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Reconnaissance of A.I.D.'s Experience with Capital Projects

Prepared for:

POL/CDIE/E
The United States Agency for
International Development

Under Contract Number PDC-0000-C-00-8029-00

LABAT-ANDERSON Incorporated
2200 Clarendon Boulevard, Suite 900
Arlington, Virginia 22201

Prepared by:

Donor M. Lion
Senior Executive Associate

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Preface

CDIE is undertaking an evaluation of A.I.D.'s experience with capital projects. One of the purposes of this evaluation is to learn more about the effectiveness of capital projects in contributing to: (1) Third World economic development while (2) also promoting U.S. exports. This first phase report, "Reconnaissance of A.I.D.'s Experience with Capital Projects," aims at establishing a framework for the remaining two phases of the evaluation. They, in turn, will involve field work and a more in-depth analysis of some 20 to 50 capital projects. The findings from the full evaluation will help A.I.D. to develop a strategy, a plan and guidelines for expanding its capital projects portfolio in a manner consistent with its development and export objectives.

This renewed capital projects thrust is driven by several forces. These include Congressional and other interests in using the foreign assistance program to promote U.S. exports, the belief that A.I.D.'s declining capital projects portfolio is not consistent with an optimum development strategy and the wish to mount an effective competitive response to other major donors whose capital project financing is substantially greater than ours (as a percent of bilateral assistance).

The full evaluation is to be completed by early 1992.

The consultant here acknowledges, with appreciation, the valuable assistance of Ms. Janice Stallard, Research Analyst, CDIE/DI, the guidance and collaboration of Mr. Joseph Lieberson, CDIE, and the helpful interchanges with A.I.D.'s Capital Project Committee, chaired by Mr. Fred Zobrist.

Executive Summary

Definition

"Capital projects" are defined in development terms, reflecting A.I.D.'s essential *raison d'etre*, as well as Congress' expressed interest in "developmentally sound" capital projects. Because "development" is inseparable from the meaning of capital projects, it is suggested that the phrase *"capital development projects"* be used. The conventional phrase, "capital projects," seems to convey to many people what could be described as "hard core infrastructure," traditionally limited to the transportation, communication, and power sectors.

Accordingly, the following definition is proposed:

> *A capital development project supports economic and social development and involves the development, replacement or rehabilitation of physical assets and/or one or more of several activities relating to those assets, such as feasibility work, engineering, procurement, training, technical assistance, maintenance and operational support, and institutional development.*

This definition is consistent with the definition offered by Senator Max Baucus of Montana.

It should be noted that several project characteristics are *not* made a part of the definition: size, level of technology, project length, or method of financing.

Hypotheses

The second of Phase I's three tasks is to identify "5-8 hypotheses used to justify capital projects." Seven were identified. Most of these hypotheses set forth a causal linkage between the projects and particular development impacts. Two link capital projects to U.S. exports. The seven hypotheses follow.

1. Capital development projects can significantly help to overcome important sectoral bottlenecks.

2. Capital development projects can effectively support or help to leverage policy reform, especially at the sector and subsector levels.

3. Capital development projects can leverage financial resources, including funds from host governments, other donors, other U.S. Government agencies, and the private sector.

4. Capital development projects can promote U.S. exports directly and can also generate follow-on U.S. exports.

5. Capital development projects can leverage non-U.S. financial resources for U.S. procurement.

6. Capital development projects can help to alleviate unemployment and/or improve the quality of life or otherwise contribute to Basic Human Needs goals.

7. Capital development projects can help to strengthen LDC private sectors.

A.I.D.'s funding of capital development projects is usually associated with contributions from the host government. This fact points to an aspect of these projects that is not always articulated, namely the impact of capital development projects on LDC public sector investment budgets. A.I.D.'s influence on the allocation and re-allocation of host country resources toward more developmentally sound purposes is one of the ways A.I.D. advances its policy reform agenda.

Project List

Some 50 projects were selected that reflect the identified hypotheses. Although size, project length, level of technology, and method of financing were not used as initial project selection criteria, the list represents a cross-section of A.I.D.'s experience with these project characteristics. The list contains projects from all of A.I.D.'s regions, including more than 20 countries, and covers a broad spectrum of sectors, consistent with the definition of capital development projects. See Exhibit 2, p. 11–13, Chapter IV.

Although much can be learned from A.I.D.'s experience with its capital development project portfolio, one should recognize that A.I.D.'s past 25 years are less than fully applicable to Central and Eastern Europe, which appears to be a target of special Congressional interest, as well as of A.I.D.'s intentions, for capital development activities.

Recommendations

The report's five recommendations, elaborated upon in Chapter V, follow:

1. Phases II and III, originally planned to be undertaken sequentially, should be combined.

2. The Scope of Work should be broadened to include a focus on lessons learned from A.I.D.'s capital projects experience.

3. A.I.D. should examine the World Bank's experience with capital projects in Central and Eastern Europe.

4. A.I.D. should broaden its analysis of the human resource implications of an expanded capital projects portfolio.

5. Phases II and III (or their combination) should include an effort to examine the impact of capital projects, financed bilaterally and in concert with others, on post-project U.S. exports.

CHAPTER I

Conceptual Framework

1. Components of the Evaluation

The study will consist of three phases. Phase I involves three tasks:

(1) Development of a working definition of "Capital Projects" and a conceptual framework for the analysis;

(2) Identification of 5-8 hypotheses used to justify individual capital projects with an emphasis on the linkage between capital projects and development; and,

(3) Identification of some 20-50 projects that reflect the identified hypotheses.

Phases II and III will involve detailed appraisal of these projects—Phase II to be conducted in Washington, Phase III to be implemented largely with and in the field.

2. Premise Underlying the Working Definition and the Identification of Hypotheses

The underlying premise is that A.I.D. can, and intends to do more to promote national trade interests, but without sacrificing its quintessential mandate, namely to promote development. Holding fast to its mandate is not simply a manifestation of a stubborn bureaucracy afraid of, or unwilling to change. As stated in a Department of Commerce study,[1] "A.I.D.'s core mission of helping the developing countries is an integral part of U.S. foreign economic policy." Therefore, unless or until that mission is changed, development goals are the primary shapers of A.I.D. assistance. The definition of capital projects and the identification of the hypotheses should reflect that premise.

3. Factors Affecting the Identification of Projects for Analysis in Phases II and III

Criteria for identifying capital projects for further study include representation of A.I.D.'s geographic regions and coverage of critical industrial and functional categories. In addition, projects should be identified which relate to the identified hypotheses and provide a basis for assessing project impact on development and exports.

It would obviously be helpful if every potential project to be studied were accompanied by useful evaluation documents. But projects in A.I.D.'s early years were not as carefully evaluated as is current practice. Nevertheless, the older projects offer a possible offsetting advantage, namely, that time will have passed after project completion to permit a fuller analysis of project impact. The absence of evaluation

[1] "International Financing Programs and U.S. International Economic Competitiveness," U.S. Department of Commerce, International Trade Administration, September 20, 1990, p. 25.

and related documentation, at least in AID/W, suggests the following: Phase I will rely to some degree on anecdotal identification of projects which should be further studied, based on interviews with on-board and retired A.I.D. personnel; Phase II can help confirm or reject these projects based on queries to the field; and, Phase III will involve some original field research and data-gathering on whatever of the older projects remain on the identified list. Ultimately, the final list of projects to be analyzed in some detail will take into account the feasibility of undertaking additional analysis. Is there adequate documentation? Is the project area accessible?

4. The Final Phase I Project Matrix

The projects identified for further study will:

- Reflect the identified hypotheses;
- Cover a variety of sectors including "hard core" as well as "social" infrastructure;
- Include "projects" which are representative of activities which support the development, replacement or rehabilitation of physical assets;
- Cover AID's geographic regions;
- Cover more than one country from each region; and, if possible,
- Cover a range of projects from ones long since completed to those completed in the last several years.

5. The Phase I Final Report

The Phase I final report will present: (1) the proposed conceptual framework for the overall study; (2) the definition of capital projects; (3) the list of hypotheses; (4) a list of projects to serve as case studies including projects which were recommended in the interviews (some of which may drop out during Phases II and III); and (5) recommendations for the Phase II Scope of Work.

CHAPTER II

Definition of Capital Projects

1. Capital Projects, Development, and Exports

Along with their explicit emphasis on the relationship between capital projects financing and exports, members of Congress have underscored the importance of the development objective of A.I.D. financing. They see foreign assistance as a tool to pursue development and trade/investment objectives. For example, the Lieberman bill ("A.I.D. Trade and Competitiveness Act of 1991") states that its purpose is to develop an A.I.D. program that would focus on "developmentally sound" capital projects, taking into consideration the export opportunities of U.S. firms. Reference is made in the bill to the "standard criteria of the DAC" in defining "developmentally sound" capital projects. These criteria are virtually congruent, even if somewhat more general, with the development screen employed by A.I.D. project selectors, designers, reviewers, and evaluators.

A.I.D.'s interest in expanding its capital projects portfolio also reflects a variety of factors, including its "Partnership for Business and Development Initiative." A.I.D.'s documentation dealing with its analysis and preparation of an expansion in capital projects places primary emphasis on its development mandate while underscoring more heavily than in the past the importance of promoting U.S. trade and investment interests.

It follows from the foregoing that the definition of capital projects should encompass project[2] activities which relate to A.I.D.'s fundamental mission—development—while being hospitable to and supportive of the objective of export promotion. Thus, the development aspect is inseparable from the meaning of capital projects. The essential linkage to development suggests the phrase "capital development projects," to promote a broader understanding of this activity than is frequently brought to mind by the more conventional phrase "capital projects."

2. The Semantic Scene

One of the sources of differences among the definitions of capital projects is the frequent use of the word "infrastructure" as a synonym for capital projects. For example, the BBBB bill defines "capital projects" as projects in economic infrastructure (underlining added). The definitional issue is further muddied by the use of such phrases as social infrastructure, research infrastructure, intellectual infrastructure, legal infrastructure, and so forth. Apparently, there is no consensus on a single definition of either "infrastructure" or "capital projects." One effort to clarify the discussion is reflected in the use of the phrase "hardcore infrastructure," usually meant to refer to the transport, communications, and power sectors. Most definitions of capital projects include "hardcore infrastructure" as a minimum and differ only

[2]A.I.D.-financed nonproject activities also can, in varying degrees, combine development/trade/investment purposes and impacts—for example, CIPs, cash transfers. However, to minimize definitional ambiguities and semantic quarrels, the preliminary working definition will confine itself to projects. At a later stage or in a separate study, CIPs and/or other A.I.D. instruments can be examined. In any case, exclusion from the definition of capital projects most certainly does not preclude the Agency and its Missions from employing CIPs and/or other instruments, as discrete activities or as an element of a set of capital project activities.

in the number of other sectors or activities they encompass (for example, schools, sewage systems, clinics) and/or in the extent to which they include activities which support, supplement, enhance, or otherwise are associated with capital projects (for example, training, operations and maintenance assistance, technical assistance, institutional development, engineering services, and so forth).

A useful approach draws on Fred Zobrist's material: a capital project involves "the development and replacement or rehabilitation of physical assets." He amplifies this by including in his definition any of the supportive activities designed to contribute to "development, replacement, or rehabilitation of physical assets," including those listed in the foregoing paragraph.

The Zobrist definition reflects the Agency's experience and the recognition that an expansion of capital projects will require an expansion of a range of assistance activities, including the traditional phases of capital projects (feasibility studies, engineering, construction/procurement, and start-up training) as well as such activities as master planning, institutional support and program/project management. This appreciation has implications for a spectrum of U.S. exports in the commodity and service sectors, as well as for the kinds of in-house talent A.I.D. will require to support an expansion of its capital project portfolio.

3. Proposed Working Definition of Capital Development Projects

The typical capital development project supports economic and social development in developing countries through a mix of several activities, some undertaken successively, some simultaneously, as follows:

- Development, replacement, or rehabilitation of physical assets, involving feasibility work, engineering, construction, commodity procurement, and training; and, directly related to the foregoing,

- Institutional development, involving technical assistance, training, program/project management, maintenance and operational support, and planning.

Thus, a "capital project" encompasses any or all of the above. As indicated, it usually involves several activities, a kind of capital development program. It may also be one activity, for example, a feasibility study. To illustrate, in 1985/86, USAID/Pakistan financed a feasibility study in the power sector; two years later, the World Bank financed a major power loan based on the analysis and rehabilitation plan produced by that feasibility study.

The foregoing definition is very much in line with the following definition suggested by Senator Max Baucus of Montana:

> The construction, expansion, alteration or equipment of a physical facility, including engineering or other services; the procurement of equipment, including any related services; and feasibility studies or similar engineering and economic services, when carried out in conjunction with a capital project.

Definitional Amplifications. Some definitions of capital projects stress their large size and their association with a high level of technology. The proposed working definition does not require that there be specific size or level of technology criteria. The "developmentally sound" screen has a different mesh in each developing country. It is for the program and design officials to determine how large and technologically advanced a capital project should be.

Similarly, project timing or length should not be a part of the definition. There are long-term, medium-term, and short-term capital projects.

Capital projects can be financed in several ways. The working definition should not exclude projects on the basis of their mode of financing.

Caveats. A.I.D.'s selection of capital development projects in the past presumably reflected the application of its standard development screen. Although the Agency has always been aware of U.S. trade (and investment) interests, it is suggested that the new emphasis on capital projects will place greater stress than in the past on these interests. To some extent then, the past record may not serve as a fully useful guide as to the effectiveness of capital development projects in promoting trade and investment interests, given that these interests were less than primary among A.I.D.'s goals. To put it another way, the new capital development projects initiative may very well call for a somewhat different mix or portfolio of capital development projects from what has been A.I.D.'s past experience.

The current and prospective priority of Central and Eastern Europe in A.I.D.'s programming suggests another caution when drawing lessons from the Agency's past experience. The Third World has been the center of A.I.D.'s (and its predecessor's) operations—except for the Marshall Plan. Given the very different setting in Central and Eastern Europe, compared to the Third World, conclusions as to the impact of capital projects based on A.I.D.'s past experience will have less than full applicability to Central and Eastern Europe. Although there are institutional obstacles to development in this region, it is possible that capital development projects in Central and Eastern Europe will reflect a different balance between development and U.S. export objectives than has been A.I.D.'s practice in the past.

Summary. To iterate, *a capital development project supports economic and social development and involves the development, replacement or rehabilitation of physical assets and/or one or more of several activities relating to those assets, such as feasibility work, engineering, procurement, training, technical assistance, maintenance and operational support, and institutional development.*

CHAPTER III

Selected Hypotheses Undergirding Capital Development Projects

As indicated in the Scope of Work (Annex A), the second of Phase I's three tasks is to identify "5-8 hypotheses used to justify capital projects." These hypotheses are selected because they involve some of the most significant development impacts A.I.D. seeks to bring about. They set forth a causal connection, a linkage, between the project and particular development achievements. Future capital development projects will reflect comparable development outputs; a review of the past will help in the design of the expanded portfolio. Because of the enhanced importance of relating these projects to U.S. trade interests, two of the seven hypotheses below link capital projects to U.S. exports. See Exhibit 1.

1. Capital development activities can significantly help to overcome important sectoral bottlenecks.

There is no dispute as to the need for capital projects to accelerate development and/or stimulate growth, for example, in energy, transportation, communications, environment and in the social sectors. Issues arise when considering whether or not A.I.D. should respond to the infrastructure constraint, as opposed to other donors. Another issue might be whether or not a particular capital development project is the best use of A.I.D.'s resources when compared with alternative development interventions. The pervasive condition of limited resources requires choices among alternative development interventions. An A.I.D. Mission may decide on a package of resource transfers to support price policy reform rather than to construct primary and secondary schools or health clinics; it may decide, in coordination with other donors, to leave a specific capital development project to another donor and emphasize technical assistance to strengthen the Ministries of Planning, Finance and Development. This hypothesis asserts that developmentally sound capital projects can help A.I.D. to carry out its strategy with respect to mitigating or eliminating sectoral bottlenecks to development and growth.

2. Capital development activities can effectively support or help leverage policy reform, especially at the sector and sub-sector levels.

A.I.D. has always been in the policy reform business, in one way or another. Even in the 1960's, for example, the sector loan was used by A.I.D. as an instrument to encourage policy change and tranches of the loan were frequently conditioned on policy performance. More recently, the cash transfer has been employed to bring about policy reform especially at the macro-economic level. Historically, the Agency has used a variety of project and program instruments to encourage policy reform; capital development projects have been among them.

Host government contributions are ordinarily associated with A.I.D.'s funding of capital development projects. In effect, this usually means that A.I.D. has influenced the host government's investment program for one or more years—a situation which implicitly relates to the policy arena. Modification of a national investment budget, or a budget which is different from what it would have been, could reflect a significant policy modification. One of A.I.D.'s development operational goals, in fact, is to cause LDC's to modify these human and financial resources allocations toward more developmentally sound purposes. This aspect

Exhibit 1. List of Hypotheses Undergirding Capital Development Projects

1. Capital Development Projects can significantly help to overcome important sectoral bottlenecks.

2. Capital Development Projects can effectively support or help to leverage policy reform, especially at the sector and sub-sector levels.

3. Capital Development Projects can leverage financial resources including funds from host governments, other donors, other U.S. government agencies and the private sector.

4. Capital Development Projects can promote U.S. exports directly and can also generate follow-on U.S. exports.

5. Capital Development Projects can leverage non-U.S. financial resources for U.S. procurement.

6. Capital Development Projects can help to alleviate unemployment and/or improve the quality of life or otherwise contribute to Basic Human Needs goals.

7. Capital Development Projects can help to strengthen LDC private sectors.

of policy reform which accompanies the majority of A.I.D.'s activities, including capital development projects, is too often overlooked.

3. Capital development activities can leverage financial resources, including funds from host governments, other donors, other U.S. Government agencies, and the private sector.

This attribute of capital development activities is more likely to be seen where host countries are benefiting from assistance from many sources and where assistance coordination is real rather than rhetorical. Although co-financing or joint financing is more complex than single donor funding, the size of a project may require multi-donor funding or the components may lend themselves to preferred financing from particular donors. As indicated above, host governments generally contribute resources to capital projects. Whether an A.I.D.-funded capital development activity directly involves a physical asset, it usually requires or eventually stimulates host government financial inputs.

4. Capital development activities can promote U.S. exports directly and can also generate follow-on U.S. exports.

Although in the long run the best way to stimulate U.S. exports to A.I.D.-assisted countries may well be to foster their economic growth, and although there are other non-project assistance vehicles which may be more efficient than capital development projects in promoting U.S. exports in the short term (CIPs for example), capital development projects obviously present opportunities for U.S. exporters of goods and services. For certain types of projects, these opportunities could extend to follow-on exports, for example, spare parts and replacement materials and equipment.

5. Capital development projects can leverage non-U.S. financial resources for U.S. procurement.

One scenario in which non-U.S. financial resources can be leveraged to procure goods or services from the U.S. is the situation where international financial institutions fund projects which spring from U.S. capital development activities, for example, feasibility studies. Another scenario could occur if, in a multi-donor situation, procurement was open to international competition.

Although this hypothesis can be taken to refer only to the leveraging of other donor resources, it should be noted that host government recipients, as discussed under hypotheses 2 and 3, contribute resources, frequently financial, to A.I.D. capital development projects.

6. Capital development projects can help to alleviate unemployment and/or improve the quality of life or otherwise contribute to basic human needs goals.

A.I.D. activities, including capital development projects, in one way or another, are intended to promote the enhancement of the lives of host country populations. This objective may be indirectly achieved, or may take a long time to be realized, but it may also be a concrete and visible output even before the project is completed. The linkage between capital development activities and A.I.D.'s objectives is described in a recent A.I.D. project document, as follows: The lack of capital investment "is a primary obstacle to economic growth in most developing countries. Basic Human Needs, the availability of clean water, sewerage, foodstuffs and accessibility to jobs, health and education all need infrastructure to be effective. There is a need for basic infrastructure to increase economic growth and to improve the quality of life."[3]

7. Capital development projects can help to strengthen LDC private sector.

Most capital development projects which benefit the private sector in the developing world have done so indirectly, namely, by strengthening public sector economic infrastructure—roads, ports, power, communication, and so forth. However, these and other capital development projects may also directly support LDC privatization. A.I.D.'s programming themes for the 1990's which include emphasis on privatization could provide the Agency with increased opportunities to enlarge its capital development portfolio in Central and Eastern Europe as well as in the Third World.

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[3]New Project Description for FY 1993, "Capital Projects Sector Assistance Program," October 10, 1991, A.I.D.

CHAPTER IV

The Project Matrix

The Scope of Work called for the identification of 20-50 projects that reflect the hypotheses. Following the application of a series of screenings, some 50 projects were identified, as shown in Exhibit 2 on the next page.

Each of the four regions are represented with at least 8 projects. Depending upon how one defines sectors, at least 8 sectors are also represented, namely transportation (roads, ports), energy and power, agriculture (including irrigation), health and sanitation (including water/sewage), with education, tourism, industry, and housing accounting for some 10 percent of the total. As might be anticipated, most of the projects fell in the categories of transportation, energy and power, and health and sanitation.

Some three-quarters of the projects required more than 5 years to complete, with almost half in the 6-9 year range. One-third took 10 years or more.

All of the projects were linked to more than one hypothesis. The indication of the hypothesis-project linkage was somewhat arbitrary, although an effort was made, based upon the CDIE database, to reflect the primary hypotheses which the projects reflected. Additional analysis in Phases II and III, when the actual project documents will be studied, will generate more definitive information on project impact. Clearly, projects were undertaken by A.I.D. to accomplish results which would benefit LDC populations. And all projects were initiated to overcome sectoral or subsectoral constraints. Accordingly, hypotheses 1 and 6 are most often represented. Based on the consultant's experience, reinforced by the interviews, the CDIE database tends to understate the policy impact of A.I.D.'s project history. For much of this history, the Agency and its field missions sought to bring about policy change at the sectoral and subsectoral level, but the Agency's description of its work tended to emphasize other aspects of change and development. Policy reform in some people's minds related only or largely to macro policy which A.I.D. was inclined for much of its history, to leave to the IMF and World Bank.

In addition, A.I.D.'s project documentation tended to focus more on such objectives as Basic Human Needs than on the policy measures necessary to achieve these objectives. During the last decade, policy reform became fully recognized as indispensable to A.I.D.'s development objectives and the Agency's documentation more accurately reflected its policy-oriented activities. For these and other reasons, a complete picture of A.I.D.'s policy impact, at all levels, does not readily emerge from the database covering the last 25 years.

Hypothesis number 4, which refers to follow-on exports, requires post-project analysis which Phase I is not intended to undertake. Also, the leveraging of non-U.S. financial resources for U.S. procurement (hypothesis 5) calls for the kind of research and analysis that the database was not designed to reflect. Phases II and III can look into these areas if more information on these linkages is deemed important.

As would be expected, all projects in CDIE's database are not identically described. The extent of project documentation differs among projects. The scope and quality of project reports and evaluations also vary among projects. Thus, comparative analysis must necessarily be imperfect. The analyst looks to Phases II and III to remedy at least some of the data gaps.

Exhibit 2. Projects Identified for Phase II and Phase III Analysis

Region and Country	Title	Project Period (FY)	Amount (millions)	Hypotheses*
Africa				
Botswana	Shashi (Mining)	71-75	6.4	3,7
Burkina Faso	Rural Water Supply	79-87	13.5	1,6
Ethiopia	Highway Equipment Repair Facilities	70-75	4.2	1,6
The Gambia	River Basin Development	81-91	15.9	1,4
Lesotho	Rural Water/Sanitation	79-89	12.1	1,6
	Southern Perimeter Road	77-87(?)	40.0(?)	1,6
Malawi	Lake Shore Road	66-74	6.9	1,4
Somalia	Kismayo Port Rehabilitation	82-92(?)	42.0	1,2,3
Southern Africa Region OSARAC				
#6900006	Botswana-Zambia Road Construction	73-38	16.8	1,5,6
#6900231	Zambia Railways	90-91	15.8	1,2,3,6
#6900240	Tanzania-Zambia Railways	87-94	46.0	1,2,3,6
Sudan	Rahad Irrigation	73-79	11.0	1,3,6
Togo	Rural Water Supply and Sanitation	80-89	11.7	1,3,6
Zimbabwe	Zimbabwe Shelter Project	80-87	50.7	1,2,6
Asia				
Bangladesh	Rural Electrification	77-80	103.3	1,6
	Fertilizer Improvement	78-88	237.0	1,2,7
India	Rural Electrification	79-87	58.0	1,6
Indonesia	Semarang Steam Power Station	71-80	19.7	1,4,6
Pakistan	Energy Planning and Development	83-93(?)	145.0	1,2,3,4,5,6
	Guddu Combined Cycle Power Plant	85-94	180.0	1,2,3,5
	Irrigation Systems Management	83-93(?)	205.0	1,2,3
	Private Sector Power	88-93(?)	170.0	2,3,7
Philippines	Bicol Integrated Development II	78-85	5.1	2,6
	Provincial Water	74-80	14.8	2,6
Sri Lanka	Mahaweli Basin Development (Accelerated Program)	81-91	110.0	1,3,6,7

Exhibit 2. Projects Identified for Phase II and Phase III Analysis (Continued)

Region and Country	Title	Project Period (FY)	Amount (millions)	Hypotheses*
Latin America and Caribbean				
Bolivia	Rural Electrification II	74-80	10.7	1,6
Dominican Republic	Education Sector	78-84	7.5	1,6
	Rural Roads Maintenance and Rehabilitation II	83-90	27.1	2,6
Honduras	Agricultural Credit and Storage	69-76	9.5	1,6
	Rural Trails and Access Roads	80-87	21.7	1,6
	Rural Water and Sanitation	80-88	21.2	3,6
Peru	Health and Environmental Sanitation	80-89	11.0	1,6
Rocap-Guatemala	Tourism Infrastructure	73-80	13.4	1,7
Near East				
Egypt	Agricultural Canal Reconstruction and Maintenance	77-83	31.2	1,4,5
	Cairo Sewage	78-88	129.0	2,6
	Cairo Water System	77-89	127.4	1,2,6
	Electric Distribution System	75-80	30.0	1,6
	Irrigation Management System	81-95	340.0	1,2
	Low Income Housing/Community Upgrading	78-88	130.0	2,6
	Quattamia Cement	78-88	100.0	1,2,7
	Shoubrah El Kheima Thermal Power Plant	79-91	263.0	1,2(?),3,5
	Technical and Feasibility Studies	78-86	43.0	1,3
	Urban Low Cost Health Delivery	78-88	45.6	2,6
Jordan	Jordan Valley Village Development	78-82	8.0	2,6
Oman	School Construction	83-88	37.5	1,6
Tunisia	National Low Cost Shelter Program	79-83	65.0	1,6
	Potable Water System (subprojects)	79-89	29.6	2,6
	Rural Development Roads	77-81	6.4	1,6
Yemen	Water/Sewage Construction	77-85	27.4	3,6
Multi-Regional				
Development Support	Private Sector Energy Development	89-92	14.8	1,7

*See Exhibit 1 for a description of the hypotheses.

CHAPTER V

Recommendations

1. Phases II and III, originally planned to be undertaken sequentially, should be combined.

To the extent that this study could be useful to A.I.D. in its preparations for expanding its capital projects portfolio and in its work with Congress on legislation relating to capital projects, it makes sense to complete it as soon as possible. Unless resources prevent accelerating the study, there is no reason not to combine the projected additional Washington-based and field research and analysis.

2. The Scope of Work should be broadened to include a focus on lessons learned from A.I.D.'s capital projects experience.

The demonstration that capital projects can contribute to development and growth is a useful exercise. Basically, however, that is not what is at stake. The issue is what kind and size of expanded portfolio should the Agency mount. Fortunately, CDIE's database contains valuable evaluative material which can be readily drawn upon to systematically analyze the anatomy of past capital project performance—the Agency's successes as well as results which have been less than optimum. The projects identified in Phase I for additional study are a good representation of what the Agency has undertaken, sectorally, geographically, in terms of size and financing, and in terms of coordination with other donors.

A lessons learned component of the combination of Phases II and III is consistent with CDIE's mandate and would serve those relatively new to capital development projects as well as those who have continued to work in this area. These lessons could contribute to the Agency's planning, strategy, and guidelines for its expanded capital projects thrust.

3. A.I.D. should examine the World Bank's experience with capital projects in Central and Eastern Europe.

A.I.D. will be dedicating substantial resources to capital projects in Central and Eastern Europe. The World Bank has been active in parts of that region for several years. A review of its experience could prove extremely valuable to the Agency which, of course, has no history of capital project activity in that part of the world.

4. A.I.D. should broaden its analysis of the human resource implications for A.I.D. of an expanded capital projects portfolio.

Planning for growth in the capital projects area has been under way in the Agency for some time. For example, the staffing of the projected Capital Projects Office has been thoughtfully considered. The emphasis, clearly sound, appears to be on the need for engineers and financial and project development officers.

It is evident from A.I.D.'s experience that a wide range of skill areas and disciplines is required to properly design and implement capital projects—for example, management, the environment, economists and other social scientists. Although the Agency can contract for the additional know-how it may need

in these areas, it may be useful to consider what arrangements, if any, are needed for direct hire staff in some of these skills and disciplines.

5. Phases II and III (or their combination) should include an effort to examine the impact of capital projects, financed bilaterally and in concert with others, on post-project U.S. exports.

A.I.D.'s project evaluations and other components of its database are not designed to generate information on the impact of capital projects on post-project U.S. exports. What information exists on this phenomenon is essentially anecdotal and impressionistic. It may be important, however, to acquire a more complete understanding of this subject, both for the Agency's project designers and implementers and for Congress, which would welcome more information on this subject. To initiate a database on post-project U.S. exports, the Agency could canvas selected companies that supplied past capital projects to determine what follow-on goods and services occurred. Other donors, especially the international financial institutions with which A.I.D. jointly financed capital projects, could also be contacted. Information on U.S. exports to A.I.D. recipients exists in other U.S. agencies, for example, the Department of Commerce and State Department (U.S. Embassies).

In any case, the Agency should attempt to acquire this information more systematically, for example, by requiring field missions to follow up on this question after project completion.

ANNEX A

Scope of Work for an Evaluation of A.I.D.'s Experience with Capital Projects

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SCOPE OF WORK FOR
AN EVALUATION OF A.I.D.'s EXPERIENCE
WITH CAPITAL PROJECTS

In the 1950s and 1960s U.S. economic assistance programs included major funding of capital projects. This continued into the 1970s, but with the advent of the Basic Human Needs approach, capital projects declined. In the last year there has been renewed interest in capital projects including proposals to establish a capital projects fund, a mixed credit facility, and other trade related programs. A.I.D. and its predecessor organizations have been doing capital projects for over 40 years and it would be useful to examine A.I.D.'s previous experience with capital projects before launching a new effort.

The objective of this study is to examine A.I.D.'s experience with capital projects in order to judge their effectiveness in promoting economic development in the Third World, while also promoting U.S. trade interests. The findings from this study will help A.I.D. plan future capital project programs. The evaluation study will complete three tasks:

1. Develop a working <u>definition</u> of "Capital Projects" and a conceptual framework for the analysis.

2. Identify approximately 5-8 <u>hypotheses</u> used in justifying individual capital projects

3. Identify 20-50 projects that reflect those hypotheses

1. Definition

The first part of this phase of the study will be the development of a definition of "capital projects". A definition is important, since it insures that we are all talking about the same issue. Within A.I.D. there are many different ideas of what a "capital project" includes. The following types of projects illustrate the range of projects that could be included or excluded from the definition: physical infrastructure (such as roads, irrigation, and electric power); commercial investments (a cement plant, or fertilizer plant); industrial and agricultural machinery (tractors, computers, or a drill-press); industrial imports (such as capital goods under a CIP); the plant and equipment for an aid project (buildings for a health or agriculture project); mixed-credits (trade credits designed to match financing offered by other countries).

2. Hypotheses

The hypotheses will be the basis for judging the value and impact of various capital projects. They represent the assumptions concerning impacts, benefits and linkages used to justify capital projects. An internally consistent listing of those hypotheses is necessary to help judge the effectiveness and performance of capital projects. There is a cross-linkage between the hypotheses and the definition (#1 above) since the definition will be determined in part by the choice of hypotheses or assumptions used to justify, or make the case for "capital projects".

3. Identify Projects

Once the definition and hypotheses are developed it will be possible to identify 20-50 projects that reflect the hypotheses, have sufficient documentation or other information sources, cover all A.I.D. geographic regions, include critical industrial and functional categories, and therefore will make good case studies for in-depth analysis in the second phase of this study.

B. The Analysis Process

Periodic consultations and meetings between the analyst and A.I.D. will provide the suggestions and feedback on how to structure the analysis. The analyst will begin by broadly reviewing the literature, current legislation, and other donor/agency experience with capital projects and by meeting with an A.I.D. steering committee to be established to advise on this evaluation assessment. Based on this review and the analyst's own expertise and knowledge, the analyst will establish a working definition of "capital projects" (i.e., the types of projects, commodities, and interventions to be included) and develop a preliminary conceptual framework for the assessment of capital projects. The draft framework would begin to clarify the objectives these projects are assumed to affect, delineate the linkages between interventions and outcomes, and identify potential measures/indicators for tracking performance.

Based on this preliminary framework, the analyst will then develop a list of 5-8 key hypotheses or assumptions that will be useful for focusing the analysis of project performance on the primary intended impacts and priority issues. For example, the following list illustrates some possibilities.

1. Capital projects can affect policy change through specific conditionality.

2. Capital projects directly and indirectly (through "additionality") support U.S. exports of goods and services.

3. Capital projects can leverage other donor (investor) participation.

4. Mixed credits are a useful development tool.

5. Capital projects should concentrate on areas where the U.S. has a technological edge over other countries. (Alternative; is U.S. capital investment technology appropriate to the needs of LDCs?)

6. A capital project strategy can have a positive impact on Basic Human Needs.

7. If structured properly, capital projects can be quick disbursing.

8. Infrastructure investments have a high economic rate of return, and may be the most critical investments for an LDC.

9. Capital projects, and in particular infrastructure, support LDC, private sector-led growth.

10. The U.S. benefits from aid that finances U.S. exports. A capital projects program will help increase public support for foreign aid and for higher aid budgets.

11. Capital projects can generate major benefits for the poor in LDCs.

12. Capital projects can be selected on the basis of their importance for an LDC's development rather than being driven by U.S. export interests.

13. Effective management and maintenance of capital projects is a major determinant of sustainable development. Sustainability requires significant development of host country institutions to support the capital projects.

The next stage will involve a series of 20-30 key informant interviews with current and past Agency managers who were involve with capital projects. The interviews may also include several non-A.I.D. individuals in other agencies involved in capital projects. The analyst will structure the

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interview discussions around the key hypotheses, obtaining the key informants' perspectives on the validity of the hypotheses, and solicit examples of projects that illustrate their points.

The analyst will also review the design and evaluation documentation for some 300-500 completed A.I.D. capital projects. CDIE will provide the list of documents. The analyst's task will be to examine each project, to see whether or not the available documentation sufficiently addresses the project's performance and outcomes as they relate to hypotheses under investigation. The analyst will identify 20-50 projects which are suitable for in-depth examination in the second phase of this work.

During the course of the study, the analyst will meet on a periodic basis with CDIE to discuss findings. At the end of the study the analyst will develop findings into a presentation or briefing for A.I.D. personnel and in a final report of approximately 25 to 50 pages. The report will present: (1) the conceptual framework, (2) the final list of hypotheses, (3) a list of projects to serve as case studies (with the rationale for the selection of the projects), and (4) recommendations for The Phase II Analysis. The main report should be approximately 20 pages long, have an executive summary of no more than 5 pages, a bibliography, and a listing of all projects that were selected.

WORK DAYS REQUIRED

Functional Specialist	Work Days
Development Economist	25
Research Specialist	15

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ANNEX B

Methodology Employed To Identify Capital Projects for Phase II and Phase III Analysis

According to the Scope of Work, a primary output of Phase I of CDIE's evaluation of A.I.D.'s capital project experience is the identification of 20 to 50 projects to be analyzed, in depth, in Phases II and III. These projects are intended to illustrate several hypotheses that justify A.I.D.'s capital project activity. To extract this number from the hundreds of capital projects A.I.D. has financed over the years, the following steps were undertaken:

- A working definition of capital projects was developed;
- Seven hypotheses that reflect important justifications for capital projects were identified;
- CDIE's database was exposed to successive screenings based on the application of various criteria—sector coverage, geographic representation, feasibility of further in-depth analysis (availability of evaluation documentation; accessibility of project site), and relevance to the identified hypotheses; and
- Projects were also identified through interviews with A.I.D. personnel.

Throughout the process, CDIE and the consultants worked closely with the Agency's Capital Projects Committee, chaired by Mr. Fred Zobrist. All the elements of this "Reconnaissance" were discussed with the Committee as a whole, and in one-on-one interviews with most of its members.

I. Initial Selection

The first step was to aggregate the "universe" of capital projects by preparing a "working definition." This universe was drawn from A.I.D.'s Development Information System database which houses most of the Agency's project and program documentation. For the most part, completed projects were selected inasmuch as ongoing or active projects would generally not provide sufficient time to examine their impact. In addition to the definition, several sectors were identified to assure that the universe adequately reflected the range of A.I.D.'s capital project activity. For example:

Electric power	Seaports
Highways	Airports
Rural Roads	Telecommunications, communications
Irrigation	Schools and health centers
Potable Water	Buildings, warehouses, storage
Sewage	Industry
Railroads	

II. Screening

The process of initial selection generated some 1,000 projects. These projects were then screened against several criteria including: geographic coverage (region and country), availability of evaluation and other relevant documentation, for example, mid-term or final evaluations, audit reports, progress reports, final reports, special evaluations, and project appraisal reports. An additional screening criterion was the likely feasibility of detailed analysis as determined by the project's location. For example, was the project area secure? Was the project one that involved activities in several countries, a consideration which could complicate and unduly extend further analysis?

Some 400 projects resulted from the foregoing screening exercise. These were further reduced by testing for their linkage to the seven hypotheses that had previously been identified. The result was a matrix of 178 projects.

This matrix was refined to produce a final list of projects that provided a reasonable balance of geographic and sectoral coverage, and good illustrations of the seven identified hypotheses. An additional consideration in drawing up the Phase II final list of some 50 projects was whether or not the projects provided lessons for use in designing future capital development projects.

ANNEX C

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