture.

I was posted to Ghana with the specific responsibility of assessing the agricultural sector and the feasibility of a large-scale assistance program for small farmers in Ghana. This task²² was undertaken jointly with a consultant, Dr. Fred Winch from Michigan State University, who had been in Ghana for two years collecting materials for a dissertation on the rice industry in Northern Ghana.

²²See (35).

2. The Lack of a Consensus

During the course of the assessment, I learned that—unlike Ethiopia—Ghanaian policy makers and development planners doubted the practicability of increasing marketable surpluses of agricultural products from a strategy directed primarily at small-scale production units. There were many reasons for this.

First, Ghana was believed to have an abundance of cultivable land relative to its agricultural labor force, particularly in the guinea savannah and transitional zones in the North, and the coastal savannah zone in the South, which together account for about 65 percent of Ghana's total land area. It was in these ecological zones that grain crops such as rice, maize, ground-nuts and industrial crops such as sugar, cotton, tobacco and kenaf—all important import substitutes—have their greatest potential.

Second, although small-scale holdings (cultivating 4.5 hectares or less) accounted for about 85 percent of the total number of holdings, these holdings accounted for only 32 percent of the total area cultivated. It was believed that these small holdings produced much of the marketed traditional foodstuffs (i.e., yeams, cassava, cocoyams, plantains, sorghum and millet). But they were not believed to account for large portions of the total land area cultivated under crops which the Ministry of Agriculture had promoted during the previous ten to fifteen years under its import substitution programs: rice maize, oil plum, rubber, sugar, vegetable oils, bast fibre, and irrigated cotton.

Third, small-scale production units in the humid tropics were known to cultivate their fields in extremely complex intercrop situations within equally complex crop and land rotation systems. These holdings applied a few meagre capital resources (mostly hoes, cutlasses and axes) with family labor to soils which became rapidly exhausted if farmed intensively. Although these holdings were regarded as efficient production units, it was thought that they produced at low levels of output per unit of labor or per unit of land. Also, it was believed that small farmers were risk averters, preferring to base their decisions on producing the minimum required for their household's subsistence.

It is likely that these perceptions caused researchers, development planners and extension agents to share the view that it would be extremely difficult, costly and time-consuming to raise the productivity of small farm systems and increase marketable surpluses from the traditional sector fast enough to meet Ghana's food, industrial and trade needs.

This feeling was certainly dominant during the Nkrumah regime (1957-1966), when policy makers viewed small traditional farms not only as uneconomic production units but also as antiquated social systems. Therefore, during the 1960's an attempt was made to expand agricultural production by way of government tractor-hire services and public production units (e.g., State Farms and Corporations). During that time the extension service of the Ministry of Agriculture was disbanded, and agents were employed on state-run production units and in marketing corporations. The approach required large amounts of domestic capital

and foreign exchange but unfortunately added little to increasing agricultural production.

The drastic failure of this approach is well known. It contributed to massive reductions in foreign exchange reserves and a balance of payments crisis. This led to import controls which in turn prevented small farmers from obtaining essential imported inputs (e.g., cutlasses, hoes, and insecticides for spraying cocoa).

The effects of the Nkrumah policies were still in evidence in the early 1970's, leading to another reason why policy makers and development planners have been uncertain about adopting a small farmer development strategy. This is the shift in the composition of agricultural employment, particularly during the 1960-70 Census period, and its effect on the agricultural work force. The following figures are illustrative:²³

Total Employed in Agriculture	1960		1970		Absolute Change	Annual Growth Rate
	(000's)	%	(000's)	%		
Males	1,002.3	63.4	1,018.1	56.8	15.8	.16
Females	578.9	36.6	772.7	43.2	193.8	2.93
Total	1,581.2	100.0	1,790.8	100.0	209.6	1.25

The figures shows that female employment in agriculture during the 1960-70 Census period increased at a much higher rate than male employment. In fact, the increase in the number of women employed in agriculture accounted for 92.5 percent of the total increase of all persons employed during that period. Whether the data are accurate is not the point in

²³ See (6).

question; the point is that they underpin the conventional wisdom that traditional agriculture on relatively small labor-intensive holdings is not only a difficult and arduous occupation even under the best of circumstances, but also that it is a low-status occupation. It is believed that those who have mobility through education or otherwise will leave the traditional farm sector and go to urban areas. There they will invest considerable time in under or unemployment to realize the expectation of wage employment. In Ghanaian society, males appear to have greater mobility than females. This is consistent with the facts that in 1960 females accounted for 55 percent of the total number of persons aged 6 years and over who have never attended school and that in 1970 they accounted for 59 percent. The result was that, in 1970, 60 percent of the labor force in agriculture—defined as persons between the ages of 16 and 49—was female. If these trends persisted, a static, aging, farm labor force, increasingly dominated by females, would have had to feed an expanding market-dependent population.

It is possibly for this reason that policy makers and development planners started, in early 1972 when the National Redemption Council came to power, a national campaign called "Operation Feed Yourself." The objective of this campaign was not only to increase national agricultural production but also to raise the status of agriculture as an occupation. This was to be achieved through a strategy of acreage expansion and by subsidizing large-scale private farmers to encourage their participation in specific commodity input substitution programs in rice, maize, livestock, sugar cane, oil palm and cotton. These programs were supported and funded by the IBRD and the West German government.

From the above discussion it can be seen that there was not a consensus in Ghana among policy makers and development planners on the desirability of a small farmer development strategy. Without such a consensus there was little effort by Ghanaians to establish the necessary and sufficient conditions for planning and executing small farmer projects. However, as will be discussed below, requisite efforts were being made by donor agencies.

3. The Views of Donor Agencies

The most important issues that set donor agencies against policy makers and development planners in Ghana had to do with the income distribution, employment and foreign exchange implications of Ghana's agricultural strategy. A related issue concerned the manner in which the strategy was implemented and the degree to which it effectively mobilized private sector resources for maximum impact on growth objectives.

There was little doubt that subsidized agricultural inputs²⁴ were distributed primarily to large-scale farmers (particularly to mechanized rice and cotton farmers in the North) and that small farmers did not have access to these improved inputs. This was not because Government intended to restrict the use of inputs to large private farmers. Rather it was because improved inputs, although financially cheap relative to

²⁴Fertilizers, for example, were sold in 1975 to farmers by the Ministry of Agriculture at a price equivalent to 15 percent of CIF values.

to their economic cost, were extremely scarce relative to the demand for them at subsidized prices.

These inputs were distributed primarily to larger farmers, not only because these were the more influential farmers, but also because inherent in the agricultural strategy was the notion that the costs of distributing improved inputs, of using these inputs on-farm, and of marketing the resulting surpluses were much lower when they were applied on large-scale rather than on small-scale production units.

This view may have been held because input distribution, marketing, and agricultural processing were organized and operated by public institutions which were able to achieve financial and organizational economies only through the scale economies which large production units made possible. In the circumstances, the evidence, supplied large by donors, that large-scale farmers were inefficient, that small-scale production units were relatively more efficient on-farm, and that on-farm incremental value/cost ratios of improved inputs were relatively higher for small-scale production units was only partial and limited evidence in support of a small farmer development strategy. It was certainly not sufficient to persuade policy makers and development planners in Ghana, who were not only concerned about rapid increases in marketable surpluses but also about transforming the scale and structure of traditional agriculture.

Unlike Ethiopia, where the hope of the small farmer was to become an owner-operator and to increase yields and incomes on acreage that could not be expanded, the hope of the small farmer in Ghana was either

to produce crops suitable to his scale which were promoted by the Ministry of Agriculture or to become a large farmer. Policy makers and development planners expected donor agencies to assist in financing the foreign exchange costs of this strategy, with repeated requests for machinery and equipment for mechanization and large-scale irrigation. In view of past checkered experiences with machinery imports during the Nkrumah period, donor agencies were hesitant to supply these inputs. This was true particularly for USAID, which was guided by its Congressional mandate to assist the poor majority.

C. THE MANNER IN WHICH DONOR-SUPPORTED SMALL FARMER PROJECTS WERE IDENTIFIED AND PLANNED

1. Establishing the Necessary Conditions

In the face of this standoff, the author was requested to help the USAID Mission develop an assistance program for Ghana's small farmers which would be acceptable to Ghanaian policy makers and development planners. In spite of the Ministry of Agriculture's policies and its control over input distribution systems, several encouraging developments had been initiated by other semi-autonomous development agencies.

First, the Agricultural Development Bank, an agency under the Bank of Ghana, had during the previous seven years been successful with commodity group credit programs for more progressive small farmers. The objective of these programs was to extend improved technological packages to groups of small farmers who agreed to cultivate a minimum acreage in pure stands under those crops which the Ministry of Agriculture was

promoting. These technological packages had also been developed by an FAO/FFHC fertilizer demonstration program²⁵ for a variety of crops, including maize. The group credit scheme was first extended to small farmers cultivating maize and rice, for which technological packages already existed.

To qualify, a farmer had to cultivate a minimum of two acres of rice or maize and be a member in good standing of his particular group. A block loan would then be given to the group leader, who would distribute chits to group members. With these chits farmers could obtain fertilizer and improved seeds, either from the Ministry of Agriculture or from other participating agencies such as the Grain Development Board. When farmers harvested the crop, they would be obliged to sell their crops to the agency from which they received their improved inputs at a guaranteed minimum price less the cost of the inputs.

Other group schemes were started in the late 1960's for crops which the Ministry of Agriculture promoted but for which no technological package existed.²⁶ Under these schemes—groundnuts are an example—farmers had to cultivate a minimum of six acres under pure stand to qualify. Some of the credit was extended in kind, but mostly in cash, to finance incremental labor costs associated with land expansion. Farmers were also encouraged to sell their crops to public marketing agencies and publicly owned processing industries.

²⁵See (30).

²⁶See (7).

In justifying an assistance program that would establish the necessary conditions for reaching smaller traditional farms, it was important that the Agricultural Development Bank (ADB) had some records which indicated that loan repayment rates under the group schemes were significantly higher than rates of individual, large farmers. Although the reasons for this have not been fully investigated or understood, it is likely that group pressures on individual members were an explanatory factor.

In any case, in formulating a comprehensive agricultural input delivery and service program, these group credit schemes were taken as the core around which all other components of the USAID supported program were identified and designed. There was evidence that small farmers needed credit, particularly when credit was supplied simultaneously with other production inputs. There was evidence also that group credit programs enabled small farmers to increase their bargaining power and to take on the desired scale characteristics which would make them more accessible to public, and eventually to private input distributors and product marketing agencies or private traders.

It was for these reasons that the USAID Mission saw an expanded group credit scheme as the key component and as an integrating mechanism for a larger small farmer assistance program. Exploratory discussions were held with officials from the Agricultural Development Bank. It appeared that they were willing to implement new and simplified procedures to expand and streamline their credit operations to smaller, more traditional farms; that they were interested in an in-house

training program to train staff to implement these new procedures; and that they were willing to relax their restrictions so that farmers cultivating smaller acreages in multi-crop situations could become eligible for both annual production credits and medium term credits with which to finance permanent improvements such as on-farm storage. With agreements on these points, other components of an integrated assistance program fell into place.

Advance procurement of bulk fertilizer raw materials, their blending and bagging at Tema port and their more effective and speedy distribution with increased participation by the private sector were essential if group farmers were to be given enough incentive and opportunities to use credit productively. Assistance to the seed multiplication effort of the Ministry of Agriculture—lack of hybrids prevented the formation of a seed company—to produce more varieties of high quality seeds was also essential. Demonstrations on farmers' fields were necessary to encourage groups to adopt improved inputs and practices for the crops which the Ministry promoted. Special small farm equipment and tools and raw material imports for domestic production of inputs at the intermediate technology level were required, and were also to be supplied under the program. A multi-disciplinary small farm systems research component was designed, focusing on action research on farmers' fields. This would link the basic research community more closely to extension agents, and both more closely to small farmers. Finally, a marketing component was designed to provide credit to private traders and to encourage them to expand their activities closer to farm gates and in outlying rural areas.

The resulting proposed program, called the Managed Input Delivery and Agricultural Services (MIDAS) project,²⁷ had other interesting features. First, it was a combined grant and loan package where all commodity imports were loan funded. Second, these commodities were to be sold through the private sector, stimulating their participation and also generating local currency. Third, these local currency generations were to be channeled to the Agricultural Development Bank through the Bank of Ghana. This financed ADB's annual increases in working capital required to expand group-lending operations and also assured that the increase in money supply was in tandem with the increase in the quantity of goods supplied under the program. Finally, the program was to be a mechanism to encourage greater coordination, at working levels, amongst a variety of institutions serving the agricultural sector in Ghana—the Ministry of Agriculture, the Agriculture Development Bank, the Council for Scientific and Industrial Research, the Bank of Ghana, and the newly established Ghana Fertilizer Company and its proposed network of private fertilizer distributors.

The project was prepared over a nine-month period and submitted to Washington for approval in December 1975. It was approved there March 31, 1976, in time for the U.S. Secretary of State to present the project to the Government of Ghana during his African tour. For various reasons his trip to Ghana was called off by the Ghanaians at the eleventh hour. As of August 1976, further negotiations were still suspended, pending new diplomatic initiatives.

²⁷See (33).

2. Establishing the Sufficient Conditions

During the time that the MIDAS project was formulated and designed, USAID officials became aware of the limited knowledge of traditional small farm systems in Ghana, of the fact that small farmers were not a homogeneous group, and of the magnitude of their off-farm constraints in effectively participating in growth processes.

The MIDAS program contained two components that partially addressed these constraints—the small farm systems research and marketing components which were to be implemented on an experimental basis in a specific geographical area. However, it was unrealistic to expect the MIDAS project to address the myriad constraints which small farmers face in many of the ecological zones of Ghana.

Consequently, it was felt by USAID that a complementary project to MIDAS was necessary and that such a project should take the form of an integrated agricultural development project in one region or preferably one district of Ghana. The program was to be integrated in the sense that its components would include a wide range of activities which would sequentially address both on-farm and off-farm constraints to increasing marketable surpluses and incomes on small holdings.

On the basis of a review of past experiences in implementing such integrated approaches in Africa, the USAID Mission was aware that such projects tended to become very expensive relative to the number of participants reached and the incremental benefits (economic and financial) they generate. Also, the Mission was aware of several instances where such approaches had been undertaken on a low-cost,

experimental basis. However, frequently these approaches tended to remain in their pilot or development phases while their costs and burden on scarce LDC financial and manpower resources mounted.

The central question, therefore, was to identify the key missing components or elements that prevented integrated projects which were intended to be low-cost and replicable from actually becoming high-cost and unreplicable. At that time the Mission benefitted greatly from an evaluation of rural development project in many LDC's made by Development Alternatives, Inc. (3). This study indicated that the missing elements may be in the area of participation and involvement of small farmers and/or their organizations in project decision-making and financing.

The question then centered around the identification of project activities whose execution would stimulate maximum involvement in decision-making and resource contribution by small farmers, their families, and communities in Ghana. Would these be income-generating activities on and/or off the farm, the promotion of health and social services, or the provision of economic infrastructure? Or, would it be some combination of these? In that case, which would be the optimum sequence of their implementation?

The upshot of these questions was that they could not be fully answered until they are tested and verified in the field under actual conditions. This the USAID Mission was willing to do if a mechanism could be found which would enable small farmers to have a voice in decision-making and whose leadership small farmers could trust and/or hold accountable for their actions. The Mission held this view because

these actions had to do with the effective and equitable use and allocation of resources which small farmers themselves were expected to provide as participants in local development activities.

To a degree these questions appeared to have an answer when the Government of Ghana issued two important documents in 1975. The implementation of their recommendations would herald a radical shift in Ghana's agricultural and rural development strategy.

The first document²⁸ was the publication of the draft guidelines of a proposed five-year development plan covering the period 1976-80, in which the Ghana Government emphasized a regional planning and rural development strategy.

The second document²⁹ was a publication by the Ministry of Local Government which issued guidelines for the establishment of a new local government set up. In the new local government structure, authority and responsibility for planning and implementation of development projects would be devolved from national Ministries in Accra to District Councils.

These councils were to become the basic units of administration and the sole rating authorities. Each council would be composed of traditional leaders, ward councilors—who until the return to civilian rule would be appointed—and district heads of national Ministries. Each council would have a planning committee responsible for determining district development priorities, designing and implementing development projects and preparing coordinated district development budgets. The

²⁸ (See (8)).

²⁹ See (9).

district plans, projects and development budgets were to be screened by regional councils before they would be approved and partially funded by the Ministry of Economic Planning. Funding would be done on a matching basis in some ratio to the revenues that districts raised from their own rates, levies, and taxes.

These events were regarded by the USAID Mission as evidence that the Government of Ghana was willing to remove the limitations to planning and executing more ideal small farmer project processes. Also, these documents indicated that policy makers and development planners appeared to have evolved a development strategy appropriate for the majority of the population. In addition, these documents indicated that policy makers wanted to establish a two-way flow of communication between central government and local communities.

In January 1976, the USAID Mission to Ghana was requested by the Government of Ghana to assist in the implementation of its district planning and rural development strategy. The request came from the Regional Commissioner of the Brong-Ahafo Region. He wanted USAID to assist the Atebubu District Council and its planning committee in the preparation of a five-year development plan, in drafting an integrated district budget for Ghanaian Fiscal 77/78 and in developing a capacity for the identification, preparation and implementation of district-level rural development projects.

The proposed district was surveyed by USAID staff and extensive discussions were held with traditional leaders, local communities, farmers and members of the newly-established district council. The

objective and rationale of a learning-by-doing approach were communicated, as well as the need for income-generating activities involving and benefitting relatively small-scale, traditional production units. It was explained also that external inputs would, in the initial phases, be rather modest. Project components would be added and project activities intensified as new development approaches were tested, demonstrated and found profitable and as communities participated in financing and decision-making.

It was decided that a development planning advisor should be posted in the district and be responsible to the chief executive of the council. It was explained that continued services of a development planning advisor and any further assistance would not be forthcoming if requisite preconditions were found not to obtain during a one-year experimental period. Criteria were agreed upon.

It was decided that during the experimental period demonstration of improved inputs and practices would be undertaken on farmers' fields; community self-help initiatives would be tested in feeder road improvement and in the construction and improvement of low-cost village water systems in coordination with programs and plans of responsible central agencies; experimental approaches would be tested to encourage private traders to expand their activities closer to the farm gate; intensive studies would be undertaken to enable the district council to come to decisions regarding the total size and type of investment program on the basis of the value of incremental production that could be realized and relative to increases in taxable capacity within the district.

Also, it was agreed upon that these studies were to be used in establishing an ongoing information system to be used by the council and the planning committee to (a) monitor and evaluate project activities in terms of their impact on important growth indicators and (b) identify new project components as information became available, as experiences were gained, and as local community resources were mobilized which would best complement critical external resources in generating growth and development processes.

The project proposal³⁰ was at the time of this writing awaiting approval in Washington. The Mission anticipated that its approval would take some time. This is because its implementation has several radical implications for AID's established programming and budgeting procedures.

3. Problems and Limitations to Planning the MIDAS Project

Under the limiting conditions imposed by the environment in which small farmer projects could be planned in Ghana, several additional problems evolved during project formulation and design of the MIDAS project. Many of these problems were caused by the way in which USAID has to operate under its own programming and budget cycle.

These problems stem basically from the fact that USAID is not a permanent agency, requiring it to seek authorization for its existence before its budget can be appropriated by Congress. This state of affairs seriously complicates AID's budget process.

³⁰ See (32).

For example, if a USAID field mission wanted to obligate funds to a development activity in, say, October 1977 (the beginning of Fiscal 1978) it would have to identify the activity at least 15 months before in July 1976. This is because any assistance proposal has to be brought through three proposal, review and approval stages before funds can be authorized to finance the activity.³¹

The problem with this procedure is that an estimate of USAID's contribution to total cost will have to be made before an activity can be costed out in detail. Usually such costs are overestimated to provide the project design team some flexibility. However, in practice a design team will face considerable pressure to keep actual project costs in line with estimates. This is because estimated funds are already in the pipeline. With AID this pipeline is long. In any case it is inexorable since bureaucrats and programmers find deobligations of funds extremely embarrassing if not damaging to their careers.

The upshot of the above is that, through this complicated budgeting process, the USAID contribution³² to the MIDAS project was set at \$35.0 million (of which \$5.0 million was to be grant funded) before the design team, composed entirely of USAID officials, was able to set pen to paper.

³¹When funds are finally authorized for obligation it takes at least an additional 6 to 9 months before commodities or personnel can actually be brought "on-board."

³²According to U.S. laws that contribution must equal or not be greater than 75 percent of total project cost.

In the meantime, the Agricultural Development Bank, anticipating assistance from USAID, instructed the Ministry of Economic Planning to request USAID for US\$ 115 million in loan funds—nearly five times the amount USAID was proposing. These funds ADB planned to disburse over a three-year period to finance its version of an expanded small farmer credit operation. That sum represented an estimated fourfold increase over ADB's current annual total agricultural lending operations, of which total a maximum of only 20 percent had been lent to group farmers. The request was, to say the least, totally unrealistic. Worse, the request put into question ADB's sincerity in implementing an integrated credit operation which met the needs of small farmers and which was consistent with ADB's absorptive capacity, particularly with the limited number of experienced senior projects officers who could be placed in the field and to whom ADB was willing to give loan approval authority.

This state of affairs depicts a major limitation that a development planner in general, or a project designer in particular, faced in practice. On the one hand, the project designer is paid to advocate projects rather than to analyze them in terms of their feasibility and economic rate of return. On the other hand, he must live with his conscience. Under these conditions the development planner must search for ways in which he can transform the unreasonable into something which makes sense, is likely to be workable, is likely to generate a reasonable rate of return and is likely to keep him on the job.

It is for this reason that the development planner can and should make maximum use of cost-benefit analysis, provided of course that he

uses it as a device to identify the important assumptions under which desired rates of return are likely to be realized rather than as device to contrive a rate of return.

4. Practical Applications and Uses of Cost-Benefit Analyses

As in the design of the Pulse Promotion project in Ethiopia, the design team of the MIDAS project did not have sufficient time to come to terms with the many questions and issues which such a project typically raises.

This was doubly unfortunate since the MIDAS project in Ghana, unlike the Pulse Promotion project in Ethiopia, had objectives that were in direct contradiction to the policies and programs which the Ministry of Agriculture was promoting in support of its agricultural development strategy. Further, applied research on behavioral adjustments and technical responses to improved practices and technologies in small traditional farming systems was, to say the least, in its infancy. There was little work being done in Ghana on yams, cocoyams, cassava or plantain. Yet, these crops account for 68 percent of the calorie intake that the typical Ghanaian derives from the consumption of starches and grains (which in turn account for well over 90 percent of total calorie intake of all commodities). Also, these four crops account for 87 percent of the total production of all starches and grains and are the most important components of the traditional cropping patterns as well as the major source of income for small traditional farmers. Yet, in spite of evidence of good response rates of cassava and yams to fertilizer

application from the International Institute of Tropical Agriculture (IITA) in Nigeria, the Ministry of Agriculture, anxious to promote new industrial and export crops for foreign exchange generations restricted fertilizer application on these traditional crops.

As a result, cost-benefit analysis was directed toward four specific purposes: first, to bring into the open the important assumptions and preconditions under which the benefits of the project might be realized; second, to show Ghanaian decision-makers and development planners that, if these conditions were to obtain through implementation of appropriate policies, the benefits to the Ghanaian economy of the MIDAS project and its components could be quite substantial; third, to evolve a list of performance criteria against which the project's impacts on the economy could be assessed over time; and fourth, to identify needs for specific data so that evaluations could be undertaken in the future.³³ However, the analysis was not complete, and an economic internal rate of return was not estimated. In view of the severe limitations of data and time, it was not possible to add such a refinement.

In the remainder of this section the most important issues and assumptions that were identified in applying the cost-benefit analyses will be discussed as well as the manner in which the design team dealt with these issues.

³³The economic and financial analyses underlying the cost-benefit analysis were distributed to some USAID missions in the Africa Bureau as models for applying such techniques in project planning of small farmer projects.

The first issue was how fast the ADB could establish its new branches or farm loan offices (FLOs) and how quickly these could serve the desired number of farmers. In initial discussions ADB officials argued that the only constraint was the availability of funds before the lending season and that the ADB could fully absorb the US\$ 115 million they had originally requested. Discussions deadlocked and the team had to obtain information on this vital question elsewhere. There were two sources: the Bank of Ghana, which partially underwrote ADB, and a team of World Bank consultants which was streamlining ADB's accounting and financial control system.

Discussions with Bank of Ghana officials were discouraging for a number of reasons. First, the design team was told that any program channeling funds to ADB was like "pouring money down a rat hole" because ADB had been forced by successive regimes to make large loans to state farms, to other public institutions and to large farmers for political reasons. These loans had never been repaid with the result that ADB was suffering an acute form of capital erosion.

Second, the design team was informed that local currency funds were not a constraint to increased lending activities in agriculture. The Bank of Ghana was holding some \$360 million in deposits from commercial banks which could not find profitable investment outlets in agriculture, even though these funds were reserved for this sector under the Bank of Ghana's credit guidelines. Rather, the problems was finding investment opportunities for which financial returns at least equaled the 6.5 percent rate that financial institutions had to pay to lenders.

To put these funds to work, the Bank of Ghana was establishing several credit guarantee schemes (including rediscounting agricultural paper) for financial institutions lending to large-scale agricultural enterprises. With respect to small farmer lending programs, the design team was told that the future lay in the mobilization of rural savings and that the appropriate vehicles for this would be Private Rural Unit Banks organized and monitored by the Bank of Ghana. In short, the Bank of Ghana was, at least at the level at which the design team communicated, not interested in the Agricultural Development Bank or in financing an expansion of ADB's small farmer lending operations.

After lengthy discussions of this state of affairs among USAID Mission personnel, it was decided to move ahead with the program. It was difficult to conclude otherwise. The money was in the pipeline; the Agricultural Development Bank (though not the Ministry of Economic Planning) had requested USAID for assistance; and USAID was, after all, a development institution ready to serve any host country institution in the task of reaching the "poor majority."

Discussions with World Bank officials were more encouraging. The design team was informed that—given past staffing rates, turnover and staffing patterns—the ADB could expand at a rate of about 10 new farm loan offices per year, and that each FLO, with the manpower required to staff it, could learn to service about 2,000 farmers individually or in groups. These figures—or assumptions—were the key inputs in estimating incremental benefits in the cost-benefit analysis as well as for deriving the ADB's capital needs to finance its expanded credit operations.

The next question was the amount of credit needed annually by participating farmers. This is a difficult question to answer. Farmers have different liquidity problems, different sources of off-farm incomes, and different uses for both short and medium term credit. Ignoring the resulting range of error, the farm budgets derived for this analysis showed that incremental annual cash costs of the typical holding in both the forest and savannah zones would average about \$100 per acre at unsubsidized input prices. If one allowed a reasonable frequency of demand for medium-term credit for land expansion and improved on-farm storage, a figure of \$500 per participating farmer was not too unreasonable. When these assumptions were worked through and compared to the funds that could be generated by commodity inputs under the program, some sort of consistency emerged.

The third issue was what adjustments small farmers would be likely to make in areas served by FLO's and what effect these adjustments would have on increasing production. These adjustments depended, inter alia, on the availability of improved inputs, knowledge about the effects of the use of these inputs and related improved practices and their combined effects on requirements and the availability of labor. They depended also on stable market outlets and the ability of the marketing system to clear marketable surpluses and provide continued price incentives to farmers. The nature and magnitude of these adjustments depended on whether farmers behaved as if they wanted to maximize anything, over any lengthy run, to any input or combination of inputs that appeared limiting to them.

It was difficult for the design team to answer these questions during project formulation. However, some judgment had to be made as to whether small farmers would have sufficient incentive, with existing technologies, to use credit productively. This was done by determining the yield increases required by the typical holding to obtain an incremental value cost ratio that was close to 2.0 for all recommended improved practices for all crops without changing the cropping pattern. These imputed yield increases were then compared to yield responses published in agronomic reports. The imputed yields were, except for cocoyams and plantains, relatively consistent with reported yields. The problem with plantain and cocoyams was that no information on their response rates to improved practices was available although they were very important in the traditional cropping pattern of the forest zone. Therefore, incremental yields for these crops had to be assumed. It was this assumption with which the design team felt least comfortable with in coming to a judgement about the potential economic payoff of the project.

The fourth issue was the length of time that each farmer would be required to be served under the project. The real payoff of a public sector investment program, and especially a credit program, derives when farmers graduate from the program. This occurs when farmers are able to finance their cash needs either from retained earnings or from the commercial banking system. When farmers graduate, private sector resources can be mobilized and the benefits of past public sector investments will be sustained. The economic payoff of the project will

be further increased since public sector funds can be used to reach additional farmers. However, the design team did not account for these additional benefits in deriving the overall net incremental benefit stream. This is because the team did not believe that future Government monetary and fiscal policies would give the Agricultural Development Bank sufficient incentives to encourage graduation of its clients; ADB needed borrowers, particularly good borrowers, to maintain its solvency (especially during inflationary times).

The purpose of the foregoing has been to explain the usefulness of the cost-benefit framework in identifying key issues and assumptions underlying estimates of potential economic payoffs of public sector investment projects. Of course, its usefulness will be always limited by data availability. However, as will be explained in the next chapter, lack of data should in no way discourage project designers to attempt to apply cost-benefit analysis.

CHAPTER V

LESSONS FROM ETHIOPIAN AND GHANAIAI EXPERIENCES

A. INTRODUCTION

This chapter distills the major features of the environment and manner in which the four small farmer projects were brought into being in Ethiopia and Ghana. The summary will be based on my observations and interpretations of forces which shaped the environments in Ethiopia and Ghana and which, therefore, gave rise to the manner in which these projects were planned. The summary will also touch on the roles and responsibilities of major actors in shaping an environment in which small farmer projects can be planned that are likely to have maximum impact on national growth objectives and development goals.

The chapter is divided into three major parts. The first reviews the major features of the Ethiopian and Ghanaian environments and contrasts these features with the stages in the evolution of the environment in which recommended small farmer structures and processes could be brought into being. The objective is to identify some important problems and limitations to, and the responsibilities of major actors in, approximating or establishing the sufficient conditions in which more successful small farmer processes could be brought into being.

The second part reviews the major features of the manner in which the four projects were planned in Ethiopia and Ghana and contrasts these features to the requirements of planning recommended small farmer

project structures and processes. The objective is to identify some important problems and limitations, examine their causes and recommend approaches and measures to overcome major problems and limitations.

The third part of this chapter draws some implications for donors, particularly USAID, and the U.S. research community in assisting the implementation of these approaches and measures.

B. THE ENVIRONMENT IN WHICH PROJECTS WERE BROUGHT INTO BEING

There was a major difference between Ethiopia's and Ghana's environment in which small farmer projects could be brought forward. This difference existed even though large portions of total marketed agricultural production came from small farmers in both countries, and even though the market-dependent population in both countries was increasing rapidly. The major difference was that in Ethiopia large amounts of public sector investments allocated to agriculture were being used to establish the necessary conditions for reaching small farmers as early as 1971. However, in Ghana a consensus on the desirability of reaching small, traditional farmers had not been attained even as late as 1976. As a result large proportions of public funds allocated to agriculture were used to subsidize large farms.

A major reason for this difference was that in Ethiopia, where most small, traditional farmers grow primarily grain crops in pure stands, a technology existed which would enable these production units to make a significant contribution to increases in marketable surpluses required

for domestic consumption. In Ghana however, where traditional farmers grow primarily roots, tubers and some cereals in mixed stands, a technology does not exist which would enable these production units to contribute much more to marketable surpluses required by domestic markets.³⁴

Another important reason was that unlike Ethiopia, Ghana had made greater efforts in attempts to "industrialize" its economy and "educate" its people. As a result, the expectational processes and pressures to shift away from the traditional structure of agriculture were much stronger in Ghana than in Ethiopia.

In spite of this difference, donor agencies were advocating and supporting small farmer projects which would establish the necessary conditions in both countries. In Ethiopia donor agencies succeeded because they had an important friend—the development planner. In Ghana, donor agencies were less successful; there the development planner sided with the policy maker. It is likely that for this reason donor agencies in Ghana attempted to implement their mandates outside the government structure, working through para-statal organizations (such as the Bank of Ghana, the Agricultural Development Bank, the National Investment Bank) through the private sector and its voluntary organizations and, more directly, with small, traditional farmers and/or their local and traditional organizations.

³⁴ In both countries small farmers contribute the big share to the production of major export crops, i.e., coffee in Ethiopia and cocoa in Ghana.

In effectively implementing their assistance approaches to small, traditional farmers through the central government agencies in Ethiopia, development planners and donor agencies were constrained by the land tenure situation, particularly in the individual tenure areas. This, as well as other forces, lead to the Revolution in 1973.

However, in Ghana donor agencies are constrained in effectively planning their assistance programs through central government agencies for small, traditional farmers. It was uncertain, as of mid-1976, where this situation would lead.

In approximating or establishing the sufficient conditions for effectively involving small farmers and their communities in planning and executing growth and development processes there were several problems and limitations common to both Ethiopia and Ghana. These problems and limitations stem from common attitudes, motivations and behavior of policy makers and development planners.

First, in both Ethiopia and Ghana, development planning was done by the public sector, for the public sector and in almost complete disregard for the capabilities of the private sector and its requirements in supporting services and infrastructure to effectively participate in growth and development processes. Policy makers and development planners in both countries tended to magnify the importance of the public sector and to disregard the private sector for a variety of reasons. These are:

- a. Political leaders and civil servants, particularly of the administrative class, are members of the public sector and have a natural interest in increasing the power and prestige of that sector.

b. Many policy makers and development planners distrust the private sector, possibly on ideological grounds.

c. There is a tendency in LDC's for the private sector to be dominated largely by foreigners—Italians in Ethiopia, Lebanese in Ghana.

Where nonforeigners have broken into the private sector, they are largely from disadvantaged groups—the Guragi tribe in Ethiopia, very few of whom were in the urban elite; the famous Mammy traders in Ghana, who were looked down upon by the urban elite at all times. Thus in both countries there tended to be negative attitudes toward most members of the private sector. Support for the private sector, however, was viewed as an act of nation building.

A second limitation to involving small farmers and their communities in both countries was that planning was a one-way process which came "from above." In Ethiopia and Ghana there was no effective mechanism for political and administrative decentralization. Also, "below" was far from unified. The masses of small farmers in both countries are divided by barriers of tribe, language and religion. In both countries there was a chasm between "above" and "below" in terms of income, education and opportunities and hence in ability to plan and organize programs for the majority in the rural areas. Policy makers came largely from the urban areas; where they came from the rural areas, they wanted to put the past behind them. These attitudes made planning from above inevitable.]

A third limitation to involving small farmers in development processes was that the planning exercise in agriculture was one of establishing national production targets for crops that, for various reasons, were regarded as important to the national economy. It was also an exercise in defining policies and programs that would enable the public sector to achieve those production targets. The planning exercise was not one of defining an optimum mix of effort from the public and private sectors in:

- a. Organizing increases in marketable surpluses, and in
- b. Organizing ways in which maximum value could be realized from these surpluses with minimum public sector resources.

For example, designers of the Minimum Package Project in Ethiopia ignored ways in which traditional marketing channels could have participated in input distribution and product marketing. This increased the burden on public sector resources to finance the off-farm costs of generating increased marketable surpluses from small holdings. It is difficult to estimate the opportunity cost of these public sector resources relative to the benefits foregone of public sector investments in direct support of the traditional marketing system. Examples are: road improvement; feeder road construction; credit to private traders and/or farmer associations to update vehicle fleets, to construct purchasing stations or to carry inventories.

In Ghana, the planning mentality that the public sector could do all things was even more firmly entrenched. The proliferation of para-statal and semi-autonomous institutions, their lack of coordination,

their duplication of effort and their wasteful competition for scarce manpower and financial resources has been well documented. However, the social cost of proliferation of public institutions and of the policies and programs they pursue to justify their existence has yet to be estimated.

Donor agencies, too, were constrained in their efforts to increase the participation of the private sector in development. The major reason is that donors have to channel their resources through the public sector. However some donors are limited in scope by mandates that specified the sector for assistance and the target beneficiaries. For USAID, for example, the sectors were agriculture and nutrition education and health and family planning; the target beneficiaries "the poor majority." Under this mandate, activities designed to improve infrastructure could only be included, if at all, as part of a larger effort directed specifically at certain problems and target groups. In any case, since all donors operated under some political mandate, they too had good reason to go at least part way with the attitudes of policy makers.

A fourth limitation to involving small farmers in growth processes was a tendency of development planners (particularly in Ethiopia) and donor agencies to implicitly justify these projects primarily on the basis of employment, income distribution and other equity considerations. This was reflected by the fact that development planners and project designers in both Ethiopia and Ghana were less guarded about the nature of the assumptions and preconditions under which marketable surpluses could be produced and marketed from small holdings.

In so doing, it is likely that development planners and project designers may have been overly optimistic with regard to the adjustments (behavioral and technical) that traditional peasant farmers were able to make even when an improved technological package was made accessible to them. Also, they may have been overly optimistic about the magnitude of project effort and off-farm costs required to increase marketable surpluses and to sell them at prices that would give farmers sufficient price incentives to sustain requisite production increments.

The consequence of this is that, in spite of the uncertain economic payoff relative to limited private sector participation small farmer projects in Ethiopia and Ghana were designed to considerable size, scale and cost. For example, the Minimum Package Program in Ethiopia accounted for over 20 percent of total development expenditures planned in agriculture over the Fourth Five-Year Development Period.³⁵ The MIDAS project was to cost about U.S.\$ 45.0 million over a four-year period. The incremental annual budget obligation represented about 25 percent (if the fertilizer subsidy was to remain in effect) of Ghana's total annual capital expenditures in agriculture in Ghanaian fiscal 1975/76. Also, the IBRD was in mid-1976 negotiating an integrated agricultural development project for 100,000 small-scale farmers in Ghana's Upper Region that would have a total cost of U.S.\$ 60.0 million over a five-year development period.³⁶ These are not small projects.

³⁵ See (12).

³⁶ See (22).

They represent considerable investments in either absolute or relative terms. They also raise serious questions about the elasticity and capacity of the tax structure to transform incremental economic benefits into incremental revenues at rates sufficient to finance loan repayments as well as replacement and recurrent costs after the development phase when continued donor support is likely to be withdrawn.

There are reasons why the actors in the planning process tend to "think big." For all of them, a big project meant an increase in either power, prestige or political pull. Big projects make big headlines. Expensive projects may line someone's pockets. For some they may strengthen popularity with the people. The response of the Agricultural Development Bank to the interest of AID in the MIDAS project shows just how big host country policy makers like to think. Big projects provide new jobs for the urban elite (LDC university graduates may prefer desk jobs in the capital, but the time since independence has lengthened and these jobs are increasingly scarce). Development planners enjoy thinking big too. As is described in more detail in the following section, bigness allows for the inclusion of project components traditionally regarded as essential prerequisites to project success. Components can then be "integrated"; and integration is a planner's watchword. It is only human that a planner should be more excited about the prestige attached to being associated with the planning of a project that will cost several million than one that will entail only a few thousand. The local mission of a donor agency gets political kudos from large loans or grants, both in the host country and in its home headquarters. Big is beautiful for them all.

A fifth limitation common to both Ethiopia and Ghana in effectively planning and executing small farmer projects is the absence of an overall planning and information framework with which all agricultural projects could be consistently reviewed, monitored and assessed for their effect on important macroeconomic variables. A most frequent apology for this state of affairs was that the data base for comprehensive national planning was weak or nonexistent. Unfortunately, this line of argument ignored the data base already being evolved as a result of considerable efforts by some development planners and project designers to prepare cost-benefit justifications for their projects.

In development planning it is one thing not to have a global view of the complex interrelation of important macroeconomic variables operating within and between sectors of the economy; one cannot do all things at one time. However, it is quite another thing not to attempt to move toward that state of affairs. One must make a beginning and the beginning is where the action is, where projects are undertaken, where economic payoffs and benefits are anticipated and where the returns to time and effort expended in data collection and analysis are, therefore, likely to be highest. However, to make consistent estimates and assessments of the impacts of projects on important variables one must have a consistent format in which projects are designed, appraised, and justified in economic terms.

This condition did not exist either in Ethiopia or Ghana. The IBRD had its format; UNDP, the Swedes, Germans and USAID had theirs; and many donors did not have a format at all. Not only did this situation lead

to extreme difficulties with respect to project appraisal, evaluation and assessment of project impact by the host country, but it also led to double counting of project benefits.

For example, in Ethiopia the MPP project proposal published in July 1972 counted the incremental benefits of its continued credit operations in Debre Zeit, the same area of operation as the USAID-supported ADA integrated agricultural development project. In Ghana, the benefit-cost analysis of the MIDAS project, a national program, included in the projection of its incremental benefits some of the same benefits that IBRD was projecting for its integrated agricultural development project. Also, it included some of those benefits which the Germans would no doubt project for a justification of an extension of their agricultural activities in the Northern Region, and no doubt too some of those benefits which UNDP had been projecting to justify an extension of their FAO/FFHC demonstrations throughout Southern Ghana.

Each donor, rightly or wrongly, believed that without its inputs and project activities the benefits of other programs would not be realized. In an improved situation these judgments would be made by the host country. This they could do if they had an overall planning framework with which to monitor and coordinate various agricultural projects and donor assistance activities.

A sixth limiting factor was that in almost all cases with which the author is familiar, donor-supported agricultural/rural development projects focusing on small farmers were not formulated and designed under the initiative of either Ethiopians or Ghanaians, let alone small farmers.

In situations where funds are limited, where high level manpower is scarce and fully utilized, where civil servants do not get clear-cut policy directions from politicians and policy makers and where civil servants have only limited experience in sector planning and project formulation and design, it is difficult to imagine how the situation could be otherwise. Under these conditions the civil servant and planner may already be overburdened in managing and monitoring the status quo.

It is likely that donor agencies desire to affect that status quo more rapidly than host country decision-makers and development planners are able to manage and regard as desirable or practicable. Whatever the reasons for limited host country participation in the formulation and design of agricultural/rural development programs, it leads to the undesirable situation in which implementors are not involved in planning; where project participants and beneficiaries are involved neither in planning nor implementation; and where planning continues to be done at highly centralized levels as an end in itself rather than as a component of an integrated process.

The final limitation is that decisions to move ahead with a project were never made on the basis of the elaborate justifications contained in the detailed project proposals. They were decided on the basis of criteria that could not normally have been contained in any project proposal no matter how comprehensive its scope or refined its analyses. It is likely that decisions to move ahead with projects and that corresponding commitments were made long before appropriate technical feasibility, economic payoff and social soundness analyses were instituted

and completed. It is possible that the long lead time required by donor agencies to obligate funds out of their pipelines may explain this state of affairs. It is also possible that projects may be generated from a momentum that can be initiated and sustained only by the sheer force and charisma of personalities that can penetrate, influence and shape the conventional wisdom. In that case detailed project proposals and cost-benefit analyses may be the last stalling mechanism that can be brought to bear to forestall the inevitable.

C. SOME IMPORTANT PROBLEMS AND LIMITATIONS OF THE MANNER IN WHICH PROJECTS WERE PLANNED

This section summarizes the most important problems and limitations the author encountered in participating in planning the four small farmer projects in Ethiopia and Ghana. The discussion is structured to reflect the evolution of my own thinking and experiences, the mistakes made and the lessons learned.

1. The Pulse Promotion Project

The first project in which I participated was the Pulse Promotion Project. Its formulation and design violated every aspect of the manner in which small farmer project processes should be planned. Although it was seen as desirable that small farmers should participate in the production of a new export crop, there was little knowledge about the conditions under which small farmers would make requisite behavioral and technical adjustments in their farming system to accommodate new pulse crops in their cropping pattern. Small farmers were not involved

in project design. Rather, it was assumed that small farmers would bring about requisite increases in marketable surpluses to cover the cost of the project. These costs primarily included 16 man-years of overseas technical consultants and equally expensive housing to accommodate them.

Also, the conditions under which incremental market surpluses could be realized were not overtly identified and discussed; rather they were hidden in obscure footnotes to tables of several uncomprehensible annexes.

No role was identified for the traditional marketing sector to share in input distribution and product marketing, and no assistance was included in the project for developing traditional marketing channels.

Finally, cost-benefit analysis was manipulated to produce an "acceptable" rate of return. After all, the project had to be approved since so much time and effort already had been invested to bring the project along towards approval for external funding. In circumstances where few "bankable" small farmer projects are brought forward relative to the supply of aid funds, the project designer is under considerable pressure to show that the improbable is feasible. It is no surprise, therefore, that when planning is done in a vacuum and becomes an end in itself rather than a component of a larger process, projects will take on a momentum of their own. This momentum may during implementation quite easily fly in the face of common sense.

2. The Tigre Land Improvement Project

By the time that the Land Improvement Project was to be designed, I became aware of the following needs in project planning:

- a. More information on the target population and its environment
- b. More honesty in the application of cost benefit analysis in justifying projects
- c. An extended planning phase to test out important assumptions underlying project success.

Consequently, considerable time and effort was invested, using primarily Ethiopian government funds and manpower, in preparing the project for IBRD financing. Aerial surveys were flown, and test drilling was considered. However, there was little effective participation and involvement of farmers who were expected to construct terraces and undertake other conservation works in the watershed. There was some contact with community elders and leaders; however, there was uncertainty about the degree that they represented the interests of the majority of the people in the watershed. Also, extended stay of the design teams in the proposed project area quickly raised expectations.

Much information was gathered, but not all of it would be useful for project planning and implementation. It was difficult to determine in the beginning what the critical data needs would be and how these data could be collected most rapidly at minimum cost.

As a result, the planning phase became too long. Planners in Addis Ababa and with IBRD Washington became impatient. However, the design team was still uncertain about the most appropriate components, method of implementation and the conditions under which benefits would be realized. Therefore, the design team was unable to make specific recommendations. After about a year a report was finally drafted

recommending a modest, learning-by-doing approach. But by that time it was already too late since other events—the famine just south of Tigre—had claimed policy makers' attention and scarce IDA/IBRD funds.

Apart from the famine, a major problem in moving the program through to implementation was that IBRD, the funding agency, had little commitment to the project. This was because IBRD, although it had initially identified the project, had little control over the manner of its formulation and design.

3. The Managed Input Delivery and Services Project

In formulating and designing the MIDAS project the major limitation was the fact that—in spite of the unique, integrated system features of the project—the design team, composed entirely of USAID officials, had difficulty in relating the inputs and outputs of many project components to the incremental benefits that the target population was expected to generate and sustain.

Specifically the design team was concerned about two things. First, although some evidence existed that progressive small farmers required some (if not all) of the inputs provided under the project, there was much less evidence about of the input needs of the less progressive, poorer farmers. Second, the design team was concerned about the guarantees that could be written into the project to assure that a significant proportion of these inputs and services would be made available to small farmers. The team was concerned about the form this could be done without causing the Government of Ghana to believe that

their intentions were suspect, their policies wrong, or that USAID wished to interfere with Ghana's sovereignty.

It is not possible to tell whether the design team effectively dealt with these questions. Again, a project designer is exploring unknown worlds, in a very short period of time, under extremely limiting conditions. He or she is paid to act upon the assumption that it is better to do something than to do nothing, an attitude only developed countries can really afford. Whatever misgivings the design team had with respect to the first concern were spelled out and explained in the cost-benefit analysis, and to express that concern was the only reason that the analysis was even attempted for a project of this nature.

The second concern was to be handled during negotiations by attaching to the loan agreement various conditions precedent and covenants which the Government had to undertake before initial disbursement of loan funds. These undertakings were to establish a separate accounting and financial control system for small farmer credit operations; to increase agricultural lending rates to such a level as would allow ADB to finance all of its costs out of the spread between lending and borrowing rates; to evolve new credit guidelines so that small farmers who were multi-cropping as little as one acre could qualify; to phase out fertilizer and seed subsidies; to institute rebate systems to cover losses incurred by private organizations while subsidies were still in effect; and to put into effect an evaluation system with specific criteria for assessing project impact and effectiveness. These conditions and covenants were a formidable list. They reflected in no small way

the design team's doubt and uncertainty about the environment in which the project was to be implemented and the conditions under which the objectives could be achieved.

A major reason why the design team was not able to relate project inputs to project objectives and goals was that many of its components (in fertilizer, seed and credit) were primarily formulated and designed by technicians. The technicians were more concerned about the internal workability of their activities than about their impact on the broader objectives to which they were applied.

For example, the experts who designed the credit component gave no indication of the number of small farmers who could be reached by the new farm loan offices whose establishment they had recommended.³⁷ Consequently, the design team—composed largely of economists and programmers—had to stipulate the number of small farmers who would have to be reached so that a desired stream of benefits could be realized. This figure came to about 2,000 farmers per new loan office. The design team had only the assurances of an IBRD expert working with ADB that such a number could actually be reached in practice.

A final limitation that became apparent after the MIDAS project had been planned was the fact that the people who manage projects and are expected to generate their benefits under real life conditions, seldom take part in project formulation and design.

³⁷ See (23).

This is a serious problem, nearly always encountered by donor agencies. Many approved projects are often seriously delayed because skilled contractors or in-house staff cannot be found. When managers are finally engaged, the design team will have departed from the scene. The managers have to obtain their instructions and job descriptions from documents that are all too often incredibly lengthy, impersonal and even unreadable. Under these circumstances, it would take a very conscientious and insightful individual to read between the lines and footnotes of annexes to understand the conditions under which the benefits of the activity may be realized. An improved situation can rarely be achieved in practice, since contractors cannot be funded before the project is approved and the project cannot be approved before it is shown to be feasible. The effect of this limitation could be mitigated if host country staff were more actively involved in formulation and design, or if planners became involved in implementation. However, the latter situation appears to have few possibilities. This is because few planners—particularly well paid and well travelled planners—would wish to be tied down to implementation details. The money goes to those who generate the ideas; the mess goes to those who are left behind to pick up the pieces.

4. The District Planning and Rural Development Project

This project most nearly approaches recommended small farmer project structures and processes. The project was formulated on the basis that project planning and implementation cannot be divided into

two separate phases and cannot be carried through by different actors. Rather, it attempts to involve small farmers directly in decision-making and resource contributions in all phases of the project process.

The approach recognized that small farmer projects should be initially undertaken in low-cost, experimental modes; that they should be expanded or replicated as knowledge is gained, as lessons are learned and as farmers themselves will increasingly be able to share in decisions and contribute their own resources to activities that are of direct benefit to them.

The problem with such learning-by-doing approaches is that they rarely have been attempted, especially with donor support in Ethiopia or Ghana. There may be several reasons for this.

First, neither Ethiopia or Ghana had proceeded very far in their efforts to strengthen local government systems and to decentralize the activities of public institutions. This meant that there was no effective system operating at local levels to organize groups into representative decision-making units to which national institutions would be responsive and to which they would be accountable.

Second, in the absence of effective local government, donor agencies in Ethiopia formulated and designed integrated agricultural/rural development projects whose components met the necessary conditions and which could be effectively coordinated at decentralized levels. They were designed to disseminate technologies that appeared to be acceptable on a broader basis than on the limited scale in which they had been previously tried and tested. In Ethiopia this was one by specialized

project authorities initially working outside the national government. These projects were not designed to involve local communities in either decision-making or resource commitment. This was because project designers did not believe that communities were able to make decisions about what was best for them or about the potential payoff to the technologies that would be introduced. This paternalistic attitude³⁸ overlooked the fact that the Ethiopian small farmer had generations of agricultural survival experience behind him and was likely to have at least a pretty good idea about his own risk capabilities. These area development projects in Ethiopia took on a momentum and scale which was out of all proportion to the resources that local communities could have contributed under the best of circumstances. The rate of build-up in project cost and personnel per beneficiary was later regarded by Ethiopian Government officials to be out of all proportion to what the Government could absorb and finance once donor assistance was withdrawn. For this reason donors were requested by the Ethiopian Government to spread and reduce costs by increasing the number of beneficiaries and to experiment with new approaches which would more actively involve beneficiaries in all aspects and phases of project execution.

Consequently, relative to a learning-by-doing approach these integrated area development projects were implemented in reverse; they started on a large scale with high cost per beneficiary, and replicated and reduced to more modest proportions as experience was gained.

³⁸ Project designers in Ghana shared this paternalism, in spite of the large and often successful number of self-help projects that had been undertaken in the rural areas in recent years.

Possibly this was what was required to provide a training ground for high level staff in the outlying rural areas. Possibly it was also an application of Hirschman's Principle of the Hiding Hand³⁹ in that project designers did not want to run the risk of underdesigning these projects and did not want to underestimate the creativity of project managers in evolving new approaches and methods to overcome constraints and to make these projects more successful. Another possible reason is that project designers wanted to have a significant impact so that the project would not be ignored by development planners in Addis Ababa.

Whatever the reasons were in Ethiopia, the same approach came to be followed in Ghana, which does not have as long a history as Ethiopia in experimenting with small farmer development approaches. There IBRD in 1976 was planning to replicate, on a large scale, a technological package (based on bullock plowing) for small farmers in the Upper Region of Ghana. The program has the same features as the area development projects in Ethiopia. There is a special project authority, working outside the framework of the national systems of public institutions. It has all the components of the classic agricultural/rural development package. There is limited participation by project beneficiaries in decision-making and resource commitment to off-farm costs and project costs. And the project will compete for scarce Ghanaian high level manpower.

In personal discussions with members of the IBRD design team, the large scale and size of the project was justified to me along the following

³⁹ See (10).

lines: The Government of Ghana was not interested in small farmers who were steadily losing ground to the large mechanized units which the Government was assisting. If the project were designed in keeping with the rate at which small farmers could contribute and participate, the project would be too small for IBRD funding, and the impact would be insufficient. A special project authority would be needed because it was impossible to work through the system. The system was not effective; its staff were not motivated; it was impossible to coordinate work programs and officials were arbitrary in their decisions. Therefore, high level manpower was better utilized outside the system. Also, there was not enough time to wait until the system might improve. In any case, other donors, such as USAID, were supposed to be working through the system and trying to improve it.

This argument made a tight case; IBRD officials wanted no interference and they wanted control of all phases of the project. (And they were prepared to pay in terms of dollars and scale to get it.) If the project turns out to be successful in terms of cost-benefit projections, IBRD would no doubt gain considerable leverage vis a vis Ghanaian policy makers in the future.

A third reason that a more modest learning-by-doing approach, whose rate of expansion is based on the increase in knowledge of the environment in which it is implemented, had so far not been attempted is that donors are under considerable pressure to get annually appropriated funds increased, obligated and spent. This is easier to do with a few large-scale projects than with several smaller-scale projects within a specific host country situation.

A learning-by-doing approach also requires a great deal of flexibility to change approaches, personnel and the level of funding, not only throughout the life of the project, but also within fiscal years. To obtain this flexibility in implementation requires corresponding budget and programming flexibility. Unfortunately, this programming and funding flexibility rarely obtains under the advance programming system through which donor agencies such as USAID have to operate.

A final reason that a learning-by-doing approach has not been attempted either in Ghana or Ethiopia is that it would require a few relatively high level project planners and implementors to live under rather modest circumstances in outlying areas during the time that the area is studied and components identified. Usually only anthropologists and Peace Corps or other volunteers do that. Although such people are excellent at understanding the area, and the reasons why local people do the things they do, they often tend to make observations on the conditions under which project benefits might be realized whose implications donor agencies would prefer to ignore.

D. IMPLICATIONS FOR USAID AND THE U.S. RESEARCH COMMUNITY

In planning/implementing the District Planning and Rural Development Project the design team has anticipated that lessons can be learned about the major underlying causes to the problems and limitations in executing recommended small farmer structures and processes in Ghana.

These major causes are as follows:

a. Failure by major actors to act as if they recognize that in planning/implementing small farmer projects they are, in fact, testing development hypotheses in involving small farmers in growth and development processes. These hypotheses have to do with the extent a consensus, the necessary and sufficient conditions can be achieved in the task environment to involve farmers effectively in planning/implementation of development activities. Accomplishing this may require that major actors admit that they do not have all the answers; that donor agencies, LDC policy makers and development planners not impose growth objectives and development goals on local communities; that those assisting local communities have a workable notion of what they want to learn before they initiate learning-by-doing approaches; and, that in implementing such approaches, an effective information or tracking system is put into place which enables learning and verification of development hypotheses.

b. Failure by major actors to act as if they understand that the structure of a project comprises elements whose optimum relation is most likely to be brought about by enabling small farmers, their local communities and their organizations to control the processes which affect these structures and the relations among their basic elements. These relations have to do with the mobilization of community resources for sustained growth and development; with enabling local communities to participate in decision-making and resource contributions; and with effectively and equitably transforming the economic increments into

financial increments so that these can be used within the community to mobilize additional resources for growth and development.

c. Failure by policy makers, development planners and donor agencies to understand that they are dealing with long term processes; and, because they tend to subdivide these processes into distinct, short-run stages meaningful to them, a failure to allow these stages to be integrated by those who have most to lose or gain by the manner that events run their course.

The optimum manner in which events run their course is best left for local communities to decide. However, in development there will always be a role for an outsider to assist communities in coming to these decisions in a manner most consistent with national goals and objectives and with the community potentials and abilities to overcome constraints.

The responsibility of donor agencies and the U.S. research community is to translate (a) through (c) above into operational terms and programs, given specific LDC conditions, to test and verify these programs in practice, and to learn from experience.

More specifically, the U.S. research community should deal with (b) so that donor agencies, such as USAID, can deal with (c); both agents should be guided by (a).

U.S. research institutions can help with actual attempts to execute learning-by-doing approaches in at least four ways:

- a. Identification of community structures, processes and forms of organizations in traditional societies which give a

maximum number of farmers a voice, and an opportunity for that voice to be heard in LDC capitals.

- b. Identification of key external resources which best complement and mobilize community resources for sustained growth and development.
- c. Methods of designing and implementing information systems which give maximum data, at least costs, for planning/implementing development change in terms that can be understood by traditional groups and in terms that can be effectively communicated to external assistance sources.
- d. An orientation toward research that will have greater programmatic implications for action.

The latter implies a recognition that development issues can only be reconciled where the action is, out in the bush on farmers' fields. The worlds of the small farmer may appear complex—but that is only because we have difficulty in understanding the reasons why he/she does what he/she does and why it makes sense. The analytical tools which researchers need are frequently no more complex than farm budget, household expenditure/income and labor utilization studies. These tools may be unsophisticated, but the questions that can be raised and answered with these tools are fascinating—particularly if they are applied in a multidisciplinary context in close collaboration with the LDC research community.

For donor agencies, such as USAID, the learning-by-doing approach raises even more serious questions. First, can they find dedicated,

high-calibre people who can assist local communities and organizations to implement such approaches in relatively uncomfortable, up-country conditions? Second, can they provide these people requisite programming and funding flexibility? From my experience and observations these questions bear out the most important limitations to a learning-by-doing approach supported by donors. These constraints, however, are not caused by a lack of capability of will and commitment among individual policy makers within USAID, but by bureaucratic forces which will inevitably control the pace of change.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

The broad objective of this dissertation has been to add to the body of knowledge about planning and executing small farmer projects in less developed countries (LDC's) with donor support. This has been done by examining some actual experiences—in Ethiopia and Ghana—in formulating and designing donor-supported projects with which I have been closely associated.

The analysis has centered around four pivotal and interrelated areas of concern:

1. The overall political/economic environment in LDC's in which small farmer projects are brought into being and which affects
2. the manner in which these projects are planned and which in turn affects
3. the execution and integration of phases (planning, implementation, evaluation and adjustment) of the project process; and, as these generate
4. project structures or the way in which resources are allocated to specific development activities and the way in which resources are mobilized for sustained growth and development.

Special attention has been given to the roles of and interplay among major actors (LDC policy makers, development planners, small farmers and donor agencies) in shaping the environment in which projects are brought

into being. Also, emphasis has been given to the role of cost-benefit analysis and as its use affects the manner in which projects are planned and executed during various phases of the project process.

Several problems and limitations have been identified and diagnosed by comparing my experience with an environment and manner in which more desirable small farmer project processes and structures can be planned and executed with donor-support. Attention has been given also to the measures that were used—or could have been used—to help overcome these problems and limitations, given the realities of Ethiopia and Ghana.

The major arguments and findings of this dissertation are summarized in Table 6.1.

The table delineates major characteristics of an environment and manner in which small farmer processes and structures could be planned and executed under more desirable conditions. These characteristics are contrasted to the major characteristics of the actual conditions common to both Ethiopia and Ghana under which small farmer projects were planned and executed. These actual characteristics have been subdivided to delineate not only the effects but also the major causes which underlie the obstacles to planning and executing more desirable small farmer project processes and structures in these two countries.

The major argument of this dissertation has been based on observations and findings of others who have evaluated small farmer projects in many LDC's. These evaluations have indicated that past efforts have failed to:

TABLE 6.1
BASIC CAUSES (AND THEIR EFFECTS) UNDERLYING THE PROBLEMS AND LIMITATIONS TO APPROXIMATING
RECOMMENDED¹ SMALL FARMER PROJECT PROCESSES AND STRUCTURES

I Major Area of Concern/Inquiry	Characteristics Under Actual Conditions Common to Ethiopia and Ghana			
	II Characteristics Under Best Conditions	III Symptoms	IV Causes	V Effects
A. <u>Environment</u> in which projects are brought into being	Consensus on the desirability of small farmer strategy. Right mix of public and private effort in establish- ing necessary and sufficient conditions for involving small farmers in growth and development.	Centralization of political and administrative authority. Inappropriate macroeconomic policies, i.e., low cost food for urban consumers, lack of incentives to producers.	Lack of or inadequate commitment to a national development strategy enabling poor majority to maximize their contribution to national growth and development.	Private/traditional sector and small farmers not effectively involved in national growth and development processes. Lack of research on technologies appropriate to small farmers.
B. <u>Manner in</u> which projects are planned.	Projects initiated and identified with small farmers and executed in low cost experimental modes. Cost-benefit analysis is a component of ongoing information system.	Top-down planning and one-way communication. Imposing objectives and goals on local farm communities. Projects initiated primarily by donors.	Little knowledge of environment systems, motivations and constraints of small farmers and of conditions that marketable surpluses can be generated from small farms. Ineffective local government systems.	Large, expensive projects relative to incremental benefits actually realized. Not testing development hypotheses. No information system, not learning from actual experiences.
C. <u>Project</u> <u>Processes</u> that generate project structures	Integration of project phases and execution of project phases undertaken with small farmers.	Lack of integration of project phases. Execution of phases undertaken by different actors and each phase regarded as an end in itself.	Tendency of small farmers to distrust government or project authorities or to expect project authorities to do all things for them.	Small farmers not involved in decisions about project planning/implementation.
D. <u>Project</u> <u>Structures</u>	Use of few, key external resources which effectively complement and mobilize local community resources for sustained growth and development.	Inappropriate specification of elements of project structure and of relations among elements. Narrow definition of goals and objectives. Too many external resources relative to local absorptive capacities.	Lack of local organizations effectively and equitably representing interests of small farmers and their communities.	Small farmers not effectively participating in project activities. Not contributing resources. Benefits not becoming self-sustaining. Projects are continuous drain on government revenues and scarce manpower resources.

¹Recommended on the basis of observations and findings of Development Alternatives, Inc. and U. Lele.

1. Involve small farmers and/or their local organizations in decisions about project planning and execution.
2. Motivate small farmers to make resource contributions to projects.
3. Make project activities and benefits self-sustaining after the development phase when external resources are likely to be withdrawn.

As a result of these shortcomings, many small farmer projects have been a drain on LDC government revenues, donor funds and scarce manpower resources relative to the value of incremental benefits or marketable agricultural surpluses they have generated.

It has been proposed in this dissertation that the art and essence of effectively involving small farmers and their communities in growth and development processes has to do with achieving the following:

1. The identification and allocation of a few, key external resources which most effectively complement and mobilize local community resources for sustained growth; and,
2. The identification of community structures and processes which would enable small farmers to have a voice in the manner that resources are allocated and used, and in the manner in which resulting surpluses are distributed or mobilized in other community development activities.

It has been argued in this dissertation that projects designed to achieve these objectives are likely to be more desirable in the sense that such project structures are most likely to have maximum impact on community and national development goals.

The project processes which are most likely to generate recommended project structures have been defined in this dissertation, as well as the environment and manner in which these recommended processes and structures could be planned and executed in LDC's with donor-support. The resultant framework is shown in Colum II of Table 6.1, page 148.

The apparent causes of major difficulties in approximating recommended small farmer project structures and processes in Ethiopia and Ghana are given in Column IV of Table 6.1. The symptoms and effects of these causes are shown in Columns III and IV respectively.

Taking into account the limiting conditions imposed by the LDC political and economic environment as well as the current USAID mandate that its assistance involve the "poor majority" in growth and development, this dissertation has recommended:

1. A learning-by-doing approach in specific geographical areas in LDC's whose activities and components would be intensified or expanded as information is gained, as lessons are learned, as constraints are overcome, as incomes are generated and as small farmers are able to share in decision-making and resource contribution.

2. A manner of applying cost-benefit analysis as a component of an overall information system; as a tool for identifying the assumptions and conditions under which incremental benefits could be realized; and as a device to monitor project impacts on marketable surpluses, farm incomes, local absorptive capacity, community revenues and resource mobilization.

Such a development approach would test, at least cost, the degree that the major causes underlying the problems and limitations to approximating recommended small farmer project processes and structures are interrelated. The approach would also test the degree to which successful planning and execution of small farmer projects (see rows B, C and D of Table 6.1, page 148) is likely to affect the overall political and economic environment (see row A) in LDC's.

The possibility that these causes are likely to be interrelated was discussed in Chapter III, where some of the forces leading to the Ethiopian revolution in 1974 were described.

The dissertation has also drawn several inferences for donor agencies, such as USAID, and the U.S. research community. There are several ways that both groups can improve their support of learning-by-doing approaches that involve small farmers in growth and development processes in LDC's.

First, USAID should give its field missions much greater programming and budgeting flexibility, particularly during project implementation, than they are now given. New mandates require new tools. Washington must understand that executing small farmer project structures and processes is not like constructing dams or roads. Most things that are likely to happen during implementation of small farmer projects cannot be foretold during project planning. This is particularly true if the project planning phase is divorced from implementation and if project planning is made to precede the project implementation phase.

Second, U.S. research related to agricultural development should strengthen its programmatic orientation and continue to focus on applied,

action research. More specifically the research community should assist USAID and LDC's by:

1. Identifying key, external resources which would best complement local community resources and most effectively mobilize these resources for sustained community growth and development.
2. Identifying low-cost information systems which yield optimum data for project planning/implementation/evaluation/adjustment.
3. Identifying community processes which would enable farmers to establish effective and equitable local organizations.

For the U.S. research community to make better contributions requires close and effective communication with USAID, other donor agencies, LDC planning and implementing agencies, and LDC research institutions. The responsibility for initiating and facilitating closer communication, however, lies within the donor agencies.

REFERENCES CITED

REFERENCES CITED

1. Baum, Warren C. "The Project Cycle," Finance and Development. International Monetary Fund, Washington, D.C., June 1970.
2. Chambers, Robert. "Planning for Rural Areas in East Africa: Experiences and Prescriptions," in David K. Leonard (ed.) Rural Administration in Kenya. Nairobi: East Africa Literature Bureau, 1973.
3. Development Alternatives, Inc. "Strategies for Small Farmer Development: An Empirical Study of Rural Development Projects." Vol III: Executive Summary, Washington D.C., 1975.
4. Ellis, Gene. Man or Machine; Beast or Burden: A Case Study of the Economics of Agricultural Mechanization in Ada District, Ethiopia. Unpublished doctoral dissertation, The University of Tennessee, Knoxville, June, 1972.
5. Experience, Inc. "The Feasibility of Producing Pulse Crops for Export Markets, Report No. 1." Minneapolis, 1972.
6. Fuchs-Carsch, Michael. Some Important Structural Features of the Agricultural Sector in Ghana. A paper presented to the Ministry of Agriculture Planning Division Program Seminar on Project Analysis at The University of Science and Technology, Kumasi, Ghana, October, 1975.
7. Goodwin, Joseph B. and Roger Selley. "A Review of Small Farmer Credit in Ghana: The Rice and Maize Schemes of the Agricultural Development Bank," in Small Farmer Credit in Africa. Agency for International Development Spring Review of Small Farmer Credit, Vol. VI, No SR 106, Country Papers, February, 1973.
8. Government of Ghana, Ministry of Economic Planning. "Strategy Outline for the Five-Year Development Plan 1976-1979." Accra, Ghana, 1975.
9. Government of Ghana, Ministry of Local Government and Administration. "The New Local Government Set-Up." Unpublished Mimeo., Accra, Ghana, 1975.
10. Hirschman, Albert O. "Development Projects Observed." Brookings Institute, Washington, D.C., 1967.
11. Holmquist, Frank. "Implementing Rural Development Projects," in Hyden, Jackson and Churu (eds.), Development Administration: The Kenyan Experience. Nairobi: Oxford University Press, 1970.

12. Imperial Ethiopian Government, Ministry of Agriculture. "Comments on the Ministry of Agriculture on the Draft Strategy Outline for the Fourth Five-Year Plan, 1974-1978." Addis Ababa, Ethiopia, 1973.
13. Imperial Ethiopian Government, Ministry of Agriculture. "Draft Proposal for the Pilot Phase in Tigre Province of the Northern Highlands Land Improvement (and Rehabilitation) Program." Addis Ababa, Ethiopia, 1974.
14. Imperial Ethiopian Government, Ministry of Agriculture. "Fertilizer and Variety Trials and Demonstrations in Ethiopia, 1972-73." Addis Ababa, Ethiopia, 1973.
15. Imperial Ethiopian Government, Ministry of Agriculture. "Minimum Package Loan Application to IDA/IBRD." Addis Ababa, Ethiopia, 1972.
16. Imperial Ethiopian Government, Ministry of Agriculture. "A Proposal for the Pulse Diversification and Export Promotion Program." Addis Ababa, Ethiopia, 1974.
17. Imperial Ethiopian Government, Ministry of Agriculture. "Some Reflections on the Preparation of the Agricultural Sector Plan for the Fourth Five-Year Development Plan 1974-1978." Addis Ababa, Ethiopia, 1972.
18. Imperial Ethiopian Government, Planning Commission Office. "Draft Strategy Outline for the Fourth Five-Year Plan, 1974-1978." Addis Ababa, 1972.
19. International Bank for Reconstruction and Development. "Agricultural Sector Survey: Ethiopia," Vol. I: The General Report and Statistical Annexes, Washington, D.C., 1973.
20. International Bank for Reconstruction and Development. "Agricultural Sector Survey: Ethiopia," Vol. II: Annexes 1-11, Washington, D.C., 1973.
21. International Bank for Reconstruction and Development. "Agricultural Sector Survey: Ethiopia," Vol. III: Annexes 12-23, Washington, D.C., 1973.
22. International Bank for Reconstruction and Development. "Appraisal of the Upper Regional Development Project, Ghana." Washington, D.C., 1976.
23. Karsk, Roger S., John M. Lovorn and Eugene C. Schroepfer. Assessment of Small Farmer Credit in Ghana (Recommendations for Implementing a Small Farmer Credit Program through the Agricultural Development Bank in Ghana). Accra: USAID Mission to Ghana, May, 1975.

24. Lele, Uma. The Design of Rural Development: Lessons from Africa. (A World Bank Research Publication) Baltimore: John Hopkins University Press, 1975.
25. Leith, J. Clark. Foreign Trade Regimes and Economic Development: Ghana. (A Special Conference Series on Foreign Trade Regimes and Economic Development, Volume II.) New York: National Bureau of Economic Research, 1974.
26. Mississippi State University, The Seed Technology Laboratory. "Seed Program Development in Ghana." Jackson, 1974.
27. Practical Concepts, Inc. "Project Design and Evaluation Concepts: The Logical Framework Approach; Reference Materials." Washington, D.C., 1972.
28. Russell, Darrell A., Robert D. Grisso and Robert G. Lee. Fertilizer Alternatives for Ghana. Bulletin Y-46, Muscle Shoals, Alabama: National Fertilizer Development Center, Tennessee Valley Authority, March, 1973.
29. Stolper, Wolfgang. "Planning without Facts: Lessons in Resource Allocation from Nigeria's Development." Cambridge, Mass.: Harvard University Press, 1966.
30. United Nations, Food and Agriculture Organization. "Increased Farm Production through Fertilizer Use, Ghana," Vol. I: Agonomic Experimentation and Extension Work in the Volta, Central, Ashanti and Brong Ahafo Regions. Rome, 1974.
31. U.S. Agency for International Development. "Development Assistance Program FY 1976-80 Ghana; Volume II; Part III Sector Summaries and Special Statements." Washington, D.C., 1975.
32. U.S. Agency for International Development. "District Planning and Rural Development Project, Ghana." Project Review Paper, Accra, Ghana, 1976.
33. U.S. Agency for International Development. "Ghana Managed Input Delivery and Agricultural Services Program." Project Paper, Accra, Ghana, 1976.
34. Waterston, Albert. Development Planning: Lessons from Experience. Baltimore: John Hopkins University Press, 1965.
35. Winch, Fred and Michael Fuchs-Carsch. Ghana Agricultural Sector Assessment. Accra: USAID Mission to Ghana, January, 1975.

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