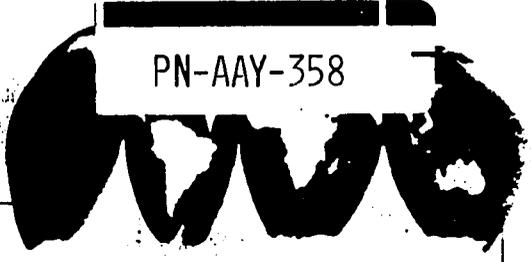




Lessons Learned

Evaluation Report Abstract



PN-AYY-358

ROSE KOREA POTABLE WATER SYSTEM PROJECT:

LESSONS FROM EXPERIENCE

Report of a Project Impact Evaluation

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July 1981

Agency for International Development
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KOREA POTABLE WATER SYSTEM PROJECT: LESSONS FROM EXPERIENCE

In 1977 AID approved and funded a CARE program to help the Korean government establish potable water plants and distribution systems in towns of between 5,000 and 10,000 population. The purpose of the program was to improve health conditions in these towns and to develop water systems that could be used as models for water systems in Korean towns of this size. CARE noted that such towns had been neglected in Korea's otherwise impressive campaign to make piped potable water available throughout Korea. The CARE program proposed to help develop water systems in six communities with a combination of CARE and AID funding and to help build an additional eight systems without AID funds.

AID concluded that CARE had identified a serious problem and a reasonable approach to it. Many of these large villages or small towns had grown rapidly, but with little planning. Their traditional shallow wells were becoming unsuitable as a source of water. The density of housing and the proximity of pit privies to the shallow wells in household compounds increased the potential of disease transmission through contamination of the ground water table. If Korean potable water programs were not addressing this problem, a project to produce model systems appropriate for these towns made sense.

This project was represented as filling a niche -- i.e., water systems for small rural towns in the 5,000 to 10,000 size class. In fact, this niche did not exist. The Korean government had been installing systems at this level before the CARE project was started. These systems were inadequate in many ways, however, and CARE's project rationale should have been the betterment of systems at this level. The lessons from this project are:

- A. In considering a potable water project it is important for AID to ensure that the project rationale is the right one.
- B. In attempting to influence national policy and practice in potable water programs, AID must design the program for maximum impact in the local national context. This project had no impact on national programs. As a small project, it should have been concentrated in one province and set up as a model program with high visibility in a few counties in one province. As it was, the project was too dispersed and made too small an input into each specific sub-project to draw any significant attention. This also made the project difficult to monitor, administer, and evaluate. Another alternative, of course, would have been to initiate a very large program which would draw attention by its size and importance in the national context. In this case, the program should have been carried out in close cooperation with a central government ministry.
- C. In any water project AID chooses to fund, the Agency should have some assurance that the project is designed with an appropriate source of supply, and to produce a product of sufficient quality and quantity to meet the demands of users. This is especially important if the project is to serve as a "model." This project failed as a model. It was no different in design from the typical Korean piped water project for small towns and contained all of their deficiencies. This project missed an opportunity to add technological design, and locational innovations that, in the long term, might have improved the quality and quantity of potable water for Koreans living in small towns.

KOREA POTABLE WATER SYSTEM PROJECT: LESSONS FROM EXPERIENCE

- D. Small towns need potable water, but priority should not necessarily be given to the poorest towns for reasons noted above. If AID cannot accept this condition it should not entertain such projects. Water projects should be based on relative need and demand, which may have nothing to do with the poverty level.
- E. Nonetheless, in those communities in which AID chooses to fund piped water systems with individual home connections, the systems should be designed to reach the poor in each community. This could be done by assuring that the project includes a feasible way for the poor to be connected. In addition, rate structures should provide sufficient water to meet the basic needs of the household at low cost with increasing unit costs for larger quantities, sufficient to meet operating and maintenance expenditures.
- F. A health education program is not always a prerequisite to a good potable water project. Existing health programs and practices should be studied carefully to determine whether a program is necessary and, if so, what type it should be. The CARE education program in this project was redundant and not well suited to the Korean institutional structure. It had little or no impact.
- G. Environmental assessments always should be conducted where piped water is introduced into urban or semi-urban communities. The introduction of piped water into small towns and agglomerated villages creates potential environmental hazards. The design of the system should address the waste water removal and treatment program of the community.
- H. Decisions by donor agency headquarters to terminate operations in a friendly host country should not be taken as a license to shortchange the last projects in the active portfolio. If anything, special consideration should be given to providing adequate staff to complete these projects with maximum effectiveness since these programs may be among those for which the agency is best remembered. This recommendation applies to AID as well as its grantees.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 20, Korean Potable Water System Project: Lessons from Experience, (PN-AAJ-170) may be obtained from the Editor, ARDA, DS/DIU/DI, Room 509 SA-14. Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Ecuador: Rural Electrification

Report of a Project Impact Evaluation

by

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Ecuador: Rural Electrification

In August, 1980 an Evaluation Team visited Ecuador to assess the impact of several small rural electrification projects funded by A.I.D. between 1964 and 1975. Our assignment was to go beyond the results of any particular project to look at what rural electrification had contributed to Ecuador's development. The four areas visited - Santo Domingo, Daule, Santa Elena and Ambato - provided a crazy quilt of differing geographical, climate, i.e., socio-economic and cultural characteristics in a country of great diversity, but a unifying theme emerged. Despite the long time span of A.I.D. involvement, and complex intervening programs in road construction, colonization and land reform, it became clear that electrification had played a substantial role in building market towns and regional service centers.

Santo Domingo de los Colorados, for example, now processes agricultural products in some 67 plants served by an A.I.D.-assisted electric cooperative and handles a wide range of repair and minor production needs of one of the nation's major crossroads. The town and the surrounding area are far more important today than they could have become without a reliable supply of electricity. Santa Elena, a coast town located more than two hours by car from the nearest major city and surrounded essentially by desert has become a thriving summer resort and service center - a result we believe which would not have occurred without readily available electric power. Electric power also contributed significantly to the growth of Daule and Ambato as market towns.

While commercial and industrial users of electric power were people of relatively higher incomes, these activities provided significant numbers of jobs, readily available markets for local agricultural products, supplies of needed inputs and other important benefits for the poor - trickle down economics that appeared to have worked.

At the residential level, the number one desire of those surveyed was not electricity, improved health services or education, but rather easy access to clean water. "Productive" home uses of electricity were not of major importance. It is not used to any important extent directly in agricultural production and though significant home commercial uses were found, the overall impact of electrification in this regard was modest. Moreover, electricity does not seem to be causing little "Abe Lincolns" to sit up and study later at night. The overwhelming evening activity of homes surveyed was relaxation, radio and a lot of television. But in the 630 plus homes surveyed in Santo Domingo - 85% of which had per capita incomes below \$375 per year - electrification was highly prized and surprising numbers of refrigerators, radios, televisions and irons were found. At these income levels, even buying on credit, it appears that residents are prepared to make significant sacrifices of other immediate needs to get the added comfort and leisure that electricity makes available.

But electric power in Ecuador is grossly underpriced. Because of the country's petroleum boom and the reaction of past governments to political

Ecuador: Rural Electrification

pressure, the price of regular gas is \$0.18 per gallon (less than one third the cost of production) with the price of diesel and similar oils used to generate the vast bulk of Ecuador's electricity priced proportionately. The result is a vast subsidy of petroleum prices estimated conservatively at U.S. \$2 billion per year - a sum which, if properly used, could end the problems of Ecuador's rural poor in short order. But the distribution of political power in Ecuador is not likely to produce such a result in the foreseeable future. These and other forces, far beyond the power of small A.I.D. projects to affect, are nevertheless a fact of life in countries we attempt to assist.

The bottom line for future activities, we believe, is that rural electrification remains an appropriate concern for A.I.D. and other development agencies especially where there is significant potential for the development of market towns, as part of a strategy of integrated rural development. Indeed, a market town without a reliable supply of electricity in the last quarter of the 20th century is almost unthinkable. Given the press of other basic needs and the strong local political pressures which already exist to extend electrification, however, A.I.D.'s role might best be limited to technical assistance and training in the context of the kind of integrated rural development projects in which A.I.D. has special expertise. Major investments in hardware may be more appropriately left to the cooperating government or other international financial institutions. But more needs to be learned about the relationship between electricity and regional growth. It may be, for example, as one regional company engineer speculated, that once a community has electricity and some significant resulting local production, it also has clout to demand clean water, better schools and better health services.

Finally, this report is the first of the impact evaluations to use, as a major empirical foundation, a broad survey involving some 630 households and over 3,200 people. It was conducted with the aid of an Ecuadorian sociologist/regional planner in the Santo Domingo area. Our effort was experimental and we learned much in the process, but we believe that the survey added fascinating data which we could not otherwise have obtained and that it also served as a safeguard against bias or hasty conclusions. While we do not believe that the kind of impact evaluation that the agency is trying to do ever can be reduced to data from questionnaires, we urge that local social scientists be involved and that similar surveys be considered as a contributing element in future impact evaluation efforts.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 21, Ecuador: Rural Electrification, (PN-AAH-979) may be obtained from the Editor, ARDA, DS/DIU/DI, Room 509 SA-14, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



.S. AID TO EDUCATION IN NEPAL: A 20-YEAR BEGINNING

Report of a Project Impact Evaluation

by

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June, 1981

U.S. AID TO EDUCATION IN NEPAL: A 20-YEAR BEGINNING

As part of AID efforts to assess the impact of its activities in a number of development sectors, Nepal education programs were selected for evaluation. The evaluation team undertook the fieldwork in September, 1980. Although the interpretations are those of the team and pertain to the specific projects examined, the findings will contribute to a forthcoming review of the education sector as a whole.

This evaluation seeks to measure the impacts of U.S. aid to education in Nepal over a 20-year period, from the beginning in 1951 of Nepal's first efforts to modernize the country and establish a national school system. During this period A.I.D. was the only major donor in education and contributed, through a series of projects and through substantial amounts of PL 480-generated excess Indian rupees, a significant portion of the financial resources as well as the training and technical assistance that went into creating and expanding Nepal's primary, secondary, and vocational education system. Consequently, successes and failures to date can be fairly closely related to A.I.D.'s assistance, though Indian influence is also apparent in Nepal's education policies.

On balance the impact of A.I.D. support has been highly positive, though results are mixed. A.I.D. assistance was crucial in enabling the Government of Nepal to carry out a massive and rapid quantitative expansion of the number of schools constructed and equipped, students enrolled, and teachers trained. In 1951 there were only 321 primary schools enrolling less than one percent of eligible children; by 1975 there were 8,708 schools enrolling 59 percent of the children. At the secondary school level, the number of schools increased from 11 in 1951 to 2,809 in 1975, and the percentage of children enrolled grew from .15% to 12%. In the early 1950s there were very few trained teachers and no teacher training facilities; by 1975 the Institute of Education had 13 campuses and had trained over 7,000 primary and 3,000 secondary school teachers. By 1975 a totally Nepali curriculum had been developed and an unusually effective textbook production and distribution system was functioning. The literacy rate was up from 2 percent in 1951 to 17 percent in 1975 and will show a much more rapid rate of increase in coming years given the greatly increased enrollment rate.

Despite this impressive progress, severe problems still beset education in Nepal. The primary system is highly inefficient, with 50 percent of enrolled students dropping out in the first three years before achieving functional literacy. The rapid expansion of the system has outstripped Nepal's capacity to train teachers, and the percentage of unqualified teachers is increasing. The level of learning is very low, especially in math and writing. Vocational training has been a failure.

The Ministry of Education recognizes and is addressing these and other problems. Despite the withdrawal of significant U.S. support, which for the most part has been replaced from other sources, the rapid expansion of the education budget and the school system have continued. A cadre of educators, over 300 of whom were trained in the U.S., have taken the reins of educational policy into their own hands and show increasing capacity to

U.S. AID TO EDUCATION IN NEPAL: A 20-YEAR BEGINNING

diagnose problems and design remedies. Although Nepal would certainly benefit from continued outside assistance, the basic human and institutional resources capabilities have been created upon which to build.

A variety of important impacts are attributable at least in part to these educational gains. Studies have linked increased agricultural productivity in Nepal to the level of education. The World Fertility Survey reported in 1977 that literate Nepali women married for less than five years had a 20 percent lower fertility rate than those women who were illiterate. Health practices and knowledge are still very poor, but hygiene is a part of the primary school curriculum and teachers often cite improved sanitation behavior as evidence that education is benefitting their students. Surveys conducted in several parts of the country, though methodologically imperfect and providing a very limited sampling, did indicate a relationship between the level of education and various attitudinal and behavioral characteristics conducive to development, such as receptivity to new ideas, willingness to take risks, higher aspirations rather than static expectations for the future, feelings of control over one's destiny rather than fatalism, and awareness of and participation in a broader world than one's immediate family and village. The impact of education on women has clearly been beneficial, though there remains room for much improvement. The percentage of female students in primary school has increased from less than one percent in 1951 to over 17 percent in 1979, and there is evidence of growing acceptance of the value of educating girls, especially in urban areas. The impact of education on equality of opportunity generally has been profound, despite remaining inequities based on geographic location and income. The educational gains are broadening participation in the political process and fueling demands for social, economic and political change to further reduce existing inequities.

Four principal lessons and policy conclusions emerge from this evaluation. First, A.I.D.'s assistance to education in Nepal demonstrates the significant impact that can be achieved, given a sufficient level and consistency of support over a sufficient period of time, and given the ability to finance substantial local as well as U.S. costs. Second, beyond resource transfers there is an equally urgent need to find more efficient and effective approaches to educational problems through experimentation with innovative approaches. Third, vocational training programs have a better chance of success if students enter them early, if the academic training is closely related to "hands-on" apprenticeship situations, and if the training clearly leads to specific employment opportunities. Fourth, given the importance of basic education in the "seamless web" of development priorities, A.I.D. should not let its capabilities atrophy or resource availabilities wither in this sector to the point when it can no longer play a meaningful role where the opportunity exists, as it did in Nepal, to impart U.S. values and techniques and make a significant contribution to developing a country's basic education system.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 19, U.S. Aid To Education In Nepal: A 20-year Beginning, (PN-AAJ-168) may be obtained from the Editor, ARDA, DS/DIU/DI, Room 509 SA-14, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



BOLIVIA: RURAL ELECTRIFICATION

Report of a Project Impact Evaluation

by

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April 1981

BOLIVIA: RURAL ELECTRIFICATION

As part of an A.I.D. effort to assess the impact of its assistance in the rural electrification sector, an interdisciplinary team conducted an evaluation of two rural electrification loans in Bolivia in May/June 1980. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

This evaluation focuses on the impact of the 1973 and 1974 rural electrification loans which were to improve the social and economic conditions in the rural areas adjacent to six major urban areas located in the highland, valley, and tropical zones of Bolivia. It was assumed that the availability of electric power would stimulate the development of rural industry and irrigation as well as improve social conditions through residential and public service usage of electricity.

By 1979, most distribution networks were constructed and energized, with the exception of the La Paz region. While it may be too early to ascertain the impact of the 1973 and 1974 loans and difficult to separate start-up problems from longer-term problems, comparisons between planned and actual electricity use can be made. The project provided electricity to 42,000 rural consumers, 20 percent less than projected for the first year after construction. The primary use of rural electrification was residential, for household lighting. A strong demand for residential connections existed beyond that planned for in the project and beyond the systems' current response capability. Average consumption per household, however, was lower than projected and the uses of electricity for irrigation and small industry were almost negligible which meant that the utilization of the systems' new capacity was less than anticipated. As a result, the utilities have not realized the revenues anticipated in the project design to achieve financial viability.

In addition, the intended use of electricity for night classes, for equipment in health centers and for public lighting have barely materialized. The team noted some promising initiatives, however, to use electricity for potable water systems.

The preponderant positive impact of the rural electrification project was social. Household lighting improved the physical quality of life for 7 percent of the rural population of Bolivia. Electric light was more convenient, less expensive, safer and healthier than traditional lighting sources such as kerosene and candles. Electric power did not seem to play a catalytic role in the economic development of rural areas nor to be a precondition for it.

Certain aspects of project design limited social and economic benefits of the projects and weakened the financial position of the electric utilities. Premature termination of financing for initial hookups resulted in the disproportionate exclusion of the poor from project benefits. Excessive technical design standards increased capital and operating costs of the systems. The equal urban-rural rate structure, though beneficial in some ways, provided insufficient revenues for utilities to expand the rural systems. Absence of an aggressive promotion program, including a mechanism to mobilize financing offered by beneficiaries, resulted in a smaller number of residential and productive consumers than was possible.

Lessons Learned:

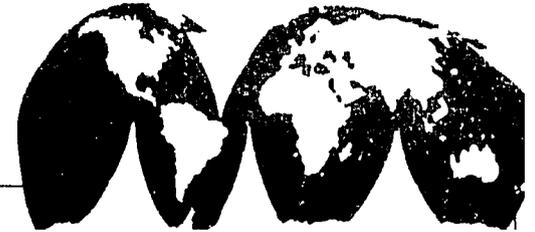
1. Rural electrification projects should be located where evidence of demand for productive use of electricity is apparent in the form of already-existing productive activities based on other forms of power. Alternatively, if the real intent and probable impact is social, the project should be designed so as to maximize the number of household connections rather than provide high quality service to a smaller number of consumers.
2. Project designers should introduce cost constraints into the decision-making on technical design standards, partly by allowing more of these choices to be made by host-country technicians and by those who will be concerned with the revenue-earning operations of the utility.
3. Rural electrification projects should attempt to ensure an explicit linkage between electrification and one or two complementary development activities (such as potable water and irrigation in the Bolivian case) which result in both increased development impact and increased rural power consumption.
4. Rural electrification projects should include a vigorous promotion program to teach rural people how to obtain electric service and how to use it productively, as well as a mechanism to mobilize private resources from beneficiaries. Such a program would spread project benefits to more residential and productive consumers and strengthen the financial viability of the electric utilities through increased consumption of electric power.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 16, Bolivia: Rural Electrification, (PN-AAH-978) may be obtained from the Editor, ARDA, DS/DIU/DI, Room 509 SA-14 Agency for International Development. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



THE PHILIPPINES: RURAL ELECTRIFICATION

Report of a Project Impact Evaluation

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THE PHILIPPINES: RURAL ELECTRIFICATION

As part of an A.I.D. effort to assess the impact of its assistance in the rural electrification sector, an interdisciplinary team conducted an evaluation of the Philippine rural electrification projects in April 1980. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation series.

1965 marked the beginning of A.I.D.'s involvement in rural electrification in the Philippines. Following a feasibility study done by the National Rural Electric Cooperative Association (NRECA), A.I.D. assisted the Government of the Philippines in creating two pilot cooperatives, MORESCO and VRESCO. Since these first steps, \$382 million have been invested in rural electrification in the Philippines. A.I.D. has contributed more than \$92 million to finance equipment, engineering consultant services and extensive technical assistance provided by the NRECA. This large investment helped establish the National Electrification Administration (NEA), which is planning an ambitious program for total energization of the countryside by 1987.

As of February 29, 1980 the following had been accomplished:

- 117 cooperatives registered
- 101 cooperatives energized
- 844 municipalities energized (59% of total)
- 9,088 barrios energized (27% of total)
- 1,159,434 households electrified (20% of total)

The team found the impact of the rural electrification program on both the process of economic development and the rural poor to be limited. There were, however, enough examples of positive effects to permit the team to draw conclusions about the conditions which must exist and criteria which must be met if a rural electrification project is to have positive impacts on development and the poor.

Those areas where electricity had a positive effect on development were characterized by a concentrated population, diverse markets, availability of capital and technical skills, and proximity to a larger market. There were places such as market towns and areas nearer to Manila where there were more opportunities to use power productively and which were at a relatively more advanced stage of development. The team also found positive effects on economic development where investments and projects in power-dependent activities were actively promoted.

The team observed that a large segment of the poor were unable to make productive use of electricity. A substantial portion could not afford to have their houses wired. They received only the benefits of community and social activity if their barrio had public lighting. Another portion could afford the wiring but could only afford the monthly cost of one or two light bulbs. This group received the social and community benefits and also saved money because, in most places,

kerosene lighting is more expensive. Examples of the use of electricity to break out of the poverty cycle were found as one moved up the socio-economic scale. The people in this group often had skills and savings or access to family resources to use with the electricity.

Lessons Learned:

- 1) The introduction of electricity does not automatically stimulate economic growth. The contribution electricity can make will depend on the level of development of the area and the programs and projects which utilize power.
- 2) The poor derive social and community benefits from electricity and some obtain cheaper, safer, better lighting. The most important benefits of electricity should be new employment opportunities, higher levels of productivity, and extended and improved public and social services. These benefits will flow to the rural poor only if electricity is used as an element of the development process and the development process, itself, is directed to meeting the needs of the poor.
- 3) The use of cooperatives for distributing electricity does not guarantee democratic participation of the members. The selection of an appropriate organizational form should give greatest weight to the need for effective management rather than other criteria such as the participation of beneficiaries or democratization of the development process.
- 4) The financial viability of rural electric distribution systems is difficult to achieve if they expand rapidly into far-flung, thinly populated rural areas. Financial problems are worsened by rising energy costs. Encouragement of productive uses of power and slower rates of system expansion would improve financial viability.
- 5) Rural electrification does not substantially increase energy demand because the additional demand for energy caused by electrification is small and electricity is often substituted for other fuels.

The team urges cautious and careful study in programming funds for rural electrification. The availability of alternative projects, the desire and commitment of the host country and other country-specific factors should affect the Agency's decision. Future studies of rural electrification should focus on identifying the pre-existing conditions and complementary programs which must exist to ensure that electrification has a positive impact.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 13, Philippines: Rural Electrification, (PN-AAH-976) may be obtained from the Editor, ARDA, DS/DIU/DI, Room 509 SA-14, Agency for International Development, Washington, DC 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned



Evaluation Report Abstract

KOREAN IRRIGATION

Report of an Impact Evaluation

by

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KOREAN IRRIGATION

The Korean irrigation project, to which A.I.D. contributed \$25.7 million beginning in September 1974, had as its goal assisting Korea to become self-sufficient in rice and barley and raising farm household income in project areas by \$412 annually. These targets were to be achieved through the construction of "up to 66" irrigation works of various types. The project was part of a major continuing program by the Korean government to expand irrigation of paddy and improve the gross discrepancies between urban and rural income, the latter having lagged as planning concentrated on industrial and export-oriented development. Korea today has virtually 100 percent irrigation to some degree on paddy land. This and other factors have made the Korean farmer the most productive rice farmer in the world per hectare.

Fifty-five projects were completed with AID funds. Rice self-sufficiency was achieved by 1975, soon after the project agreement was signed. Thus, the project made only a marginal contribution to that end, but it will positively contribute to sustaining self-sufficiency. The project did not help achieve improved barley production, which has been declining steadily due to the very high government rice support price and the growing demand for wheat in urban areas. Farmers' incomes did rise by the specified amount on most farms, given the rice support price, but income levels in rural Korea are directly correlated with farm size; thus the project has affected beneficiaries unevenly in spite of an effective land reform. Average rice yields in project sites increased 2.0 metric tons per hectare, or 1 metric ton on the average farm of one-half hectare.

Overall the project was successful in improving yields of rice. The project was a single-focused effort on irrigation alone, and did not require any technical assistance. Its success was dependent upon a complex of other factors that were in place, including a high degree of engineering and administrative competence, delivery of extension services, agricultural inputs, and a high rice procurement price (more than double world prices). The projects are economically replicable and sustainable at the Korean rice price and would be viable if both international input and output prices prevailed in Korea. They are also economically possible because of a variety of sunk costs in previous construction and social infrastructures.

Farmers have shown an acute awareness of market forces and are tied into the urban economy because of improved transportation, education, and information. This is evidenced by the production of winter vegetables, which has become a major rural industry.

The success of the project was achieved with little decision-making participation by the rural population, which is mobilized into a variety of organizations each of which demand time, money, and labor without commensurate meaningful involvement in planning. Farm Land Improvement Associations are not cooperatives, but bureaucratic means by which to deliver water and collect fees. They are very efficient.

Women were not mentioned in the project design, and have experienced both gains and losses. They have shared in greater household income, but now have a greater agricultural workload due to new cultivation methods while continuing very labor-intensive housework. More children are going to school, and their labor participation has declined.

Irrigation recipients view their lives as having improved with irrigation, although that alone was not the single causative factor. With increased income, additional education becomes the first priority of the families, with the purchase of household amenities second. Improved nutrition is not regarded as of importance. Education is viewed as an avenue of social and physical mobility, enabling the recipient to leave the farm for urban employment. Farmers do not want their children to follow in that occupation.

This results in an overall aging of the farm population, and has important implications for the future of the rural sector. A prolonged industrial recession, which Korea may already have entered, could bring numbers of migrating youth back to the villages as urban jobs are reduced; these are likely to be the least educated, and the least entrepreneurial. This recession could mean the Korean government will likely be under pressure to lower the support price of rice. The Korean farmer is dependent on "high technology" farm practices, including powered equipment and heavy use of purchased inputs. Since the average farm size is very small, and consequently total production per farm is low, it is doubtful that the government's policy to use urban to rural transfer payments to equalize rural and urban incomes for small farmers will continue to be successful if urban incomes continue to grow.

Lessons Learned

Korean rural development, which includes irrigation but also encompasses reforestation, cooperatives and the Sae-maul (New Village) Movement, as well as high price supports, has been successful in the Korean context. Korea may, however, be sui generis. Its reliance on the availability of other inputs, the sunk costs in infrastructure, the authoritarian nature of decision-making and lack of participation, and the unequal benefits to women, preclude it as a model for AID programming without substantial modification.

Good water control and successful irrigation provide a means to increase and stabilize the levels of farm production. Irrigation can be cost effective under certain conditions, but such conditions in general are scarce, and becoming scarcer.

Pollution of irrigation water, which is used for washing and sometimes for drinking, may be becoming an issue needing study. Emphasis on the newest HYV strains has been overstressed. Thought should be given to use of some of the more traditional, though improved, rice strains that are less susceptible to disease.

As "North" countries have been exhorted to provide greater support to "South" nations for mutual benefits, so within a country the urban sector may have to support the rural population for increased food production and national policy reasons in cases where irrigation may not be economic in the short term.

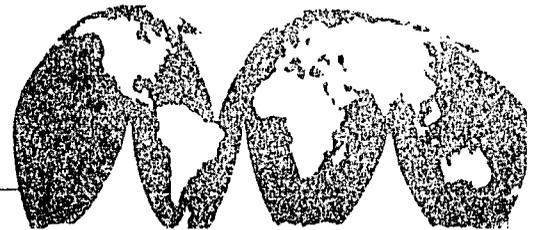
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Copies of the complete report can be obtained from the Editor, ARDA, DS/DIU/DI, Room 813 SA-18, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



CENTRAL AMERICA: SMALL-FARMER CROPPING SYSTEMS

Report of a Project Impact Evaluation

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December 1980

CENTRAL AMERICA: SMALL-FARMER CROPPING SYSTEMS

The small-farmer cropping systems research project in Central America was selected for evaluation as part of A.I.D.'s effort to assess the impact of its activities in several development sectors. Field work for the evaluation was done in Costa Rica, Guatemala, Honduras and Nicaragua by a six-person team in February, 1980. The findings and interpretations are those of the team and pertain only to this project. However, they will contribute to a forthcoming analytical report for the agricultural research sector as a whole.

In 1975, A.I.D.'s Regional Office for Central American Programs (ROCAP) began support to the Center for Tropical Agricultural Research and Training (CATIE), located in Turrialba, Costa Rica, to develop and test "a coordinated regional research approach for improving the cropping systems of small farmers in Central America." CATIE agreed to negotiate working arrangements with the principal agricultural research institutions of the five Central American republics. These arrangements were to provide for CATIE and national scientists to collect survey data on the cropping practices and crop yields of the peasant farmers as well as data on their socio-economic environments. Then the scientists were to work with representative farmers by setting up experimental plots designed to test and evaluate alternative crop combinations for their potential in increasing production and income.

ROCAP undertook this project with the expectation that CATIE would develop and demonstrate an innovative multidisciplinary methodology for doing research on the cropping systems of the small farmers of Central America. It hoped to mobilize a permanent regional institutional capacity and commitment for on-farm research and training addressed to the needs of this vital sector of rural society. It also expected to see CATIE produce, through the project, improved cropping systems alternatives for different ecological zones of the region that might be suitable to rapid verification and dissemination by the national institutions. Its longer-term goal was that as farmers adopted these proven, improved systems the total yields from small farms would significantly increase and family incomes would rise.

By the end of the project in 1979, CATIE had made working arrangements and had carried them out in varied ecological zones of all five of the Central American republics. Twelve agricultural scientists from CATIE had been engaged full-time in on-the-farm research. They had developed and demonstrated a cropping systems research methodology working on the farms of seventy-five small holders. Impressive production gains and potential economic benefits had been documented for the ten major cropping systems alternatives elaborated by the project staff. But these alternatives were yet to be verified through extensive field trials in the region. However, one highly promising alternative crop mix of sorghum and beans, which did undergo limited verification, had been adopted by Nicaraguan agricultural officials for widespread dissemination among peasant farmers.

During this five year period, CATIE increased its graduate training on small-farm systems and generated a five-fold increase in its budget, largely from international donors and almost exclusively for small-farmer oriented agricultural research activities using the "systems" approach. CATIE's institutional commitment to improving small farmer production had become well established as had its ability to work with national institutions in the region.

Although the project had achieved most of its stated objectives, the beneficial impact of the emergent research methodology and of the expanded institutional capacity at CATIE on large numbers of small farmers was yet to be demonstrated. There was no wide-scale adoption of the newly tested cropping systems alternatives developed from the on-farm experiments. In spite of this and partly because of it, some lessons were learned from the project evaluation.

Doing agricultural research on the farms of small holders, as opposed to research done on far-removed experimental stations, holds much promise for the development of truly appropriate production technologies and their more rapid adoption and dissemination. But for that potential to be realized, the projects should be designed to include the full cycle of research through both verification and dissemination. Donors sponsoring such research should provide the time and resources necessary, perhaps eight- to ten-year authorizations, to allow for validated technologies to reach numbers of small producers. International or regional research institutions, like CATIE, must be prepared to maintain their collaboration with the national agencies, not only to support the verification and dissemination phases as they come on line, but to capture important findings during these phases for improving subsequent research work.

Agricultural institutions undertaking on-farm systems research must give adequate attention to non-agronomic issues--such as input constraints, market analysis, and household and area labor availabilities by season--in the planning of the research, the analysis of constraints to production, and the implementation of research, verification, and dissemination programs. To do so requires that the institution have adequate staff skills in the social sciences and in farm management within the multidisciplinary teams undertaking each phase of the research effort.

Scientists need to be aware of the difference between doing research on small farms and doing research with the active interest and participation of small farmers. The former may well inform the agricultural scientist about agronomic issues, but only the latter is likely to educate both the scientist about how the small-farmer household economy works and the farmer about new agricultural options that will fit with the economy. Several of CATIE's field staff demonstrated that being a scientist and an involved participant, or even change agent, are not mutually exclusive roles.

Copies of the complete report can be obtained from the Editor, ARDA, DS/DIU/DI, Room 813 SA-18, Agency for International Development, Washington, DC 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



**KENYA RURAL WATER SUPPLY:
PROGRAMS, PROGRESS, PROSPECTS**

Report of a Project Impact Evaluation

by

Daniel Dworkin

**Office of Evaluation
Bureau for Program and Policy Coordination**

U.S. Agency for International Development

November 1980

Agency for International Development
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Kenya Rural Water Supply: Programs, Progress, Prospects

The Office of Evaluation selected Kenya as one of the countries in which it would assess the impact of rural water development. Projects were examined covering a range of technologies and representing a wide variety of local and international support (including A.I.D.-supported CARE Self-Help programs). The evaluation team undertook the field work in August of 1979.¹ Although the interpretations are those of the team and pertain to the rural water activities in Kenya, the findings will contribute to a forthcoming report on the rural water supply sector as a whole.

Since 1970, the Government of Kenya has been involved in a program to bring water to all its population. During this period the investment has been very high, but the results have been disappointing. The government is still committed to the long-term objectives for water development. The lessons from the past efforts in water supply are not only important for Kenya but for A.I.D., as it assists water supply projects, and for any country undertaking a large national program in water supply.

The national rural water program in Kenya differs from that in most other countries in two ways: size of the project and method of supplying water. The typical Kenyan water system is large and over the past decade has been getting larger. The aim of most systems is to supply water to individual families through metered private connections. Since most families live in dispersed communities, this means long distribution lines.

These large, complex systems are not working well. There are problems of design, construction, and maintenance that make the systems unreliable. The problems of maintenance are primarily the result of the low funding levels provided by the government. In addition to the problems of reliability, which limits the number of people served, the government discourages the use of communal facilities by locating them inconveniently and sometimes closing them completely. This means that often rural systems deliver water to a small number of elite users who have their own private connections.

A.I.D. has provided funding to self-help systems through CARE-Kenya. Systems built by communities under self-help programs also have problems of reliability but usually serve the entire community. Some of the lessons that can be learned from the Kenya rural water program include:

- (1) Kenya has not matched the level of technology with the ability of the institutions to keep it functioning. Rural water projects require varying amounts of institutional support based on the technology used. At one extreme is the use of open shallow wells or protected spring. At the other extreme are the piped water systems with individual connections. Such methods of improved supply can

¹The team consisted of Daniel Dworkin, Bureau for Program and Policy Coordination, Office of Evaluation; and Ross Hagan, Development Alternatives, Inc.

be installed and be reliable with little or no input from outside agencies. As the technology level becomes more sophisticated, the support required becomes more extensive. Where diesel pumps are used to distribute treated disinfected water, a continual supply of spare parts, chemicals, fuel and trained people is required. Such re-supply must be carried out throughout the year regardless of seasonal weather conditions. Also, imported items such as parts and chemicals, often from hard currency areas, must be available.

An assessment should be made of what systems are currently being supported reliably by the existing agencies and projects should be designed at the appropriate technological level. Where other technologies are proposed which have not been used, specific provisions should be made to improve the ability of the institution to support the systems and take into account the complete range of services that must be provided to support the advanced technology.

- (2) The Government of Kenya produces only a quarter of the funds necessary to support the systems installed. This is a reality and it should be assumed that the amounts of funding historically provided in any country are the amounts that will be available in the future. If systems cannot function at the level of support provided, other sources of funding must be provided or systems that can function at the historic level of support furnished should be designed.
- (3) System reliability should be the primary concern of the Agency. If a reliable source of supply cannot be assured, then the system will be of little value. The reliability of supply can often be increased by installing more than one single well and handpump to serve a community or by providing standby pumping units for a pumped supply.
- (4) Health and sanitation programs, often considered essential components of improved rural water projects, may not be necessary in some instances and should always be designed on the basis of what the community already knows and practices.
- (5) The Harambee Self-Help Program in Kenya mobilizes the resources and energy of the rural community. The schemes often are poorly designed and installed. Villagers literally spend years in the construction. Pipes and fittings are contributed by CARE and others on a piecemeal basis. Since these are generally small schemes, they could be a proving-ground for small, well-designed projects using groundwater and handpumps--both neglected approaches in rural Kenya.

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Copies of the completed report can be obtained from the Editor, ARDA, DS/DIU/DI, Room 813 SA-18, Agency for International Development, Washington, DC 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



JAMAICA FEEDER ROADS: AN EVALUATION

PROJECT IMPACT EVALUATION NO. 11

by

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JAMAICA FEEDER ROADS: AN EVALUATION

The Jamaica Feeder Roads project was evaluated as part of an inter-regional study to learn more about A.I.D.'s experience in low volume rural roads. An inter-disciplinary team studied the project in March, 1980. This report and the others in the rural roads series will be summarized in a final report of the inter-regional study.

The Jamaica project was designed and analyzed with unusual rapidity responding to what were considered urgent political needs in 1970. A political strategy was articulated then and a development strategy evolved.

The project which emerged led to construction of improvements during 1972-76 to a large number of short road segments totaling 181 miles (3 percent of Jamaica's rural roads) scattered throughout the island in a very wide range of geographic and social settings.

Two major design changes during implementation doomed both the political and development strategies: the change to asphalt (capital intensive) from gravel (labor intensive) roads, and the adoption of a new method to carry out the sub-project feasibility studies which stressed improved and new cultivation rather than assessing the potential traffic and savings in operating vehicles on the improved roads.

The result was relatively little new employment which torpedoed the political strategy of creating rural employment to slow migration to the cities in order to reduce crime which in turn was forecast to increase tourism and create a better political climate. In tracing through this strategy the report demonstrates that even if high rural employment took place the other parts of the strategy could not have been expected to materialize.

The development strategy also failed. The economy has been in a tailspin, but even if it had grown, the roads were not economically justified. Traffic levels are extremely low; improved cultivation practice was and is dependent upon the availability of inputs and a better marketing system, not better roads; and new cultivation was a myth since the feasibility studies mistook land in fallow as land which the farmers would push into cultivation once the roads were improved. The economic impacts from the roads are very marginal.

Several social impacts were assessed. The roads were associated in some areas with spreading rural electrification and potable water. Some new housing schemes and a fair amount of private housing construction took place along the improved roads. Women benefitted as shoppers because of easier access to markets, but although women are the preponderant crop traders, female marketers did not benefit greatly from the roads since more of the traders with trucks are males.

Since the roads were improvements rather than new roads, the benefits did not disturb existing patterns for good or ill. The roads served people who

already had economic and social access; they did not help people who did not have such access. People near the roads had been able to market their crops and now can do so as well or better. Those not near the roads did not receive much benefit from any of the social and economic services studied.

Institutional impacts were varied. Maintenance is a major problem. The Ministry of Works became stronger, but the private sector suffered from association with the project. The net impact was to strengthen the government to carry out major road works, not more feeder roads. The government and A.I.D. performed well technically but did not adequately supervise the development (economic and social) aspects of the project.

The team concluded that due attention to the strategies adopted at the outset and as changed during the project might have prevented the misuse of the project. This would have taken considerable courage given the political impetus for the project. The team also believes that the Agency must be more assured of adequate program supervision during implementation including far better articulated project and country program evaluation plans which actually get carried out. Good evaluation is precisely what Jamaica needs to determine what to keep and what to discard in order to live within its means.

The choice of the Ministry of Works as implementing agent was administratively efficient, but brought the project under the authority of an entity more comfortable with high technology solutions. A.I.D. must be more careful to assure that implementing agencies and program goals are matched.

A.I.D. planners should treat rural roads in the context of rural production; an agronomist should participate in the design and key program decisions of such projects.

Finally, the team is concerned that the lessons of this project be understood by the country team to avoid a repetition of this experience-- something we believe is quite possible at present.

Copies of the complete report can be obtained from the Editor, ARDA, DS/DIU/DI, Room 813, SA-18, Agency for International Development, Washington, D. C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



TUNISIA CARE WATER PROJECTS

by

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TUNISIA CARE WATER PROJECTS

The Office of Evaluation selected the CARE-Tunisia village water projects as part of its activities to assess the impact of several development sectors. The evaluation team undertook the fieldwork in March of 1980. Although the interpretations are those of the team and pertain to the Tunisia CARE water projects, the findings will contribute to a forthcoming report for the rural water supply sector as a whole.

Overview: Over the period 1975-1979, four water projects were implemented by CARE for \$1.9 million (\$881,000 from A.I.D., \$188,000 Peace Corps, \$86,000 CARE, and \$771,000 from Tunisian national and local budgets). To reach goals of improved health and quality of life for rural Tunisians living in the provinces of Bizerte, El Kef, Kairouan and Siliana, these projects had three basic purposes: (a) to make potable water available by renovating and enclosing about 300 existing wells and springs; (b) to institutionalize a maintenance and disinfection system at the provincial level; and (c) to increase health awareness among beneficiaries. Some one to five years after project completion: (a) 325 water sources have been renovated and are used by about 100,000 rural Tunisians, although there is minimal change in available potable water; (b) maintenance/disinfection teams have been established in all four provinces, but they are not operating very effectively; and (c) three of four health education teams formed by the projects still exist, but there appears to be little or no change in health awareness.

Project Implementation: The projects were implemented by CARE based on contracts signed with the Government of Tunisia. They were done in cooperation with United States Peace Corps volunteers, the national Ministry of Public Health and the four provincial governments. CARE initiated and designed the projects, arranged funding, and selected sites from lists which were developed by provincial authorities in consultation with local leaders. Major site selection criteria were technical feasibility and number of users. There was no significant local participation in project design, implementation or maintenance. The projects were designed to improve water quality; they were not designed to tap new sources of water or increase existing supply. Sites were renovated and reconstructed over a 12-18 month period in each project area, with some site improvements being done in as little as two weeks. Almost half of the 325 improved sites were shallow, hand-dug wells; used since Roman times in some cases; 25 were deep wells in drier Kairouan; and the remaining two-fifths of the sites were springs. The project sites were rehabilitated and enclosed to control water contamination with relatively low-cost technology that required minimal maintenance.

Impact on Availability and Use of Potable Water: Based on Ministry of Public Health records, about three-fourths of the project sites were not producing water that was potable by Tunisian public health standards. About four-fifths of the project sites visited needed repairs of some kind. Only about half of this same sample were closed systems, that is, were fully operational and showed no sign of damage that could permit surface contamination. At nearly two-fifths of the sites where handpumps had been installed, they were not working. The diesel pumps used in Kairouan were operating at all five sites visited.

Impact on Health and Quality of Life: The evaluation was not able to demonstrate a relationship between a change in the incidence of water-related disease and the CARE water projects. Generally, water use patterns were not altered by the projects and there was no increase in water supply intended. There is an estimated average of 300 users per improved site per day, but the Kairouan deep wells were averaging 1,200. Water consumption averaged ten liters per capita per day (lcd), ranging from 5 to 25 lcd. Some of the project sites may have had negative impact where users discontinued their own disinfection practices because they thought the water was safe, but where in fact the water may have been contaminated because project treatment had ceased. Among positive impacts, women usually preferred pumps to buckets, and covered wells have decreased the danger of small children falling in.

Impact on Participation: Beneficiary participation was on the whole very limited. It varied from one project area to another, however, depending on the critical need for water. Participation was greatest in the driest project area, Kairouan, where users have created a system of fees to cover diesel fuel costs. This participation was associated with better site maintenance at Kairouan. Participation was virtually nonexistent in the somewhat better rain-fed areas of Bizerte and El Kef where alternative water sources were available.

Impact on Institutions: The projects sought to institutionalize maintenance, disinfection and health education components. As planned, seven mobile maintenance/disinfection teams and four health education teams were trained and turned over to the provincial governments by CARE. All but one of these teams still exist. Based on interviews at 30 sites, only five sites had been visited by a maintenance team within the preceding month; only eight sites had been disinfected within the preceding two weeks; and only two sites had been visited by health educators within the preceding month. Although the projects had some impact on Tunisian institutions, they are not coping with the problem as well as had been hoped.

Conclusions and Issues of Current Projects: Although the water projects were aimed at the rural poor and were implemented basically as planned, they were not successful in making available consistently potable water. Furthermore, the team believes health benefits cannot be expected from potable water projects if water quality is not improved. The projects were prepackaged and local participation was minimal; and they did not address the major apparent user-perceived needs of greater access and more water. For the projects to produce consistently potable water, Tunisians must pay immediate attention to maintenance, disinfection problems and health education.

Lessons Learned: Where the host governments are unwilling or unable to operate systems to provide water that meets all standards of potability, A.I.D. should fund projects that increase quantity, dependability, and accessibility and that provide water of better quality than would otherwise be available. Water potability should be viewed in relative not absolute terms. Project design should reflect demonstrated community need rather than prepackaged donor solutions. Local participation might have been greater if beneficiaries had collaborated in the planning. There are opportunities for future Tunisian-American cooperation in water projects, but the working relationship needs to be strengthened, including agreement on a long-term public health strategy, experimentation with alternative technologies, and collaborative evaluation.

Copies of the complete report can be obtained from the Editor, ARDA, DS/DIU/DI, Room 813 SA-18, Agency for International Development, Washington, DC 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned



Evaluation Report Abstract

SENEGAL: THE SINE SALOUM
RURAL HEALTH CARE PROJECT

Report of a Project Impact Evaluation

BY

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As a part of an A.I.D. effort to assess its activities in several development sectors, the Sine Saloum Rural Health Project in Senegal was selected for evaluation. The evaluation team undertook its work in April, 1980. Although the interpretations are those of the team and pertain to the specific project examined, the findings will be integrated with those from eight to ten similar reports in a forthcoming review of the primary health care sector as a whole.

The project agreement for the Sine Saloum Rural Health Project was signed in August 1977. Significant progress with the training of village health workers and with the opening of village huts has been made. There have been, however, considerable delays and the project is far from ready for an assessment of its final health impact. When looking for indicators of potential impact the team found a project with serious problems and in danger of collapse. This evaluation report alerts the Government of Senegal and A.I.D. to the problems and suggests actions which may be taken.

This ambitious project calls for the building of 600 village Health Huts, each staffed by a health worker, a birth assistant, and a sanitary worker. The Huts are equipped with basic medicines which are dispensed for diseases common to the region. Villagers pay for the medicines and services of the health team in order to cover costs and assure a continuous medicine supply.

The Health Huts are the lowest and broadest level of the total pyramid of health services in Senegal. Although they depend on the Ministry of Health for supervision and support, the Huts belong to the villages, and the health teams are not government employees.

The \$3.3 million A.I.D. grant was to finance a U.S. technical assistance team, provide necessary vehicles, equipment, support, training and supervision, and to purchase the initial inventory of medicines for the Huts.

In April, 1980, the evaluation team found a project which appeared to be making slow, but steady progress. In Nioro and Kaolack departments about 200 villages had been organized and had built Health Huts. Village-level staff had been trained and the Huts had opened. Basic health services were more accessible to people living near the Huts. A closer look, however, indicated that the project was in serious trouble. One third of the Huts in Nioro Department, where most had been open for the longest time (about 9 months), had already closed. In Kaolack where they had been open for three months, some had already closed and it appeared very likely that many more would close shortly.

We identified three vital elements which must function effectively for the project to survive: (1) Huts must be financially viable; (2) the Government must deliver adequate support and supervision; and (3) an efficient medicine resupply system must be organized. In fact, all the Huts visited by the team are threatened with bankruptcy because they do not take in enough money to replace the initial donated stock of basic medicines. More attention must be paid to Health Hut finances during project design, and they should be monitored very carefully throughout project implementation so that appropriate adjustments can be made. Adequate supervision and support for the village health workers are not

being provided, even though A.I.D. is paying most of the costs, and there are no grounds for optimism that the Government will pick up these costs at the end of the project. Although it is too early to be sure, it appears probable that a reasonably efficient medicine resupply system is emerging.

The evaluation team found several specific management difficulties that contribute to the basic problems. Matters such as selection of health workers, location of Huts, procurement of medicines in the U.S., remuneration of health workers, handling of transportation, and use of the records were not resolved in ways which assure the integrity of the planned system.

Cutting across all the difficulties which beset the project is the clear failure of A.I.D. to manage the project prudently and effectively. Although the amount of the grant is relatively small, the scale of the project, with 600 individual units, is very large and administratively difficult. To jump into such an undertaking without a thorough pilot project is folly.

A.I.D. has not provided adequately the one ingredient which the recipient country has every reason to expect--firm, experienced project management and technical assistance. The Mission appears to have operated with a kind of "arm's length" or "hands off" style, taking the position that it was up to the Senegalese Government and the villagers to take responsibility and solve the problems. Adequate mechanisms for the effective exercise of Senegalese and A.I.D. joint responsibilities for the project were not established. This is a sure formula for failure and the result, for over 800,000 people in rural Sine Saloum, is likely to be only increased, but unfulfilled expectations, and the consequent frustration and alienation from government health and other development projects.

Our limited investigation shows a trend for health treatment at the village level to be substituted for treatment at the Health Posts, the next higher level of facilities, wherever Huts are operating. If financial, management, and supervision problems can be overcome, the project could have a profound effect on health.

Postscript

Since the draft report was presented to the Mission in Dakar on April 18, several corrective measures have been taken by the Government of Senegal and USAID. These have included a review of the project by the National Assembly, the appointment of several new project personnel, a delay in opening new Health Huts pending the solution of current problems, and the redesign of the project by appropriate Ministries and USAID.

* * *

Copies of the complete report can be obtained from the Editor, ARDA, DS/DIU/DI, Room 813 SA-18, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

MOROCCO: FOOD AID AND NUTRITION EDUCATION

Report of a Project Impact Evaluation

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August 1980

The Moroccan Nutrition Education Project was selected for evaluation as part of the assessment by A.I.D. of the impact of its activities in several development sectors. The evaluation team worked in Morocco during February, 1980.

Although Morocco has a high per capita GNP relative to most developing countries, its income distribution pattern is skewed, and its health and nutrition status is deficient. Forty percent of Moroccan households are considered poor by U.N. standards, with incomes below \$260 per capita. Infant mortality rates are up to 170 per thousand in rural areas, and over five percent of preschool children are severely malnourished. The existing health system reaches only a small percentage of the poor and malnourished while other efforts in this area have been insufficient and uncoordinated.

In 1975, A.I.D. approved a \$450,000 grant to Catholic Relief Services (CRS), a private and voluntary organization, to introduce nutrition education into its 250 social education centers which were distributing PL 480 Title II food. As a result of the grant, a nutrition institute was established in Marrakech to train a cadre of supervisors and teachers for the provincial and local levels. Four Moroccans attended a three-year degree program at the Tunisian National Nutrition Institute in order to assume the teaching responsibilities at Marrakech. A curriculum was developed which combined practical lessons in nutrition, sanitation, personal hygiene and the treatment of childhood diseases.

The impact evaluation took place in February 1980, fourteen months after the termination of the grant in December 1978. The team found a well organized and high quality system which had expanded to 300 centers since the program's transfer to the Ministry of Social Affairs in early 1979. The Government of Morocco contributed some \$4.7 million last year for the operation of the program. The local costs of the centers and the teachers' wages were financed by the mothers themselves. The total annual recurrent cost per beneficiary was \$34.47, which is roughly comparable to other feeding programs throughout the world.

On the basis of an existing survey and their own studies, the team concluded that the social education centers had positively influenced the nutritional levels of Moroccan children. Children in the program were less malnourished; those children who were better off on entering the program maintained or improved their nutritional status. According to one analysis, the program resulted in a 69 percent reduction in moderate and severe malnutrition. Other data and the team's own small study of mothers' nutrition knowledge and practices showed that the education component contributed substantially to the reduction of malnutrition. This impact could be even more powerful if the program were more efficiently targeted on severely malnourished children and if collaboration with the Ministry of Health were further improved. The quantity of food distributed was also an important consideration: the relatively large ration size in the Moroccan program 45 kilograms per recipient per year and three rations per family may have helped to compensate for the inevitable sharing of commodities within families.

The food served as an important income subsidy of \$73 annually for each Moroccan family participating in the program, or as much as 24 percent of the per capita incomes of these families. The mothers visited were all at poverty level with limited education and minimal earning capacity. The team's informal study of 25 of these mothers indicated that there was a meaningful difference in the nutrition and health knowledge and practices of mothers attending the program for more than one year compared with those who were newly enrolled. These findings corroborated CRS' more extensive survey data. The qualifications of the teachers, the organization of the nutrition education classes, and the diffusion effects of the centers accounted for the results. The program was a key factor in providing an opportunity for women to share in the benefits of a broader community life.

Food acts as an incentive for mothers to come to the center as well as a nutritional and income supplement. The program cannot escape this reliance on PL 480 Title II food commodities over the short term. Given current financial commitments and its balance of payments problems, Morocco can barely import enough food for its own consumption needs, let alone food donation programs. Nor is it possible to shift to local foods at the present time due to declining per capita domestic cereal production. Even if local foods were available, the costs are 54 percent higher than the U.S. acquisition price for PL 480 Title II commodities plus ocean freight. In the longer term, a reallocation of resources towards the dryland farming sector, higher producer prices and more widespread access to credit could encourage greater local production, thus reducing dependence on PL 480 food. In the absence of local substitutes or foreign exchange to finance increased imports, a critical question is whether and how food aid can be phased out and still preserve the same impressive accomplishments.

The CRS project is an example of how development assistance, in this case nutrition education, can be combined with food aid in creative and cost-effective ways. It has demonstrated that PL 480 Title II programs can be documented and shown to have a substantial impact on development. Other factors of success include the delicate balance of strong central management and local initiative, the requirement that mothers pay for their participation in the program, and the continuity of on-the-scene leadership.

Lessons Learned:

- In order to avoid dependency on PL 480 Title II foods over the long term, the phase-out of these commodities should be planned in conjunction with local food availabilities from the earliest stages of the project design. This would include a review of the country's economic and agricultural policies which relate to food production or foreign exchange earnings.
- Project designers should actively consider new ways of integrating development assistance activities, such as nutrition education, with PL 480 Title II programs. For a very small amount of money, it is possible to add key components which are crucial to achieving project results.

- A unified and centralized record keeping and management system should be instituted in feeding programs so that progress can be properly monitored and impact fully documented. The additional resources and effort required are well worth it.
- To encourage local participation and initiative, teachers in the food distribution centers should be recruited from the same community and from a similar socio-economic background as the program attendees.
- To improve targeting on the most vulnerable groups, it is essential that scarce food resources be allocated on the basis of nutritional status as well as income level. The ration size must be large enough to compensate for the effects of family sharing, which seems to be inevitable among the poor. Food supplements should be accompanied by education and other health and sanitation improvements to maximize nutritional impact on preschool children.
- In those instances where an independent organization is to be set up to administer PL 480 maternal/child health programs, difficulties will arise unless cooperative relationships are established with other relevant ministries. Coordination with the Ministry of Health is especially important to ensure that the existing health infrastructure is adequately utilized.

Copies of the complete report may be obtained from the Administrative Assistant, PPC/E, Room 2839, NS, Agency for International Development, Washington, DC 20523.

PHILIPPINE SMALL SCALE IRRIGATION

Report of A Project Impact Evaluation

by

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PHILIPPINE SMALL SCALE IRRIGATION

The small-scale irrigation project in the Philippines was selected for evaluation as part of A.I.D.'s effort to assess the impact of its activities in several development sectors. The work of the evaluation team was done in December 1979. The interpretation of the findings are those of the team and pertain to the specific project examined, but the findings will contribute to a forthcoming analytical report of the small- and medium-scale irrigation sector as a whole.

In 1976, A.I.D. began support of a Philippine Government program to expand village irrigation systems. Since then, over 1000 systems have been built or rehabilitated. Irrigation provided the opportunity to grow two crops each year, increasing rice production and gross farm income. On-farm employment has grown with the demands of double cropping. Local irrigation associations are functioning with support from the national Farm System Development Corporation, the A.I.D.-funded implementing agency. Thus, many of the project's immediate objectives have been met.

The project's sustainability in terms of real income benefits for small farmers, however, may be a problem. Increased gross incomes from double cropping and high-yielding varieties of rice have been substantially offset by increasing costs of production, debt burdens from capital investments, and persistent technological and water management problems. Of crucial importance is the performance of pumps. Floods, electricity fluctuations, and wear and tear have resulted in high maintenance and repair costs; frequent brown-outs interrupt critical water supply schedules.

With more intensive agricultural practices, more family labor is required to produce crops, reducing the opportunities for off-farm employment. Unless the farm is exceptionally profitable, net family income may be lower, as off-farm employment is discontinued. Thus, an anomalous situation results: farm income rises, but family income drops.

National policies are equally important for those moving from subsistence to commercial agriculture. Although many features of national policy positively affect small farmers, several aspects of Philippine agricultural policy make it difficult for the small farmer to compete. National procurement and price policies are export-oriented, demanding quality standards for rice that most small producers cannot meet. If they cannot, they do not receive the favorable subsidized price and most depend on lower private prices. Since most cost-benefit project assumptions were based on the government-subsidized rice price, farmer income projections have not been met. Small producers remain in a precarious economic condition. To receive the higher price, farmers would have to make additional investments in post-harvest machinery, while energy and other input costs rise. They often cannot afford it. The national credit system has also constrained farmer income, not providing adequate and timely credit. Farmers must often rely on usurious private lenders.

Although progress has been made in land reform, most farmers remain either leaseholders or share tenants without security. These farmers must still pay for and maintain the new irrigation systems. The landlord reaps the benefit from his share in increased production, without sharing in the costs. The share tenant, the most underprivileged, makes the greatest relative investment of capital and labor.

Government policies are clearly focused on increasing total production of rice, assuming increased production will improve the incomes of small producers. Production has increased, but long term, sustained improvement in farmer income will depend on factors beyond irrigation. Increasing the producer rice price, or reducing input costs would immediately improve farmer income. For the present, government policy responds to urban consumer demands, not those of rural producers. This situation is not likely to change. Faced with this rigidity, farmers may pursue three basic strategies to improve their position: reduce their dependency on rice and the rice pricing system and invest in more profitable crops, diversify farm activity by developing livestock or other farm-related enterprises, or seek more lucrative off-farm employment.

The irrigation system leadership works with, and is part of, the established local leadership. Existing authority patterns are reinforced in the short run. The irrigation association seems little used for overt partisan political purposes, and its effectiveness does not extend beyond the irrigation system.

Improved farmer income does not necessarily translate into improved family nutrition. Rather, the farmer's priority is to pay for school fees. Social mobility is seen to be a product of education. Women of farm families have neither benefited from nor been harmed by the project. The Philippine Government has, however, been innovative in using energetic female extension workers. Over half of the Institutional Officers are women and their involvement seems to reflect regional patterns of female participation, which vary considerably throughout the islands. Their role could be emulated in other projects and, perhaps, other countries.

A.I.D. developed this project as a commodity loan, focusing on engineering components and geographic expansion of irrigation, not on maximum gain to the individual farmer. Although gross farmer income has been improved, net income has not, and the system cannot be sustained in its present form. The evaluation team recommended that any future support to the competent Farm Systems Development Corporation should concentrate on technical assistance to improve and develop the productive capacity of farms in existing irrigation systems, rather than continuing geographic expansion of what is a fragile undertaking.

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Copies of the complete report can be obtained from the Administrative Assistant, PPC/E, Room 2839, NS, Agency for International Development, Washington, D.C. 20523.

EFFECTIVENESS AND IMPACT OF THE CARE/SIERRA LEONE
RURAL PENETRATION ROADS PROJECTS

Report of a Project Impact Evaluation

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August 1980

EFFECTIVENESS AND IMPACT OF CARE/SIERRA LEONE
RURAL PENETRATION ROADS PROJECTS

Introduction: The first of the CARE/Sierra Leone Rural Penetration Roads Projects began in fiscal year (FY) 1975 and Phase II will be completed in FY 1980. The total funding for the projects has been \$11.7 million of which AID has provided \$5.1 million, the largest single share. Additional contributions have come from CARE, the Government of Sierra Leone (GOSL), the Peace Corps, the United Kingdom's volunteer organization (V.S.O.), and the World Bank. AID designed the projects to support Integrated Agricultural Development Projects (IADP's) funded by the World Bank. The IADP's were to provide farmers with improved crop varieties, fertilizer, extension advice, and better marketing services, and the Rural Penetration Roads Projects were to improve farmers' access to IADP services. Many, if not all, of the impacts of the roads are intertwined with the socio-economic and environmental impacts of the IADP's themselves. A private voluntary organization, CARE (Cooperative for American Relief Everywhere) has implemented the projects.

Effectiveness: By the end of FY 1980, CARE will have constructed 417 miles of feeder roads compared to a projected 1300 miles (900 miles in Phase I and 400 miles in Phase II). Costs per mile were much higher than anticipated: \$15,125 in Phase I compared to a projected cost of \$4,000 and \$29,400 in Phase II compared to a projected cost of \$12,000. These construction shortfalls and cost per mile overruns were caused by substantial AID funding delays, faulty construction planning by AID and CARE, higher than anticipated equipment breakdowns, and lack of suitable personnel.

In spite of these problems, which are common to road projects in developing countries, the construction effort has been moderately successful. Although mileage and cost estimates were over-optimistic, upon completion the project will have increased by more than 50 percent Sierra Leone's feeder road mileage in good condition. In addition, CARE has been successful in involving local chiefs and villagers in both construction and maintenance and in instituting a relatively more objective road selection process. Whether the GOSL can adequately maintain the 417 miles of roads built remains questionable, for the projects have failed to develop a feeder road maintenance capability within the GOSL.

Impact: The overall socio-economic impact of the CARE roads at present has been positive. At the same time, questions exist concerning negative impacts, which over time could overwhelm the positive effects. On the positive side, socio-economic surveys indicate that the CARE roads are associated with more frequent agricultural extension agent visits, increased traffic and transport services, higher quality cement construction in villages, higher purchases of consumer goods, and more health services in villages served by CARE roads. The CARE roads may have played

some role in facilitating increased fertilizer use; in bringing about wider cultivation and marketing of cash crops; in expanding commercial activity; and in increasing educational opportunities.

On the negative side, the CARE roads are associated with a shorter range of fallow period for upland rice cultivation, greater rice scarcity, and increased swamp rice cultivation. All these conditions suggest substitution of cash crops for food crops, particularly rice. Some indications exist that the CARE roads, because of the above effects, are associated with declining soil fertility, deforestation, increased soil erosion, and increased exposure of swamp rice farmers to waterborne diseases. The relationship of the CARE roads to migration is unclear. Since some CARE roads function as arterial or trunk roads connecting major provincial towns, these roads probably encourage migration. Those roads that function as true feeder roads, connecting villages to rural market towns, likely retard rural-urban migration.

Tentative Lessons Learned for Rural Roads Projects:

- Before funding rural road projects, AID should determine whether complementary activities with which the roads are associated are likely to have net positive or negative impacts.
- To document the immediate socio-economic impacts of rural road projects, AID should carry out periodic limited baseline and impact surveys during project implementation, as in the Sierra Leone case.
- To ensure that the impacts of AID-funded rural road projects will continue to be examined, AID should improve budgetary and career incentives for impact evaluation.
- In designing and implementing rural road projects, AID should emphasize development of the host country's capacity to maintain the roads constructed and to carry out its own rural road construction.
- To help ensure that maintenance is performed, AID should condition funding of annual tranches of rural road projects on satisfactory maintenance of the roads constructed.
- In future grants to private voluntary organizations (PVO's) for rural road construction, AID should require explicit commitments by host governments to fund maintenance.

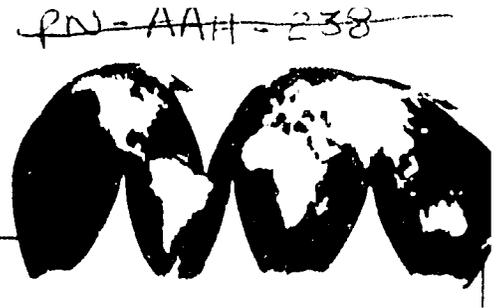
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Copies of the complete report can be obtained from the Administrative Assistant, PPC/E, Room 2839, NS, Agency for International Development, Washington, DC 20523.



Lessons Learned

Program Evaluation Report Abstract



WORKSHOP ON PASTORALISM AND AFRICAN LIVESTOCK DEVELOPMENT

A Program Evaluation Report Submitted by the
Institute for Development Anthropology

August 1980

Office Of Evaluation
Bureau for Program and Policy Coordination
Agency for International Development
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THE WORKSHOP ON PASTORALISM AND AFRICAN LIVESTOCK DEVELOPMENT

Livestock sector interventions in semi-arid regions have seldom achieved the expectations held for them. Recognizing the need to re-examine the fundamental assumptions which have governed these interventions, scientists, economists, program planners and project managers from a number of developing and other countries, gathered to exchange views on the social, economic and environmental variables affecting both pastoralists and their herds. The findings of this three-day September 1979 workshop--conclusions, heatedly debated questions and identification of priority research areas--are presented in A.I.D.'s Program Evaluation Report No. 4. Detailed case studies of livestock development interventions in Senegal, Tanzania, Kenya and Botswana, as well as verbatim questionnaire responses, supplement the general "central issues" material.

CONCLUSIONS

Participants in the workshop reached consensus on a number of substantive points: 1) Quantitative data relating to pastoral systems must be regarded as notoriously unreliable. Reasons stated are two-fold: a) Arid and semi-arid regions experience considerable instability and are subject to a complex series of environmental cycles. Data gathered at one particular time and locale reveal little about events elsewhere or at another time; and b) data-gathering techniques among pastoralism researchers are insufficiently standardized to encourage comparability. 2) Management units in the livestock development sector should be small-scale and based on existing cultural-ecological systems. A recurrent cause of project difficulty is the establishment of large, centralized managerial units which remove decision-making from the herder's realm. Successful herding depends on processing micro-ecological information quickly; water and forage resources are highly variable over time and space. 3) Herder mobility should be regarded as both a crisis-survival mechanism and an effective strategy for long-term exploitation of the range. Normal transhumant movements provide for replenishment of nutritious herbage, water, and avoidance of fly and tick-borne diseases. Migration--sudden long-distance movement--is a survival response to drought or epidemic. 4) Semi-arid rangelands can experience considerable biological and climatic stress without necessarily resulting in long-term degradation. Several years of below-average rainfall often result in only temporary declines in range production and temporary changes in species composition. 5) Livestock development interventions should support the pastoral subsistence base rather than stress commercial activities. The prime beneficiaries should be the herding or producer population rather than the urban consumers. Only when the herder has a modicum of security will he be able to contribute regularly to the national economy. 6) Monitoring and evaluation should be made integral components of every program in the livestock sector. Intensive monitoring will illuminate such issues as fluctuations in resources vs. herd demography vs. labor demands--the kinds of information needed to improve programs at the local level.

DISCUSSION

Broad areas of discussion included range degradation and productivity, program and project objectives, institution building, marketing, and livestock project case studies. The issue of range degradation/productivity was central, and the need to separate natural from socio-economic causes of resource fluctuation was seen as essential to future development planning. Specific localized areas were judged sufficiently different in ecological and land-use patterns to discourage broad generalizations about the "pastoral range." The widespread assumption that the herder induces degradation through overgrazing was felt to be unsubstantiated.

Analysis of many of the development goals showed that the outside consumer or government representative was often more a beneficiary than the pastoral herder. Increases in animal offtake tend to provide lower-cost meat for the urban populations and to augment livestock export potential--without specifically improving the herders' "quality of life." It was noted that more attention should be given to interventions which increase dairy yields and that beef-oriented projects may threaten the nutritional status of the herder.

There was general agreement on the need for thorough institution building and personnel training and for the integration of community members at all levels. The involvement of local populations as extension/veterinary agents and as information resources in designing management systems was seen as both economically and sociologically attractive.

In terms of marketing, the success record of interventions was judged frail. Two issues (both unresolved) focused on the number of animals presented for sale: 1) Can this number be markedly increased without adversely affecting the reproductive capacity of the herd and its ability to sustain a large pastoral population; and 2) are the herders price-responsive?

IMPLICATIONS FOR ACTION

The general strategy of livestock development should aim to relieve the herders of their anxiety about survival. As animals must be seen as a rational form of insurance, herders who are encouraged to sell off their stock beyond the needs of their own subsistence (including social obligations) must be granted alternate avenues of investment. Livestock interventions, which have one-sidedly focused on bovine herds, should aid in the care of both small ruminants and camels. (Mixed herds often increase survival flexibility against fluctuating water and forage resources.) Veterinary interventions remain extremely effective and the regulation of price policy may prove to be a promising area for future government support.

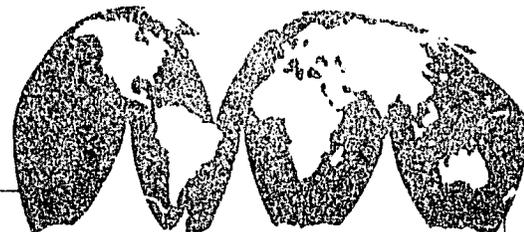
In the area of research, the workshop participants signalled the need for extensive rangeland monitoring, increased understanding of indigenous herding strategies, long-term follow-up of interventions (including their impact on local production systems), and general investigation of health and nutritional requirements of both large and small stock. Above all, it was emphasized that donors should facilitate the work being done primarily by Africans themselves. In addition to training and employing host-country persons, far more of the identification, research, and design work should be done by host country institutions.

Livestock sector projects have almost never involved the active participation of pastoral peoples in their identification, design, implementation and evaluation. Livestock sector projects have not performed very well. It was the consensus of the workshop that those two statements are closely related.



Lessons Learned

Evaluation Report Abstract



LIBERIA: RURAL ROADS

Report of A Project Impact Evaluation

by

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LIBERIA: RURAL ROADS

In February 1980, a five-person team spent three weeks in Liberia evaluating two road programs, Rural Roads I and Rural Roads II. Under these programs, all-weather laterite roads at four different locations were to be constructed or improved (some 155 miles in total length). A.I.D. provided loan funds for the road activities. The work was done by Liberian contractors under supervision of the Ministry of Public Works.

Rural Roads I was finished in 1972. Rural Roads II is behind schedule and not completed. Despite difficulties in completing construction within originally estimated times and cost levels, the roads appear to be economically justified in terms of the volume of passenger and cargo traffic they sustain.

The roads have had a mixed impact. They have stimulated positive changes with regard to education, health, and increased cash cropping. With new or improved access to markets, transportation costs for agricultural products have decreased as much as 90% in the more isolated areas.

These short-term positive benefits from the roads, however, must be balanced against some long-term detrimental impacts. Of principal concern are the lack of road maintenance, changes in the pattern of land ownership and use, and the limited attention paid to the creation of opportunities for popular participation in development activities in areas affected by the roads.

Maintenance

The long run sustainability of the roads program is most closely related to the maintenance issue. The A.I.D. roads are not maintained regularly. Consequently, vehicle operating costs from wear and tear are much higher than necessary and these costs are eventually passed on to the consumers. Furthermore, extensive periodic rehabilitation of the roads is necessary, and any positive long-term economic returns from the roads may be mitigated by the high cost of such rehabilitation.

Land Use and Ownership

Roads facilitate the commercialization of agriculture and the exploitation of Liberia's vast timber and mineral resources. As the market value of land increases, so does competition for its use. The growing pressure to obtain land is causing a fundamental change in ownership patterns. Within customary tribal law, farmers have had rights to the land they farmed.

When a road is built, politically prominent and wealthy individuals from cities as well as rural towns use their position to pressure local chiefs into selling large blocs of land. In this situation, the majority of farmers are unable to undertake the complex and costly process of surveying, registering and obtaining deeds. Though the full extent of this pattern is not known, it appears to be widespread. The net impact is that the traditional tribal

systems of land tenure are being invalidated and many farmers are losing their rights to the land. Eventually, this may have negative implications for economic security and social stability throughout the country.

Migration to cities and private and public concession areas is another serious consequence of land buying. When roads open up new lumber and mineral concessions and provide access to urban jobs, young men are drawn into wage employment. As their labor is lost, families must compensate by reducing the size of plots, extending the cultivation cycle, or hiring outside labor during peak farming periods. When farm land along the roads gets scarce, women and older people (particularly from poor families) are among the first to be sent further up-country away from the roads to make rice farms. Those who go back into the bush lose the benefits of the roads: better medical care, marketing, and educational opportunities.

Changes in land use also may have damaging effects on the environment. There is evidence that fallow periods and cultivation cycles are being altered as the planting of cash crops expands and migration takes younger men from the farm. Lumbering operations in heavily forested areas expose fragile soils to rainfall and erosion. Though perhaps indirectly attributable to road construction and improvement activities, the full impact of these changes requires further analysis if more rural roads are undertaken.

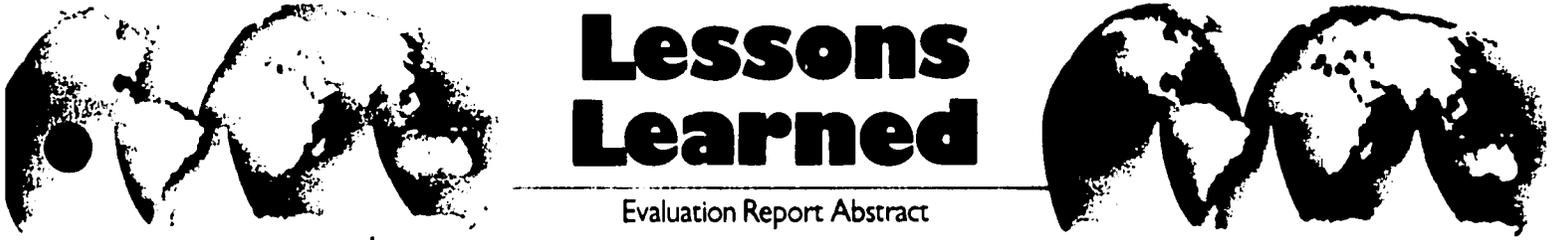
Finally, these changes have occurred in areas where the public has had relatively few chances to participate in the shaping and implementation of development policies, or to share in the benefits of increased land valuation and newer commercial activities. Greater attention to the development of institutions supportive of such participation might have resulted in a more equitable pattern of resource distribution.

Two fundamental lessons emerge from the evaluation. First, if people are to take full advantage of the access the roads offer, questions of the distribution of resources and benefits need to be addressed. In conjunction with building roads, it is necessary to build viable local communities and to ensure people's rights to land as well as to such things as credit, production and marketing assistance.

Secondly, in the 1980's, since access to land is a critical fulcrum upon which stability rests, any development activities concerning the land should be undertaken with great care. At best, small farmers' rights to land will be secured and the inherent sufficiency and stability of the rural society maintained as local communities become integrated into the national and global economies. At worst, stratification within the society will intensify as the bulk of the nation's farmers find themselves isolated from economic and social opportunities.

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Copies of the complete report may be obtained from the Administrative Assistant, PPC/E, Room 2839 NS, Agency for International Development, Washington, D.C. 20523



Lessons Learned

Evaluation Report Abstract

KITALE MAIZE:

THE LIMITS OF SUCCESS

by

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Agency for International Development

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government continued a pricing and marketing system more suited to dealing with the problems of scarcity than those of abundance. The Maize and Produce Marketing Board responded to an obvious need for increased storage capacity, for example, with too little, too late. Nor did the government take adequate measures to ensure the continued success of hybrids by: guarding the flow of critical inputs, including sufficient credit and chemical fertilizers; and being supportive of the research facilities which made the hybrids possible. The loss of the incremental benefits which the A.I.D. project demonstrated were possible by improving hybrid seed year to year, cannot be calculated--but based upon the benefits derived from the program in early years, the loss is substantial.

Smallholders have not yet exerted policy influence on the government (as did the European-dominated large farm sector prior to Independence) by forming effective organizations of their own. If government policy toward maize is to become more effective, it will require not only better long range planning but wider popular participation, especially among smallholders, in its formulation.

From the experience of hybrid maize in Kenya and from the observations of Kenyan maize growers and consumers, an A.I.D. evaluation team drew seven key lessons:

1. Simplicity and viability were the decisive factors in the success of hybrid maize.
2. The private sector was crucial in the rapid diffusion of hybrid maize.
3. Perfect equity cannot be expected even from the most successful technology.
4. The long-term continuity of foreign experts was basic to the success of the breeding program.
5. Foreign advisors and finance do not automatically create institutional capacity to perform agricultural research.
6. Pragmatism and skepticism should surround A.I.D. support for regionalism.
7. Too many lessons should not be drawn from a unique experience in one African country.

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For additional information contact the Administrative Assistant, PPC/E, Room 2839, Agency for International Development, Washington, DC 20523.

A.I.D. first became involved with hybrid maize research in Kenya in 1963, through the Organization of African Unity and the East African Community. By 1970, the yield of the original hybrids had been successfully improved by 25 percent under research station conditions. The breeding program was continuously followed with similarly positive results until the EAC broke up in 1977. Other aspects of the A.I.D. program were less rewarding. Research to improve maize protein quality and to develop varieties for low rainfall areas did not succeed. Nor did the attempt to train Kenyans and integrate them into the research operation succeed. When the last American scientist left almost 15 years after the first A.I.D. project began, the effort was not sustained by Kenya.

In 1964, the first hybrid maize seeds were released for commercial production. Hybrids produced a remarkable 40 percent increase in yield over local seed and proved appropriate to the environment of the high potential areas of Kenya, with their fertile soils, abundant rainfall, and moderate temperatures. At the time, it was assumed that African farmers would continue to use the local improved variety rather than the new hybrid--it was less prone to crop failure and it could be re-used year after year whereas hybrid seed had to be re-purchased each year. But the hybrid was clearly superior in yield, enjoyed the status of a crop used by large farmers, and small farmers soon demanded it. By 1977, the majority of smallholders in high potential Central, Rift Valley and Western Provinces grew hybrid maize and their production far surpassed large farmer output.

An aggressive private firm, the Kenya Seed Company, reproduced the seed, distributed it, and promoted it throughout the country via a network of private shopkeepers. Extension agents demonstrated the use of improved cultivation techniques. The government-supported official prices and marketing system provided incentives, particularly for large farmers, to adopt and profit by the hybrid technology.

Innovations are usually unfair in the sense they reward those who have the means to benefit from them. Consequently, it is not surprising that hybrid maize was of greater value to those farmers with sufficient land, labor and capital to fully utilize the innovation. More surprising is the large number of smallholders who did gain access to the hybrid maize technology and who have improved their food security as a result. The overall impact of the increased maize production attributable to the use of hybrid seed is that Kenya has continued to be more or less self-sufficient in maize, the country's staple food. As a result, Kenya, despite a very high rate of population growth, has not had to face some food policy problems which have confronted other developing countries. Without hybrid maize, population pressure would likely have led to a demand for more land for food crops and a reduction in less essential export crops. Hybrid maize helped to keep the price of food down in the cities, thus muting the pay demands of urban workers and keeping Kenya attractive for foreign investment.

There is a question, however, whether the government saw the increased production of maize as more of a problem than an opportunity. The



Lessons Learned

Evaluation Report Abstract

SOCIO-ECONOMIC AND ENVIRONMENTAL IMPACTS
OF LOW-VOLUME RURAL ROADS---
A REVIEW OF THE LITERATURE

by

Devres, Incorporated

A.I.D. Program Evaluation
Discussion Paper No. 7

The Studies Division
Office of Evaluation
Bureau for Program and Policy Coordination
U.S. Agency for International Development

June 1980

Agency for International Development
Washington, D.C. 20523

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Coverage of the Survey

The purpose of the literature survey on the socio-economic and environmental impacts of rural roads projects was to determine the extent of accumulated knowledge about the impacts of rural roads on local inhabitants; then to make judgments about what major questions could be answered by rapid evaluations. The survey gave special attention to evaluations done by A.I.D., the World Bank and IDB. Certain questions, previously studied, were intentionally omitted from the paper. They included the issue of choice of technology and institutionalization of rural road construction and maintenance. For the latest developments in the area of choice of technology, the reports from the World Bank's eight-year research study on the substitution of labor and capital in civil construction are most comprehensive. Also quite helpful are the compendiums and syntheses produced by the Transportation Research Board under an A.I.D. contract on various aspects of low-volume road planning, design, construction, and maintenance. Dr. Judith Tendler, in her paper "New Directions Rural Roads", issued as A.I.D. Program Evaluation Discussion Paper No. 2, covers the institutional issues in rural road construction and maintenance. 1/

Content of the Literature Survey

The literature survey concludes that we cannot generalize about the impacts of rural roads; they have no universal efficacy. Depending on the context in which they are introduced and the nature of complementary programs in the same area, rural roads can have very positive, very negative, or mixed effects. For example, agribusiness and other commercial enterprises usually increase in size and number along road corridors, as well as in communities benefitting from increased access, thus providing more employment. At the same time, land values along the roads increase and shifts in ownership and tenancy often occur with smallholders or tenants forced to move to more isolated, poorer land. The construction of rural roads tends to exacerbate existing social and economic inequities. Although new roads usually lead to increased agricultural production and most farmers benefit to some degree, generally the larger farmers will benefit most. New technologies generally reach the more wealthy farmers, thus income disparities may grow. Even within a particular category, such as health, roads can have both positive and negative impacts. Although rural roads will increase access to health centers, the shift from subsistence to cash crops may decrease the nutritional value of rural family diets. Disease may spread with increased physical mobility.

1/ Copies of World Bank reports may be obtained from Mr. Basil Coukis, Construction Industry Unit, Transportation Water and Telecommunications Department, Room D-914, World Bank, Washington, DC 20433. AID employees may obtain copies of the Transportation Research Board (TRB) publications from Mr. John Zedalis, Office of Engineering (DS/ENGR) AID, Washington, DC 20523. Non-AID employees may order TRB publications from the Transportation Research Board, National Research Council, 2101 Constitution Avenue, NW, Washington, DC 20418 U.S.A.

Rural roads encourage short-term employment, as well as medium and longer term work opportunities, but roads can replace unskilled labor needed for haulage. Transport costs are lowered through rural roads, but middlemen sometimes absorb the savings in transportation. Such costs are also a small fraction of total production costs for many products. Although roads lead to enhanced national identity and, generally, more positive government-village relationships, traditional society is often undercut, and ethnic minorities may suffer most.

The survey presents these and other findings on rural road impacts in the following areas: changes in agricultural production and crop composition; use of new technologies; outreach of agricultural service institutions; growth of new agro-industrial, industrial, and commercial enterprises; employment; land values, tenure, and land use; transport costs; marketing and consumption patterns; effects on health, nutrition, and education; social change; urbanization, dispersion and migration; and environment.

Implications of the Survey for A.I.D. Programs

The message of the survey is not that A.I.D. should cease rural road activity. However, the relatively better-off and more powerful seem to benefit more from road construction than the poorer segments of the rural populations unless special attention is given to the socio-economic and political context in which roads are designed. The survey does suggest the need for improvements in the way A.I.D. plans and implements rural road activities. First, before proceeding with road projects, A.I.D. should be clear how the impacts of the roads will be skewed by prevailing social, economic, and environmental conditions, such as land ownership patterns, marketing systems, the structure of transport industries, and cropping patterns. Adjustments should be made to ensure that the poor will benefit or at least will not be harmed by such projects. Second, if there are complementary activities in the same area as the new roads, A.I.D. should determine the nature of the net impact of those programs on small producers. If an agricultural pattern seems destined to have a net negative impact on small producers, the addition of roads will exacerbate, not eradicate, those negative impacts. If new or improved roads will increase the outreach of agricultural extension agents, care should be taken to see that smallholders and tenant farmers also benefit. Third, road projects and sites selected should be planned to target benefits more carefully on poorer groups. For example, road projects can be undertaken in areas where a fuller set of other development activities (other infrastructure as well as productive and social services) are reaching the poorer population. Implicit in these findings is the conclusion that if equity is a primary consideration, national rural road programs that do not take into account local circumstances should be avoided. Fourth, similar to the goal of creating host-government capacity for rural road construction and maintenance, A.I.D. should strive as part of rural road projects to develop host-country capacity for analysing local and potential socio-economic impact. Host countries should be able to determine who will benefit from roads and to formulate

strategies ensuring that the intended beneficiaries are indeed reached. Until host governments or institutions develop such capacities, A.I.D. should provide this analysis and planning.

Conclusion

As part of A.I.D.'s FY 1980 program of impact evaluations of development projects in six sectors, PPC/E is coordinating a series of rural road impact evaluations in Latin America, Africa, and Asia. After these studies are completed, PPC/E will prepare a summary on the conclusions of those reports and recommendations for changes in design and implementation of A.I.D.-funded rural road projects. This summary paper is intended to cover institutional issues and maintenance as well as benefit incidence questions and should help determine whether the implications of the literature survey for improving A.I.D.-funded rural roads projects are valid.

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Copies of the complete report may be obtained from the Administrative Assistant, PPC/E, Room 2839 N.S., Agency for International Development, Washington, D.C. 20523.



Lessons Learned

Evaluation Report Abstract

SMALL FARMER MARKET ACCESS

(Pico y Pala)

Report of a Project Impact Evaluation

BY

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December 1979

COLOMBIA
SMALL FARMER MARKET ACCESS
(Pico y Pala)
IMPACT ASSESSMENT

EXECUTIVE SUMMARY

In November 1979, a four-person team spent three weeks in Colombia evaluating the nearly completed Small Farmer Market Access Project better known as Pico y Pala (Pick and Shovel). This was the first in the series of impact evaluations initiated under the Administrator's directive for A.I.D. to carry out impact evaluations largely using direct hire staff. The project will result in the construction of 59 all-weather, unpaved mountain roads of 8 kilometers average length. They are being built under the direction of a Colombian government entity, Camino Vecinales, but with most of the work performed by the small farmers and landless rural laborers who were the intended beneficiaries of the completed roads.

Although long-term questions remain, the overwhelming character of the short-term results leaves little doubt of the project's positive impact. The keystone of this success was the sharp reduction in transport costs following the switch from animal to motorized transportation. As transport costs fell, economic incentives increased and production rose without changes in policy or such services as agricultural extension. When it was in the farmers' interest to grow more, they grew more; in rural Colombia at least, they did not have to be taught or exhorted to do so.

In fact, the flow of public services expected from other government entities, such services as health and education, has not yet followed the road as anticipated. Any impacts in these areas resulted from increased capacity of those heretofore isolated to seek services in town.

There are three long-term concerns about the project: maintenance, environmental impact and replication.

Maintenance

Although the roads' beneficiaries can and do carry out sufficient first-line curative maintenance to keep the road operational -- such as clearing off landslides -- there is no budget for the large-scale maintenance required in this geologically young and unstable area. There are occasional major landslides or collapses that the campesinos cannot handle without outside resources, and there is no mechanism to deal with this eventuality. Preventive maintenance has also received insufficient attention.

Environmental Impact

To protect against erosion and siltation of the rivers in the manner recommended by U.S. consultants would require standards and commitment of resources not now applied to the major highways in Colombia, let alone to this tertiary road system. There are signs of erosion though not yet of the more insidious siltation. On similar roads constructed under a previous project five years ago, regrowth and recovery were observed. It is accepted that serious environmental degradation can result from road construction in mountainous terrain but the gravity of the threat in Colombia and the appropriate response in the context of low-cost road construction must be the subject of further analysis (See Annex D).

Replicability

The project is considered a success at the grass root level, and by important Colombian officials. It is an example of a road construction project successfully designed to use hand labor in a cost-effective manner, and it provides a replicable model for the contracting, management and payment of unskilled workers. The knowledge, institutional capacity and proof of efficacy now exist for this program, but political support may be lacking and its continuation seems uncertain. Colombian funds allotted to the program in 1980 are lower than in 1979. Figures are unavailable for subsequent years. Unless additional funds are budgeted or external resources applied, no new starts of Pico y Pala roads will be possible. If so, the experience will have been of little but academic interest. A continuation of this program in Colombia, or its replication elsewhere under comparable conditions, however, would represent a refinement in our thinking about rural development: a move away from the complexities of integrated rural development to the sparseness and selectivity of attack on key constraints (See Annex B).

Since the roads completed under the project are all less than a year old, a follow-on evaluation is recommended in 1983.

Copies of the complete report may be obtained from Ms. Sandra Malone, PPC/E, Room 2839 NS, Agency for International Development, Washington, DC 20523.



Lessons Learned

Evaluation Report Abstract

A.I.D.'s ROLE IN INDONESIAN FAMILY PLANNING:
A CASE STUDY WITH GENERAL LESSONS FOR FOREIGN ASSISTANCE

by

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Report of a Program Evaluation
Sponsored by

The Agency for International Development
Asia Bureau
Program and Policy Coordination Bureau
and
Development Support Bureau

July 1979

Evaluation Summary

Overview. Since 1968 A.I.D. has provided \$43.2 million in grants and \$14.3 million in loans to the Indonesian National Family Planning Program. During the intervening years, prevalence of contraceptive use in Indonesia has increased dramatically and fertility has decreased far more rapidly than was predicted even a few years ago. The national program has clearly played the determining role in this decline. Program achievements on Java and Bali, the two densely settled islands that contain 90 million of the nation's 135 million people, are referred to by respected authorities as a "success story probably unrivaled in family planning history." It is widely acknowledged that A.I.D. support has been a major element in the program's success to date.

Program Impact. Indonesia's population was 40 million in 1900 and had soared to 117 million by 1969 when the national program was launched. During the 1970-75 period the annual population growth rate averaged 2.4 percent. It has since been brought down to 1.9 percent. The fertility rate on Java and Bali, where the program has until recently been concentrated, has dropped 15 percent. Contraceptive prevalence on the two islands now averages over 35 percent and reaches over 85 percent in some villages. This has been achieved through voluntary participation and without material incentives for acceptors.

Financial Inputs. Funds provided to the program through 1978 totaled \$208 million. Of this the government of Indonesia provided 50 percent, A.I.D. 28 percent, and other foreign donors 22 percent. In the early years Indonesian contributions constituted only a small portion (e.g., 4 percent in 1968), while A.I.D. contributed the major portion. The Indonesian contribution has climbed steadily to 60 percent in 1978. This indicates growing country commitment but also the great importance of A.I.D. funds in the program's early years.

Country Commitment, Capability, and Context. The Suharto government has been unambiguously committed to fertility reduction as an integral part of overall national economic development. Toward this end it created a semi-autonomous national family planning coordinating board, the BKKBN. Extra-ministerial yet capitalizing on existing social and political systems, the BKKBN has developed the administrative capability, as well as commitment, to achieve measurable impacts. It has done so by providing services at the village level and by tailoring its program to indigenous village organization, leaders, and cultural values. Program achievements are especially remarkable in view of the conditions usually assumed to militate against family planning acceptance--a national per capita income of only \$180 per year, an infant mortality rate over 100 per 1,000 live births, 50 percent illiteracy among adult women, and a wide diversity of Islamic and other intensely religious and tradition-minded linguistic and ethnic groups.

A.I.D. Effectiveness. A.I.D. has been successful in helping Indonesia's program to reduce population growth because it was able to provide necessary resources at the right time; this has enabled the national program to meet and create popular demand and to reward and further build political commitment at all levels. A.I.D.'s ability to be effective has derived from four essential sets of conditions.

*AID/Washington provided consistent support but delegated authority to the mission for virtually all program decisions. It always made readily available sufficient grant funds, technical assistance, training, and commodities to meet and even anticipate the needs of the program and to permit flexibility in the field.

*The USAID mission in Jakarta assigned high priority to population, created an Office of Population reporting directly to the mission director, and made it possible and attractive for key staff to remain in Indonesia for three tours of duty. Strong goal rather than procedure orientation and effective internal delegation of authority by the mission leadership permitted the office the flexibility and support necessary for creative innovation.

*The mission's population office has relied primarily on direct-hire staff who have been individually selected for their population and Asian competency and who have developed facility in the Indonesian language and familiarity with the Indonesian context. The staff has evolved a strategy and mode of close collaboration with the Indonesians that permits them to tailor A.I.D. resources to the specific needs of the program and to direct them to the greatest targets of opportunity.

*A mechanism, based on local-cost programming and project implementation letters, was developed by the mission population office to move resources quickly to provincial and rural activities where there is high probability that the resources will be used effectively. The ability of the office to provide funding for local initiatives within weeks (rather than months or years) has been highly instrumental in stimulating local participation, promoting innovation, and building political commitment. It is this mechanism, together with the successful management-oriented data system developed by the BKKBN and the A.I.D. mission, that has permitted effective decentralization. If only one element were to be singled out as most important in explaining the effectiveness of A.I.D. support to this particular program, it would certainly be the use of this funding mechanism.

Lessons Learned. A.I.D. support to Indonesian family planning is regarded as one of the U.S.'s most successful foreign assistance efforts. Many lessons can be extracted and should be transferable to programs elsewhere. Most broadly they derive from putting basic development principles into practice. In particular they concern the mechanism for fast, accurate funding. It is the goal-oriented staff that most distinguishes A.I.D. support to the program. Legal and administrative provisions for the procedures are standard in the A.I.D. system. The exact importance of certain host-country conditions to the effective use of the mechanism remains to be determined. Its effective use depends, however, upon having a resident staff and upon that staff being given adequate support and authority to act.

B. Pillsbury, PPC/E, 9/15/79

For additional information contact Ms. Malone, PPC/E, Room 2839 ,
Agency for International Development, Washington, DC 20523



Lessons Learned

Evaluation Report Abstract

Tunisian Wheat Development Program

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

October 1983

Tunisian Wheat Development Program

As part of an A.I.D. effort to assess the impact of its agricultural development programs, an interdisciplinary team conducted an evaluation of the wheat development in Tunisia in April 1982. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

The Tunisian Wheat Development Program (Project Ble) was designed and implemented from 1965 to 1977 by AID, the Ford and Rockefeller Foundations, the International Maize and Wheat Improvement Center (CIMMYT) in Mexico, and the Government of Tunisia. It was conceived in 1965 at a time when the economic chaos following independence from the French prompted the Government of Tunisia to explore every avenue to reverse the decline in agricultural production, particularly of food. Development of Tunisian institutions and training of Tunisian staff were priority goals to fill the gap created by the exodus of the French civil servants and other European farmers and entrepreneurs in 1964. The ultimate goal of the Government was and remains "self-sufficiency in food production."

The purpose of the program was to introduce and adapt to the Tunisian environment and climate the new semi-dwarf high-yielding wheat varieties that had been developed at CIMMYT in Mexico. The other important purpose of the program was to train Tunisians in agricultural research and extension methods as a means of developing institutional capabilities for Tunisia to carry out research and extension activities alone.

The impact of the program has been slow but positive. Much of the impact is being felt now, some five years after the program was phased out and 17 years after its conception. If one single factor had to be identified as the program's most important contribution, it would be the development of the program for advanced degree training, particularly to the Ph.D. level. The research capability developed by this advanced training has become most effective in the past three years. The impact is being demonstrated in research results; in an effective extension program; in improvements in institutional capabilities in research, extension, and education; and in farmers' increased acceptance of new varieties and improved technology, resulting in increased yields and production.

Training has enabled Tunisians to successfully continue research and extension activities without assistance after the program was phased out. Nineteen Tunisians were trained in the United States to the level of M.S. and Ph.D. degrees in agricultural sciences. This was supplemented by practical training of 55 other Tunisians at CIMMYT in Mexico, in Australia, and in Tunisia. Of the 19 who received advanced training, 13 are working directly or indirectly in

Tunisian Wheat Development Program

the cereals program in Tunisia; 11 of these are directly involved. Of the 19 Tunisians, one is continuing advanced studies in the United States and five are working abroad with international or other organizations. Four of the Tunisians who received Ph.D. degrees are involved in research at the National Agricultural Research Institute of Tunisia (INRAT) while teaching at the National Agricultural Institute of Tunisia (INAT, the national agricultural university). Two Tunisians trained to the M.S. level are participating in the research program at INRAT.

During the life of the program, five new bread wheat and five new durum wheat varieties were developed and introduced to farmers with varying degrees of success. After the program was terminated in 1977, Tunisians had been trained under the program continued to develop varieties with characteristics that improved on those developed earlier. In 1980 and 1981, two improved varieties of bread wheat and two improved varieties of durum wheat were developed and put into use. Some of these later varieties were more resistant to diseases and drought than earlier varieties, and consequently were more acceptable to farmers.

An extension and farm demonstration system and program were developed in the beginning of the Wheat Development Program to work closely with the research activities to extend results to farmers and to feed back problems to research scientists. The Technical Division, established in the Office of Cereals, successfully carried out its functions during the life of the program. It is now staffed with trained Tunisians and is still operating a successful program.

As a result of the program, Tunisia's cereal production (wheat and barley) was greater during the 11-year period 1971 through 1981 by 5.302 million metric tons than during the previous 11-year period. Despite population growth, annual per capita production of cereals increased from 104 kilograms in 1970 to 160 kilograms in 1980, using average annual production figures for the two periods and the population levels of 1970 and 1980, respectively. Furthermore, the increased production was achieved on an area of land less (by over 200,000 hectares in each year, 1980 and 1981) than in the previous four years. The increased production of cereals saved the Government of Tunisia the foreign exchange costs of annually importing 299,000 metric tons of durum wheat, 77,000 metric tons of bread wheat, and 106,000 metric tons of barley that would have been required otherwise during each year 1971 through 1981. The value of this amount of annual imports at 1981 prices would have been \$125,944,000 (cost, insurance, and freight in Rotterdam, imported from the United States). This was made possible at a total cost to the U.S. Government, Rockefeller and Ford Foundations, and less than \$3.5 million in technical assistance.

Tunisian Wheat Development Project

The program has resulted in other benefits to Tunisia. It contributed to increased per capita consumption of cereals, mostly in the form of increased use of commercial bread and noodles. While no national data were available to confirm the fact, there was evidence that farmers had been integrated into the money economy. Cereal farming had become mechanized and farm families were purchasing prepared foods such as commercial noodles and bread.

The positive impact was not without some negative effects. Rural migration of men had led to a change in the role of rural women, with an increase in their participation in farming and rural industries, and a decrease in their role in home preparation of food. While this may be viewed as a positive gain for women, it has had one negative result. Increased use of purchased, prepared foods (principally noodles and bread) instead of home-prepared food has decreased the nutritional levels of farm family daily diets.

Not all the institutional goals have been achieved. Integration of research and extension has not been acted on. The planners had sought flexibility in management, financing, decision-making, and action by establishing the program under the parastatal, semi-autonomous Office of Cereals, a commercial organization concerned with the purchase and sale of cereals. This office, which is outside the Agricultural Services of the Ministry of Agriculture, was not impeded by the bureaucratic constraints of other agencies. At the same time, it did not play a role in providing technology to farmers. During the life of the program, activities were integrated through personal cooperation of scientists who cut across institutional lines. This system continues today.

Despite these weaknesses, the institutions in research, education, and extension have developed basic capabilities, resulting directly and indirectly from the program, which permit them to continue successful activities. However, the goal of self-sufficiency in food production has not been achieved. This goal is illusory and has tended to overshadow the progress that has been made, as continued growth of population and increased per capita consumption of cereals have widened the food gap, requiring increases in imports. Tunisia's overall goals of using its resources to comparative advantage, and of producing higher valued crops on the better land (under irrigation where feasible) for export and to supply the thriving hotel-tourist industry are both aimed at achieving a balance in international trade of agricultural products, which makes good economic sense. Achievements in cereal

Tunisian Wheat Development Project

production are due not only to the scientific progress achieved under this program, but also to improvements in institutions, economic conditions, and policies in the agricultural sector.

Copies of the complete report, A.I.D. Project Impact Evaluation No. ? , Tunisian Wheat Development Project (? ? ? ? ?), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

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Lessons Learned

Evaluation Report Abstract

U.S. AID To Education In Paraguay: The Rural Education
Development Project

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

June 1983

U.S. AID To Education In Paraguay: The Rural Education
Development Project

As part of an A.I.D. effort to assess the impact of its education programs, an interdisciplinary team conducted an evaluation of the rural education development project in Paraguay in 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

In 1970, Paraguay's education sector was characterized by inefficiency and inequitable access. Less than 18 percent of those entering first grade completed the primary cycle. Teachers were poorly trained, poorly paid, and in very short supply. Classrooms were overcrowded and underequipped, particularly in rural areas. The curriculum was unsuited to the skill needs of a growing economy. The Ministry of Education (MOE) was too heavily centralized to be responsive to local needs.

In an effort to make schooling more available and more efficient for the rural student, AID in 1970 committed \$4.2 million in loan funds and \$300,000 in grants to the Rural Education Development Project (REDP). Under this project, schools were built, curricula were revised, a textbook production/distribution system was introduced, and the MOE was restructured so as to shift greater administrative responsibility to local Regional Education Centers (REC). These RECs, in addition to performing administrative functions, provided pre- and in-service teacher training, served as model demonstration primary and secondary schools using the new curricula, and were the medium for diffusing reforms to the formal education system at the local level.

The RECs are highly successful. They have a corps of teaching, administrative, and support personnel within each local unit. They use the new curricula in their schools and teacher training programs. In contrast to most secondary schools, they are located in rural areas, thus enabling rural students to continue with their education. They are well provided with teaching materials. They have become effective decentralized units of administration as well, with responsibility for teachers' salaries, construction, and budget allocations.

Implementation of curriculum reform beyond the RECs has proven weak. Studies indicate that the new curricula improve achievement scores, retention and promotion rates, and arouse student interest more effectively than the traditional curricula. However, the greater workload imposed by the new curricula is a source of dissatisfaction among teachers. They are among the most poorly paid professionals in Paraguay, and receive no compensation for the additional work they must do. The resulting diminished incentive has slowed implementation of curriculum reform.

U.S. AID To Education In Paraguay:
The Rural Education Development Project

This suggests that unless the percentage of the national budget allocation by a host government to education is at a realistic and effective level, education sector development will remain erratic, reform will be sporadic, and any real growth will remain dependent on irregular donor assistance. In Paraguay, the MOE's budget is so inadequate that necessary instructional materials are in short supply, while the salary gap between the teaching profession and the private sector is widening. This continuing underbudgeting threatens to unravel the achievements of the REDP.

While the total number of schools built was less than planned due to rising construction costs, the schools that were built greatly improved the rural students' access to formal education. Placing schools nearer to students afforded them more time to assist in farmwork, reduced seasonal dropout, and reduced the discomfort and transportation costs of commuting. Constructed schools have been well used; all operate two-day shifts, while one-half conduct evening classes as well.

The REDP is an excellent case to document the impact of local citizenry on educational development and reform. The REDP did provide financial resources for school construction, but the communities continue to maintain and to improve upon school plant facilities.

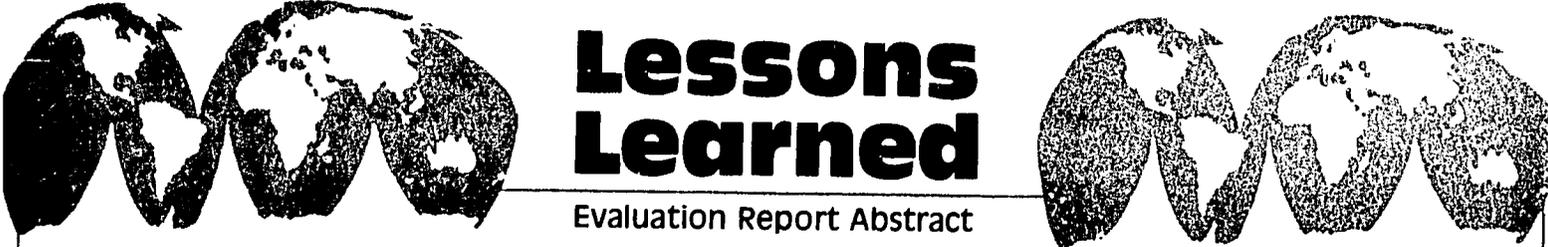
AID's assistance to Paraguayan education has had an impact on both the quality and equity of the education system. A much better educational program is available to many more students, and it is delivered by a system and a staff that are receptive and responsive to change. However, the reform continues to be limited in scope and implementation. The Paraguayan education system is an integral part of the dynamics of Paraguayan development. The 1970 loan/grant effort was a culmination of U.S.-Paraguay collaboration in education dating back to 1945, and that collaboration shaped the beginning of modern education in Paraguay. The lesson of success in Paraguay is an old one for AID: in institution-building and policy redirection, consistency of purpose and effort is essential and, in many cases, is the major determinant of success. There is, however, a next step: continuation and expansion as well as further refinement.

U.S. AID To Education In Paraguay:
The Rural Education Development Project

That step must be taken by the Government of Paraguay. While aid donors may contribute to this effort, the Government must clearly assume financial responsibility and a strong leadership role.

Copies of the complete report, A.I.D. Project Impact Evaluation No. 46, U.S. AID To Education In Paraguay: The Rural Education Development Project (PN-AAL-017), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

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Lessons Learned

Evaluation Report Abstract

PL 480 Title I: The Egyptian Case

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

June 1983

PL 480 Title I: The Egyptian Case

As part of an A.I.D. effort to assess the impact of its food assistance programs, an interdisciplinary team conducted an evaluation of the PL 480 Title I project in Egypt in February 1982. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

Background

Food aid has been a major component of U.S. foreign assistance to Egypt since 1955. Since 1960 the United States has shipped over \$42.3 billion (18.9 million metric tons) worth of wheat to Egypt under all three PL 480 titles. Following a break in flows between 1967 and 1974, PL 480 shipments increased to a level of about 1.5 million tons by 1976 and have continued at about that level to the present.

This evaluation focuses on the impact of PL 480 Title I assistance on Egyptian economic development, U.S. foreign policy objectives, and U.S. trade and market development objectives. In addition, the evaluation examines the effectiveness of AID's management and use of PL 480 Title I resources as a development resource.

The impact of U.S. PL 480 Title I assistance was assessed in the context of Government of Egypt (GOE) policies, the objectives of U.S. law and policy, the historical evolution of the program, and Egypt's agricultural performance.

Major Conclusions

1. Domestic Production and Food Supply. The objectives of the GOE with respect to food and agriculture are to achieve food security through increased agricultural production, to keep basic food (bread) cheap and plentiful, to earn foreign exchange through cash crop exports (cotton), and to keep production costs and prices low.

The GOE believes that the ready availability of cheap bread is a key factor in the country's stability and that an essential GOE responsibility is to ensure this availability. Supplies are ensured through private "unencouraged" local wheat production (1.5 million metric tons) and imports (6.5 million tons). Of these imports, PL 480 Title I accounted for 1.5 million tons in 1981, about 17.5 percent of total consumption. Flour and bread prices to consumers are fixed by the Government and subsidized by the GOE at a cost of \$800 million per year.

PL 480 Title I: The Egyptian Case

The Government's dual policies of ensuring a virtually limitless supply of wheat flour/bread and subsidizing consumer wheat flour/bread prices combine to reduce the economic incentive to farmers to produce wheat. To the extent that PL 480 reduces the cost to the GOE of imports in support of its wheat flour/bread policies, it contributes to the implementation of policies which act as disincentives to farmers. To determine whether PL 480 acts as a disincentive, one would have to know that in the absence of PL 480, imports would decrease and prices would rise. Most GOE officials outside the Ministry of Agriculture insist that if PL 480 were not available, imports would continue at similar levels, albeit at greater expense to Egyptian public sector resources.

Because the program of PL 480 assistance was interrupted between 1967 and 1974, it is possible to examine the changes in price policy and supply response during a period without food assistance. The evidence shows that the GOE did increase producer prices and that farmers did respond by increasing both productivity and overall production of wheat during this period. When PL 480 was re-introduced in 1975, producer prices were allowed to decline relative to other crops and relative to world market prices. Production also leveled off. Egypt's wheat imports expanded significantly to the present level of 6.5 million metric tons. Although PL 480 Title I accounts for about 23 percent of total imports, the GOE's ability to finance this high level depends on the availability of foreign exchange earnings, principally from oil exports, the Suez Canal, and remittances from Egyptians overseas. Since all of these sources are more or less flat or declining, the importance of PL 480 in helping offset the import bill may increase in the future.

It is unclear whether Egypt enjoys a comparative advantage in wheat production. Certainly under the present price regime, domestically produced wheat may be assigned more value as fodder for animals and in brick making than for human consumption. Farmers do appear to follow their own "food security" program, although very little domestic wheat is marketed. There is little disagreement that Egypt can increase productivity in wheat through application of existing improved technology. An experiment sponsored by the GOE and AID subsidized a sample of wheat farmers throughout Egypt to adopt new varieties and improved agronomic practices. Yield increases were in the order of 50 percent or higher. However, there is little economic incentive to adopt these practices. Egypt cannot meet its food security goal through self-sufficiency in wheat. Population pressure, improved incomes, and changing consumer preferences combine to increase demand for wheat and wheat flour. This pressure, combined with expanding claims on available foreign exchange earnings, may more than anything else force the GOE to find ways to improve domestic wheat production.

PL 480 Title I: The Egyptian Case

An analysis was done of four options available to the GOE: (a) maintain the status quo; (b) maintain the consumer subsidy on wheat, while raising the producer price to international levels and increasing Government procurement levels; (c) remove the current subsidy, allowing prices to rise to international levels, but continuing PL 480 shipments; and (d) allow prices to rise and curtail PL 480. This analysis is not intended to assess the social and political impact of these options. It also assumes that if PL 480 were curtailed, no other government would step in and provide similar support. Nevertheless, it is useful to illustrate the budget and foreign exchange costs and savings of the array of possibilities which the GOE may consider.

2. Distribution of Wheat. The GOE wheat distribution system via the Ministry of Supply (MOS) works to provide all parts of the country with wheat and wheat products. Although differences do exist between supplies to urban and rural areas, these were not found to be serious. There is some evidence to suggest that wheat may be in excess in some areas, leading to a perception of wheat as a "free good." One of the effects of this GOE system has been to strengthen considerably the MOS control over all elements of the food chain, from importation to final distribution. Since it is administratively easier to operate the system as "through-put" for imported grains, the team observed that it may be difficult to reorient procurement and distribution to a system that relies on increased local production. It is clear that this system has eliminated or severely reduced regionally centered private marketing and processing of wheat and wheat flour.

3. Nutritional Impact of PL 480 Title I. It is difficult if not impossible to disaggregate the effect of PL 480 wheat from the total supply which the GOE makes available to Egyptian consumers. There are inferential data to show that increased per capita caloric intake has reached nearly 2,800 calories per day. Because a high percentage of this is in the form of carbohydrates, there is some indication of increased obesity and diabetes. On the positive side, there is research evidence to indicate that the infant mortality rate fluctuates positively in relation to wheat supply.

4. Impact on the GOE Budget. As GOE expenditures have increased since 1975, the share of the budget supported by PL 480 Title I local sales proceeds has declined from 5.5 percent in 1976 to 2.4 percent in 1981. If all local sales proceeds were assigned to the two principal ministries for agriculture, the Ministry of Agriculture and the Ministry of Irrigation, the share would increase to about 40 percent of those budgets. Of course, locally generated proceeds are not allocated to specific accounts.

PL 480 Title I: The Egyptian Case

A more obvious finding is that food aid, as does any form of foreign assistance, relieves foreign exchange constraints.

5. Self-Help Agreements. The self-help sections of PL 480 agreements through 1979 were written in general and ambiguous terms, and thus PL 480 did not have a maximum impact on development through these sections. Indeed, self-help agreements have been poorly monitored and do not reflect efforts beyond existing project agreements. Policy dialogue, however, showed some improvement beginning in 1979, as did the degree of Egyptian coordination and the specificity of agreements. Greater effort is needed to clarify the Mission's responsibility for management of the reporting process.

6. Foreign Policy Objectives. U.S. food aid has helped ensure Egyptian stability, which in turn permitted the Mideast peace process, a top U.S. foreign policy priority, to proceed. The GOE considers PL 480 to be a critical element in the U.S.-Egyptian relationship, and views the size of the annual allocation as a barometer of U.S. support.

7. Market Development. PL 480 Title I has had mixed results as a market development tool in Egypt. Commercial purchasing decisions are based primarily on price and availability, not on Title I levels.

Issues and Conclusions

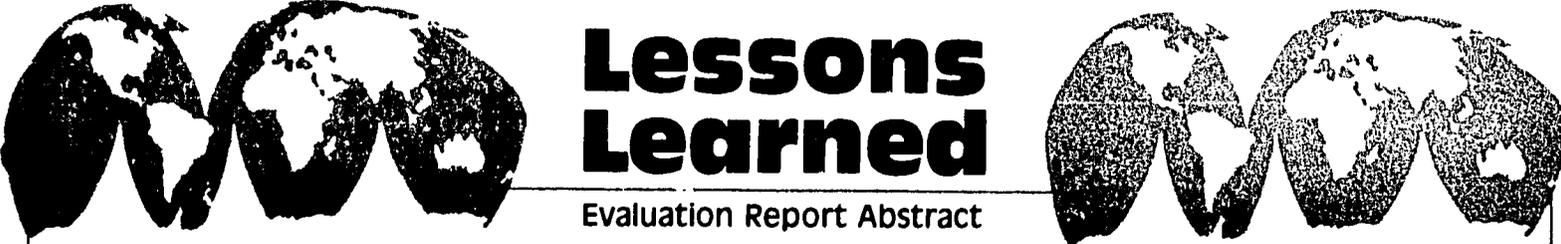
PL 480 Title I has been an important symbol of U.S. commitment to Egypt. It combines well with Egypt's past and present food policy which has worked to provide the Egyptian consumer with increasing amounts of cheap bread. The system of subsidies, however, has worked to the detriment of wheat production. As long as Egypt's foreign exchange position was improving, PL 480 Title I represented a declining portion of the overall food bill. This may change as foreign exchange earnings decline or level off.

PL 480 poses four objectives: indigenous economic development, support of U.S. foreign policy aims, U.S. market development, and humanitarian assistance. In the best of situations, these objectives are difficult to attain. In the Egyptian context, the foreign policy objective has been overriding. Perhaps this is necessary. While efforts have been made to encourage commercial purchases of wheat, wheat flour, and other commodities, the evidence suggests that Egypt (like most countries) bases purchasing decisions primarily on price. However, the indirect impact of PL 480 was evidenced by the recent U.S. sale of one million tons of wheat flour to Egypt, which was facilitated by our long PL 480 presence there; the Egyptians were familiar with U.S. wheat, U.S. Government-related export procedures, U.S. shippers, and U.S. Department of Agriculture officials. Finally, there appears to be growing recognition by the GOE of the fact that Egyptian food production has suffered from

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neglect and inappropriate policies. The U.S. Government should continue to encourage any effort by the GOE to adjust its agricultural pricing policy. The record over time seems to indicate that although foreign policy dialogue was facilitated by PL 480, there was little apparent interest in Washington, our AID Mission, or the Egyptian Government in specific economic development efforts related directly to our PL 480 program. Improvement in this area is both possible and desirable to ensure that our largest Title I program is in full compliance with the letter and spirit of recently legislated amendments to PL 480 (e.g., the Gilman-Solarz amendments), as well as to the development policy initiatives of the U.S. Government.

Copies of the complete report, A.I.D. Project Impact Evaluation No. 45, PL 480 Title I: The Egyptian Case (PN-AAL-015), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

West Africa Rice Research and Development

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

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West Africa Rice Research and Development

As part of an A.I.D. effort to assess the impact of its agricultural research programs, an interdisciplinary team conducted an evaluation of the rice research and development project in West Africa in October 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

The West Africa Rice Development Association (WARDA) was created in 1970 to increase rice production in the 15 member countries through research and training. Importation of the rice necessary to satisfy an increasing demand for what is becoming the food staple in urban areas is a drain on foreign exchange, yet the climate and ecology of West Africa are suited to rice production.

A decade after its creation, one cannot hold WARDA responsible for the fact that West Africa is importing more rice than ever. WARDA was encouraged to look for technological solutions to this deficit, not for economic policy solutions. But a technical solution cannot be divorced from its economic environment. One of the greatest weaknesses of WARDA's research design is its tendency to separate these two. Some of WARDA's research results demonstrate the disadvantages of this tactical separation, laid on the association by its founding charter and by the orientation of the donor and member state support it has received. Nevertheless, because of its scientific professionalism, WARDA, through its development department, has discovered a politically acceptable way of targeting project identification research design on specific situations that are not only ecologically but also economically conducive to expanded rice production.

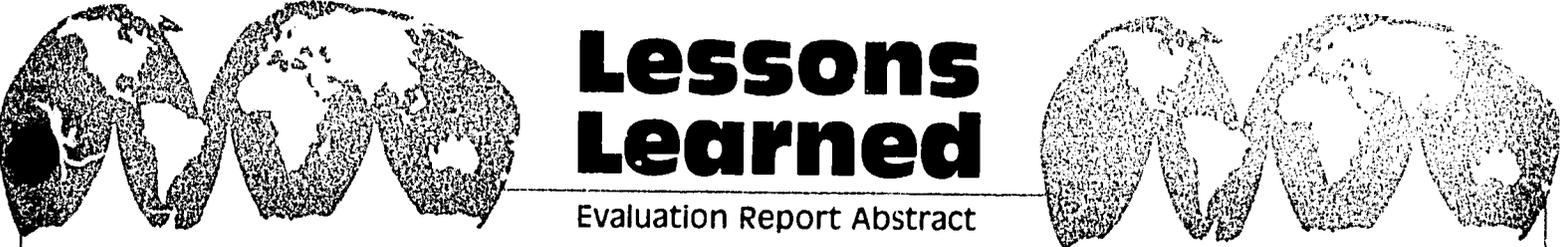
Much of the more recent, second phase of AID support to WARDA (project 698-0429) is built upon WARDA's evolving skill in contextualizing rice research and development inputs such that, for specific contexts, their outputs are not hindered by the widespread economic constraints on rice production in West Africa. Therefore, with the advantages of hindsight, therefore, we are evaluating the first-phase AID/WARDA project (698-0382), not only in terms of its own stated goals, but also to identify the part it played, if any, in helping WARDA define this more successful, interdisciplinary role for itself.

Under the first-phase project, AID supported (1) two special research projects--one for mangrove rice at Rokupr, Sierra Leone, and one for deepwater/floating rice at Mopti, Mali; (2) a training center adjacent to Liberia's Agricultural University at Fendell just outside of Monrovia; (3) participant training in the

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United States for key WARDA researchers; and (4) a rice economics study undertaken in conjunction with the Food Research Institute at Stanford University.

Copies of the complete report, A.I.D. Project Impact Evaluation No. 44, West Africa Rice Research and Development (PN-AAL-012), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Bangladesh Small-Scale Irrigation

Report of a Project Impact Evaluation

by

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April 1983

Bangladesh Small-Scale Irrigation

As part of an A.I.D. effort to assess the impact of its irrigation programs, an interdisciplinary team conducted an evaluation of small-scale irrigation programs in Bangladesh in February 1982. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

This project is an example of appropriate technology constrained by institutional weaknesses. In 1976, AID entered into an agreement with the Bangladesh Government to provide hand tubewells (HTW) to farmers with small land holdings throughout Bangladesh. The Bangladesh Krishi Bank (BKB) and the Government's Integrated Rural Development Program were to handle distribution through credit and cash sales. A joint Bangladesh-AID Implementation Committee was to provide overall project direction.

The project attempted to take advantage of a technology already widely accepted in Bangladesh and adopted to its particular climatic and geologic conditions. The HTW is simple to install and maintain, and makes use of the cheap labor available in the countryside. Most important, the HTW is inexpensive and, with credit available, would be affordable by the target population--farmers who own less than three acres.

Institutional weaknesses plagued the project from the beginning. The initial project design did not adequately address some very important problems. These included the importation of iron for manufacturing the pump in Bangladesh, the exact design of the pump, the production of the pump by local foundries, and the distribution system--particularly the credit system which was to ensure distribution to the poorer farmers. As will be seen, most of these problems have been worked out, but only after significant project delays.

HTWs in use appear to more than pay for themselves in a very short time. They permit farmers to irrigate a third, dry-season crop that would not have been planted but for the availability of the water that the pumps supply. Bangladesh is particularly suited to the use of these pumps. It has an extremely high water table and the land will support a third crop in the late winter months if water can be provided.

Most distribution problems have been worked out satisfactorily. The Bangladesh Agricultural Development Corporation, now the project's primary implementing agency, has established a network of zonal and subzonal stores which sell the HTWs to dealers who in turn sell them to farmers. Problems with the sale and distribution system chiefly concern the lack of spare parts and the inadequacies of the credit system.

Bangladesh Small-Scale Irrigation

Although some questions have been raised about pump design and production, they are not very significant. It has been argued that other designs would be preferable. While these arguments have some merit, they do not detract from the fact that some 180,000 HTW pumps are in use. Most HTWs are used primarily for agriculture during that part of the year when the third crop is growing. The rest of the year, they may be stored or used for domestic purposes.

The Small-Scale Irrigation Project was designed to distribute HTWs to farmers who owned three acres or less. To ensure that the target group was reached, a paperwork system of certifications and documentation was created. The paperwork proved to be a hindrance to distribution and did not achieve its purpose of limiting credit or cash sales to the smallest land holder. More than just a paperwork problem, institutional inadequacies with the farmer credit system (along with farmer biases against using that system if it required, as it did, his land as collateral) made the primary beneficiary those farmers who owned three to seven acres. Although poor by most standards, these farmers are at the higher end of the landholding scale in Bangladesh. An interesting side effect of the project is the recent development of a market for second-hand HTWs. Sold at a lower price, these used pumps are gradually making their way down to the poorest farmers.

An obvious result of the project has been increased farmer income. A third food crop is being planted by owners of HTWs. In a country as severely overpopulated as Bangladesh, this is a significant achievement. It is not known with any certainty just how much additional food is produced, but the additional source of nutrition cannot be discounted. In addition, to a limited extent, farmers are producing a "cash" crop in their third season. While it is too early to say how extensive this trend will be, it was clear to the team that farmers were willing to modify their cropping patterns in some cases to take advantage of high prices for certain cash crops.

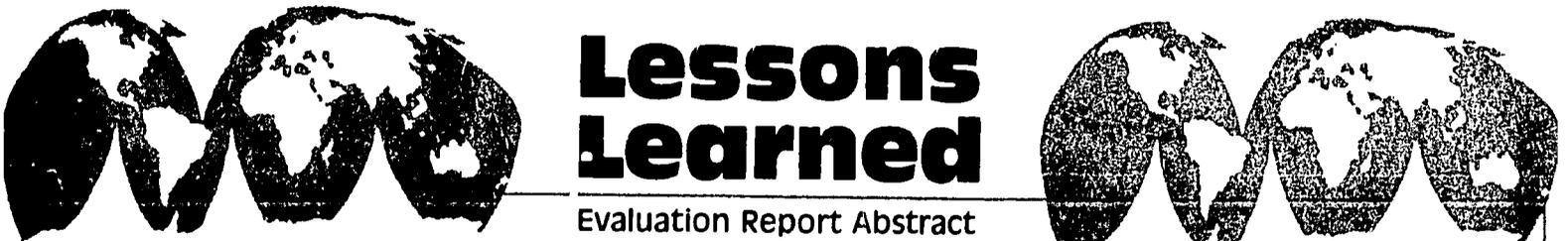
There are side benefits of HTW ownership which were not anticipated in the original design of the project, but which, nevertheless, must be viewed as positive results. Chief among these is the large amount of potable water produced by the pumps. The use of this water results in a decrease in dysentery and stomach ailments. Finally, we should note that women are working in the

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fields, for the first time, operating hand pumps. Whether this is a positive good remains to be seen.

Copies of the complete report, A.I.D. Project Impact Evaluation No. 42, Bangladesh Small-Scale Irrigation (PN-AAL-010), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

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Lessons Learned

Evaluation Report Abstract

Egypt: The Egyptian-American Rural Improvement Service,
A Point Four Project, 1952-63

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

April 1983

Egypt: The Egyptian-American Rural Improvement Service,
A Point Four Project, 1952-63

As part of an A.I.D. effort to assess the impact of its irrigation programs, an interdisciplinary team conducted an evaluation of the rural improvement service project in Egypt in July 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

The Egyptian-American Rural Improvement Service (EARIS) project, supported under the Point Four foreign assistance program* between 1952 and 1963, launched what remains Egypt's most successful land reclamation project. Altogether, EARIS reclaimed 37,000 acres of lake bottom and desert lands in three sites, built 13 complete villages and 64 satellite villages, and resettled 7,500 landless peasant and laborer families. Each settler received a house, three to five acres of reclaimed land, and a gamoosa (water buffalo) on a 40-year repayment schedule. EARIS' major accomplishment as a model for land reclamation was to put the necessary inputs--land, water, and credit--in the hands of the Egyptian farmer. It demonstrated the viability of small-scale agriculture on reclaimed land, the feasibility of bringing both lake bottom and desert land into production, and the adaptability of the Egyptian peasant to new social and economic situations. The model was not extended on a widespread basis as had been anticipated, because of political shifts in the 1960s and the move to state farms on large tracts of reclaimed land.

The largest of the three sites, Abis, 12 kilometers from Alexandria, is the most successful. The 30,000 acres reclaimed from Lake Mariuaret maintained by an extensive system of drains and round-the-clock pumping. Nine villages were built and settled by 6,000 families beginning in 1955. Today, farm income and wealth have risen dramatically in the project area. Estimates for net agricultural revenues range from LE1300-LE2200 per household, up from LE 185 in 1962. Average holdings of large animals have increased from one to nearly four per household. The value of the agricultural land reclaimed has soared to LE4000 per acre, some LE 96 million for the cultivable acreage in Abis. Individual and cooperative investments have permitted farmers to intensify land use, to exercise control over the marketing of farm products through retail outlets in Alexandria; and to perform processing operations,

*In his inaugural speech, President Harry S Truman set out four major courses for action in his administration: "Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of under developed areas" (January 20, 1949). What thus became known as the Point Four program was administered by the Technical Cooperation Administration.

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such as cheese-making and milk-cooling, which add value to their agricultural products. Approximately 25 percent of cropland is devoted to high-value vegetable production largely directed to Alexandria's markets. In addition wheat, barley, rice, and berseem are grown at levels of productivity comparable to or higher than levels on the Old Lands.

The physical signs of prosperity can be seen in the villages: roofs stacked high with agricultural produce, streets covered with wheat about to be threshed, television antennas, and additions to houses. In a sample of 50 households in one of the towns in Abis, 49 have added a room to their houses, and 45 have painted the houses. Almost all have a radio, more than half have a television. Truck and car ownership by farmers is commonplace. Literacy has also increased significantly. When the first settlers arrived, only 20 percent of the household heads were literate. Today, 53 percent of the younger generation in the sample area can read and write.

The two desert reclamation sites at Qoota and Kom Osheim in the Fayoum, totaling 7,000 acres, have not fared as well. While the land reclaimed is potentially highly productive, severe shortages of irrigation water mean that only a fraction of the land is currently in production. Spontaneous private land reclamation along the feeder canals is overdrawing, legally and illegally, the areas' water allocation. Some of the 1,600 settler families have abandoned their farms. Many of those who remain depend upon remittances from sons who migrate periodically to Cairo to work as semi-skilled laborers.

The evaluation drew the following lessons from this mixed picture of development:

1. EARIS succeeded as a project because it coincided with Egypt's high priority political and developmental goals. The full Egyptian participation in planning and implementation that followed from this commitment meant that, despite two interruptions in American assistance to Egypt (1956-1958 and after 1967), the physical infrastructure planned was fully constructed by the Egyptian Government.
2. EARIS was established as a semi-autonomous, independently funded organization. This autonomy facilitated the implementation of the project. However, the transition from administration of the project areas by EARIS to administration by the line ministries was marked by an almost precipitous decline in services and maintenance.
3. The construction of unrealistic levels of infrastructure, the lack of planning for long-term maintenance, and inadequate

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budgeting for recurrent costs have meant that virtually all of the infrastructure built by the project--roads, electricity, potable water systems, sanitation systems, health clinics, and schools--has deteriorated.

4. Where irrigation water is ensured and farmer choice is permitted, small farms on reclaimed land are financially viable and highly productive after an initial "gestation" period.

5. Proximity to an existing population in the case of the successful Abis site provided free dairy and poultry markets for high-value vegetable products. And most important, this proximity fostered economic diversification and offered access to additional employment, education and services. The development of some infrastructure, such as schools and health facilities, could have been planned much more gradually to capitalize on existing nearby services.

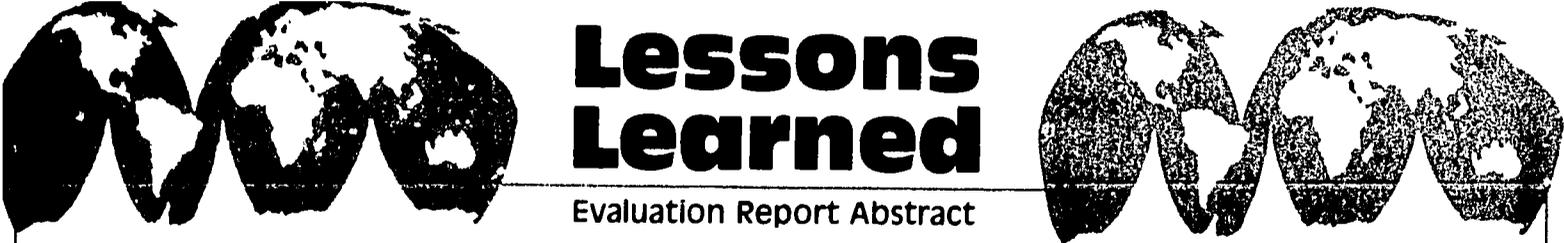
6. Water management has proved to be the single greatest constraint to productivity on these New Lands. In the case of lake bottom lands, drainage problems reduce productivity. On the desert margin, basic supplies are inadequate as upstream farmers use water allocated for downstream sites. The problem appears to be one of water management rather than an overall water shortage. To date, the desert margin communities have sought bureaucratic and legal redress in an unresponsive setting. A responsible local administration, areawide planning, and appropriate technologies for water use are all required. Water management deserves extremely close attention in any New Land activity. In desert sites, water-conserving irrigation technologies must be given serious consideration.

7. On-site population increases have absorbed many project benefits. Land holdings will inevitably be fragmented. The second generation is seeking employment opportunities off the land. More attention should have been paid to a diversified economic base which might have helped to provide for future generations. On the national scale, land reclamation and resettlement cannot be considered a response to the land pressure caused by a growing population. To absorb Egypt's current population growth on New Lands, the team estimated that a project of similar scope would have to be constructed every 22 days.

Egypt: The Egyptian-American Rural Improvement Service,
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8. American assistance did make a difference. American funding served as a catalyst to support and focus Egyptian interest and technical skills on land reclamation. American equipment led to the mechanization of Egyptian reclamation techniques. American approaches to training--hands-on and practical--influenced a generation of Egyptian technicians who still refer to the "EARIS school."

Copies of the complete report, A.I.D. Project Impact Evaluation No. 43, Egypt: The Egyptian-American Rural Improvement Service, A Point Four Project, 1952-63 (PN-AAL-011), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Housing Guaranty Programs In Panama

Report of a Project Impact Evaluation

by

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Housing Guaranty Program In Panama

As part of an A.I.D. effort to assess the impact of its housing programs, an interdisciplinary team conducted an evaluation of housing guaranty programs in Panama in November-December 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

Unlike other programs which use appropriated funds, AID's Housing Guaranty (HG) program underwrites private sector loans. The HG program is considered an effective way of getting maximum development leverage with minimum expenditure and risk of U.S. Government funds. As part of an effort to assess the impact of the HG program worldwide, Panama and several other countries were selected for evaluation.

Panama is at the upper end of the income scale for less developed Latin American countries and enjoys relatively high standing in such quality-of-life indicators as level of education, health, and nutrition. Thus, a large and growing housing deficit is one of Panama's most pressing development problems, and HG-financed housing programs take on considerable importance in the overall assistance effort.

In 1974-1975, in response to AID's "New Directions" policy (to assist the poorest element of the population in less developed countries), the Government of Panama (GOP) and USAID/Panama began to reorient HG projects toward the poor majority and away from the middle- and lower middle-income segments of society. The Panama HG impact evaluation focused primarily on two projects within the program: HG 008 which provided \$3.4 million for homes to be built by the Nuevo Chorrillo Housing Cooperative, and HG 009 which provided \$15 million for slum upgrading in the San Miguelito squatter district. These projects were selected because they were the first completed activities intended to reach a significant number of low-income beneficiaries.

The team found that evaluation of beneficiary impact was especially difficult, because HG planners had tended to treat outputs, i.e., housing solutions (housing units), as project purposes. Project Papers and other documents made little reference to anticipated effects on beneficiaries, and baseline data were essentially nonexistent. The evaluation report recommends that future HG Project Papers include selected short-term indicators, such as reduction in human densities and cost-efficiency of housing solutions, which will enable designers and managers to gauge the real value of a project to beneficiaries and to compare the relative merits of various housing solution alternatives. Standard indicators often used in other AID projects would seem inappropriate here. They may be too costly to monitor with funds obtained at commercial rates, and it is difficult to link such long-term changes with improved housing.

Housing Guaranty Programs In Panama

As far as the beneficiaries are concerned, improved housing seems to be an end in itself. According to beneficiary interviews, important sources of satisfaction were improved environment for self and children and a perception of enhanced social status. Low-income households appear to have a nearly universal tradition of progressive home upgrading as security and resources permit. The HG program accelerates this existing social process considerably and provides important improvements, such as water and electricity, which individual households could not obtain on their own. It is interesting that the HG program seems to do little to enhance beneficiary financial standing. Low-income homes typically are not improved for investment or for sale at a profit as they generally are in other areas, and local banks do not regard such homes as collateral for loans.

The GOP has made significant efforts to reduce the cost of housing solutions and to provide more cost-efficient solutions to the greatest number of low-income beneficiaries. However, very rapid escalation of construction costs and interest rates make it doubtful whether the GOP can continue to satisfy target group needs. To help combat this serious threat to HG program effectiveness, the evaluation report recommends more precise definition and identification of actual beneficiaries, increased early beneficiary design participation, and incorporation of knowledge of beneficiaries' actual needs and living patterns into the design of project and housing solutions.

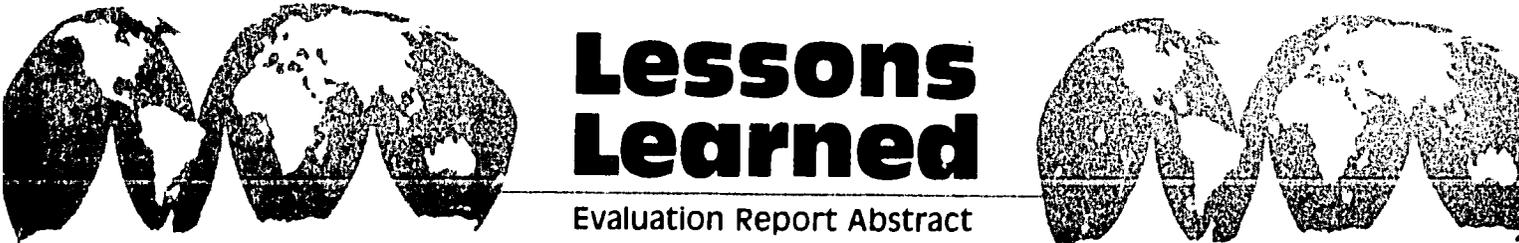
Mechanisms are also needed to protect the financial integrity of the low-income housing program. Several possible measures are recommended in the report to ensure that beneficiaries can carry the full cost of housing solutions and to prevent recurring decapitalization which jeopardizes the future of the program. Even with the suggested refinements in financial management, however, experience has shown that subsidies in some form will still be required to keep even the most economical of housing solutions within reach of low-income beneficiaries. It is recommended that steps be taken to analyze actual subsidy requirements and to distribute the subsidy as equitably as possible along the beneficiary spectrum.

Finally, there is a question as to how much planners should continue to look on the HG program as an important source of jobs for Panama's surplus labor. Given the highly cyclical and unreliable nature of Panama's construction sector, it is doubtful whether attracting unskilled labor into work on HG projects is an appropriate long-range solution to the unemployment problem. HG projects must continue to move rapidly toward lower cost shelter solutions which require less labor input. Therefore

Housing Guaranty Programs In Panama

recommended that planners continue to focus on developing other employment alternatives, such as light manufacturing, which will make it possible to unhook the HG program from employment concerns.

Copies of the complete report, - A.I.D. Project Impact Evaluation No. 41, Housing Guaranty Programs In Panama (PN-AAL-008), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Assisting Small Business in Francophone Africa--
The Entente Fund African Enterprises Program

Report of a Project Impact Evaluation

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Assisting Small Business in Francophone Africa--
The Entente Fund African Enterprises Program

As part of an A.I.D. effort to assess the impact of its assistance in the small-scale enterprise sector, an interdisciplinary team conducted an evaluation of small-scale enterprise in francophone Africa in July 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

The creation of a modern African entrepreneurial class and the growth of African-owned business firms are important to the strengthening of the economies of Africa. It is in the interest of the United States to support such developments, and thus, assistance by the AID to indigenous small- and medium-size enterprises is warranted.

The program to assist African enterprises through the Entente Council (made up of five countries: Benin, the Ivory Coast, Niger, Togo, and Upper Volta) has been an important part of AID's total effort in French West Africa since 1973. The Council created the Mutual Aid and Loan Guaranty Fund (called the Entente Fund) in 1966 to promote economic development in the member countries. AID has provided about 75 percent (\$66 million) of the outside donor assistance to the Entente Fund, of which \$17.5 million in loans and \$1.88 million in grants have been for the African Enterprises Program.

AID's objectives in the African Enterprises Program may be divided into two parts: first, to help African entrepreneurs by lending money and providing technical assistance to the Entente Fund, which would relend and provide technical help to six development banks in the member countries (two in the Ivory Coast, one in each of the other four countries), which in turn would sublend to African-owned enterprises; and second, to help strengthen the ability of these development banks, together with the promotion centers and guaranty funds to assist African-owned companies, and to encourage commercial bank lending to African entrepreneurs.

As of September 30, 1981, approximately \$14.1 million of the AID loan funds had been disbursed, leaving \$3.4 million to be used by the terminal disbursement date of April 30, 1983. Some 572 subloans had been extended to African entrepreneurs in the five countries, 34 percent of them in the Ivory Coast, 27 percent in Benin, 21 percent in Togo, 15 percent in Niger, and less than 4 percent in Upper Volta. Subloans were made in a wide variety of economic sectors--industry, agriculture, commerce, transportation, tourism, and crafts. Typical enterprises being helped were garages, furniture-making companies, bakeries, small restaurants and hotels,

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and traders of many types. About 70 percent of the loan volume financed fixed assets (almost all locally procured), with the remainder being used for working capital.

The evaluation team found that the two objectives of the program as indicated above have not been met.

With respect to the first objective, only about 72 subloans have been made annually, an average of 12 loans per year for each bank. Our sample survey showed that many of the subborrowers had been unsuccessful, and many were delinquent on their loan repayments. A significant volume of loan funds has gone to "large" firms, which was clearly not an objective of the program. Overall, there has been little discernible effect on the creation of a modern African entrepreneurial class or on the economies of the countries involved.

This is not to say that certain entrepreneurs have not benefited. New companies have been helped in getting started, and existing firms have been strengthened. These positive achievements would have been greater if effective technical assistance support had been provided to the African companies. This was required under the program, and in fact a good technical assistance plan was prepared, but unfortunately, it has not been implemented.

With respect to the second objective, the development banks as a whole have not become effective vehicles for assisting small African companies. Their ability to extend small loans has not improved in every member country since the start of the program, and they provide little if any technical assistance to prospective or actual subborrowers. Most of the banks are in financial difficulty. As of September 30, 1981, four of the six showed excessive delinquency ratios on their small subloan portfolios.

Also, the promotion centers and guaranty funds are ineffective or nonexistent in four of the five countries, and the commercial banks have found that small- and medium-size African companies are too risky to finance in the absence of Government guaranties and Central Bank rediscount facilities.

Two points must be stressed. First, the inadequacy of the institutions involved is due to inadequate management and resources, and also to changes in the economic and financial climate within which they operate. This climate has been volatile over the period of this program and not conducive to small-enterprise lending. Second, the Entente Fund itself is not a financial institution, and the approach and discipline of a financial institution is needed to run an effective, high-risk, small- and medium-size credit program. The Entente Fund at the moment shows little sign of becoming such an

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The Entente Fund African Enterprises Program

institution. There have been frequent changeovers in the AID-financed U.S. advisors who managed the program for the Entente Fund, leaving it without direction at times. (This occurred despite the high qualities and abilities of most of the advisors, including the current ones.) Compounding this, AID itself has often failed to devote adequate staff and attention to directing the program.

There are at least five important lessons to be learned that are pertinent in one way or another to all programs designed to assist small- and medium-size enterprises in developing countries.

1. Subloan criteria should be well defined before the program begins. Small- and medium-size enterprises should be defined, and decisions should be made on whether to concentrate on helping ongoing companies or establishing new ones (or a mixture of both); whether to emphasize investments in fixed assets or working capital (or both); and which economic sectors to stress in the lending program. Emphasis should be placed on higher quality subloans that have real economic returns, including increased employment. Lack of attention to these points has hurt the African Enterprises Program.

2. A careful assessment should be undertaken of the institution(s) that will administer the program. Frequently it will be found that management by a banking institution works best because the program is thereby placed into an ongoing, disciplined financial environment. Almost as important, AID must staff itself with credit expertise to monitor effectively such complicated undertakings.

3. The borrower should make reasonable financial contributions. AID should not be financing almost the entire program as it has to date in the African Enterprises Program. The loan repayment reflows, over and above those required to service the AID debt, should be "revolved" to create a permanent relending and technical assistance program for small- and medium-size companies.

4. The provision of meaningful technical assistance to both the implementing institution(s) and the borrowing companies is extremely important to the success of such programs. Such assistance should be built in from the start, and continually monitored and adjusted as necessary. This has not been done in the African Enterprises undertaking.

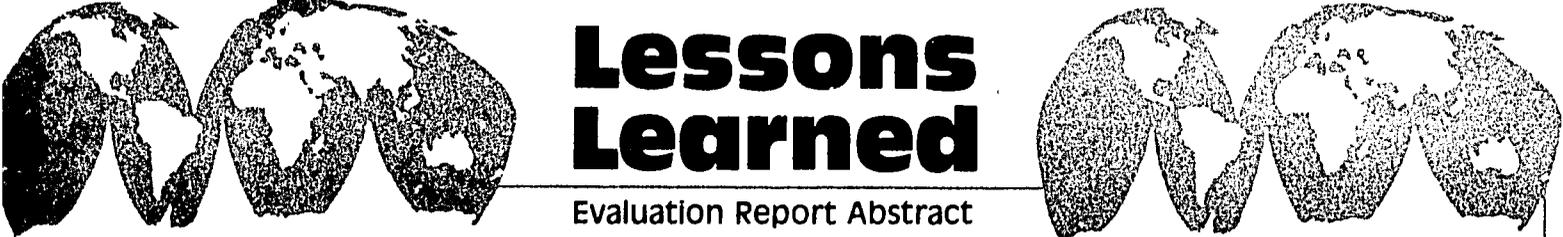
5. Changes in the financial and economic environment within which the small- and medium-size enterprises program operates can

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The Entente Fund African Enterprises Program

markedly affect its success. Good management will follow such changes and determine whether and when adjustments in the program are necessary and possible to make it more effective.

Copies of the complete report, AID Project Impact Evaluation No. 40, Assisting Small Business in Francophone Africa--The Entente Fund African Enterprises Program (PN-AAL-002), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

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Lessons Learned

Evaluation Report Abstract

Sri Lanka: The Impact of PL 480 Title I Food Assistance

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

October 1982

U.S. Agency for International Development
Washington, D.C. 20523

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Sri Lanka: The Impact of PL 480 Title I Food Assistance

As part of an A.I.D. effort to assess the impact of its assistance in the PL 480 Title I sector, an interdisciplinary team conducted an evaluation of PL 480 Title I in Sri Lanka in February 1982. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

Sri Lanka is noted as a leading proponent of the pursuit of an equitable growth strategy. One of the few remaining democratic states in Asia, this socially heterogeneous society has shifted political power across the spectrum of party politics, but each government has reaffirmed the basic commitment to supply both social services and food subsidies to the population. It has done so with remarkable consistency and effectiveness.

There is a long history of food support to the population, dating from the close of the colonial period. This system provided subsidized, and sometimes free, rations of basic food stuffs to various segments of the population, reaching a peak with free but limited distribution of these essentials to both the rich and poor. Increasing demands on the public treasury made continuation of this program untenable, and with the 1977 election which brought in a more conservative government, a gradual shift took place leading to revision of the program. The food stamp scheme was introduced to provide purchasing power to the poor (estimated at about half the population) for a variety of staple foods, generally through cooperative stores. This program was not indexed to inflation, and the purchasing power of the food stamps has eroded since 1979. Wheat flour, some of which is provided under the PL 480 Title I program, was eligible for purchase with food stamps.

Although Title I has four objectives, the economic development objective is of primary relevance to AID. The other objectives are the furtherance of U.S. foreign policy interests, the reduction of U.S. surplus agricultural commodities, and the expansion of U.S. commercial sales. Because it interacts with the recipient country's economy as a whole, as well as because of its varied objectives, an evaluation of the Title I program presents problems of methodology, scope, and analysis. The program in Sri Lanka was also constrained by time and data availability.

The PL 480 Title I program has operated in Sri Lanka since 1956. It has been of continuous support to the nation, with the exception of a short break as a result of enforcement of the Hickenlooper amendment,* and in total has provided some

*This amendment requires closure of foreign aid when U.S. property is expropriated without compensation.

Sri Lanka: The Impact of PL 480 Title I Food Assistance

\$277 million in food support. The bulk of these commodities has consisted of wheat flour and, following the completion of the Prima Flour Mill, of wheat. At various times, other commodities were supplied, including relatively small amounts of rice and maize. Wheat has become a fixture in the diet of some population groups in Sri Lanka. Wheat flour is a traditional part of the diet of the Tamil populations of the north and the tea estates, and is consumed more broadly in Sri Lanka as bread, which is used mostly as convenience food in both the urban and rural sectors because it requires no cooking, is easily transportable, and can be eaten with traditional curries.

Rice, however, is clearly preferred to wheat by the majority of the population. Bread is considered a supplement to but not a substitute for, rice. It is not surprising, given this preference, that food stamps are primarily used to purchase rice rather than bread or flour. Wheat, therefore, does not directly reach the bulk of the rural poor, who are assisted through food stamps, although the urban poor consume wheat in the form of bread. Reaching the rural poor only indirectly is not necessarily inappropriate. Given the low (relative to rice) international cost of wheat, which has approximately the same nutritional value as rice, a large supply of wheat may free rice for broader consumption through substitution. This indirect effect would probably be a positive one for the poor.

Overall, Title I was apparently policy neutral: it continued to provide commodities throughout the broad swings of Sri Lanka's domestic economic and political life and throughout swings in U.S. policy toward Sri Lanka. The evidence suggests that the supply of wheat or wheat flour caused no disincentive effects on the domestic production of rice, which markedly increased simultaneously with PL 480 imports as a result of both effective pricing policies and technological innovations. PL 480 may, however, be associated with a disincentive to the production of coarse grains which are relatively minor crops in Sri Lanka.

Title I represents a significant and positive balance of payments resource, and the Sri Lankan Government views the program basically in this light. It is highly regarded in the Government, and is treated as a multiyear resource, even though it is programmed annually. Neither the United States nor Sri Lanka seems intent on PL 480's termination, although self-reliance (the ability to procure sufficient food through production and trade) is considered desirable. Sri Lanka would benefit from multiyear Title I commitment, but only Title III is intended to provide a long-term food aid. Although Title III provides a multiyear commitment of food aid, thereby facilitating long-term planning, it also requires policy reform, and while the former is needed in Sri Lanka, the latter is not. An innovative arrangement that incorporates a

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multiyear commitment of food aid but does not require policy reform or involve the considerable administrative costs associated with Title III needs to be explored.

The self-help measures included in Title I agreements have been virtually superfluous and also unquantifiable and non-additive above basal efforts. Because Sri Lanka was generally pursuing sound rural development strategies independent of Title I, the PL 480 funds were relatively minor in relation to the Government's total budgetary commitment to the rural sector, and proceeds from the sale of Title I commodities are credited to the general government account and cannot be identified. Because the rural policies of the Government are basically appropriate, no change in procedure is needed.

Nutritional considerations have not entered directly into Sri Lankan food policy formulation. Several high risk nutritional groups can be identified, but such groups have not received compensatory benefits beyond what is available to the population in general through food programs. One group (tea estate workers) is excluded from food stamp benefits because their reported income makes them ineligible, even though it is clear that this group is more impoverished than rural nonstate households with lower reported incomes.

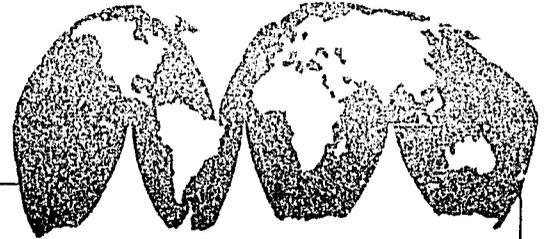
On balance, the Title I program has probably made a positive contribution to U.S./Sri Lankan relations. During periods when other assistance was suspended, Title I continuity was a positive influence on these relations. The program was modestly helpful in supporting the objective of relieving U.S. grain surpluses and opening U.S. commercial sale possibilities there, although the small size of Sri Lanka limited this impact.

Copies of the complete report - AID Project Impact Evaluation No. 39, Sri Lanka: The Impact of PL 480 Title I Food Assistance (PN-AAJ-623), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



**A Low-Cost Alternative for Universal
Primary Education in the Philippines**

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

September 1982

A Low-Cost Alternative for Universal Primary Education in the Philippines

As part of an A.I.D. effort to assess the impact of its assistance in the education sector, an interdisciplinary team conducted an evaluation of education in the Philippines in October 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

Funded by the (Canadian) International Development Research Centre (IDRC), Project IMPACT was an experiment launched in 1974 in the Philippines to test a low-cost approach to primary education. The approach itself was developed by the Center for Educational Innovation and Technology (INNOTECH), a research arm of the Southeast Asian Ministers of Education Organization (SEAMEO). Though the experiment was funded by IDRC, INNOTECH and SEAMEO were established in the late 1960s and early 1970s with assistance from AID.

In this experiment, the professional teacher becomes an Instructional Supervisor (IS) who orchestrates an ungraded learning system for about one hundred (or more) primary school students. Under the supervision of an IS, students are divided into groups of 5 to 10 learners, and are taught by a Program Teacher (PT), who is one of the intermediate (Grades IV-VI) primary students, using programmed teaching materials called "modules." The learning process is self-directed, self-paced, and ungraded, enabling learners to proceed independently at their own speed. Parents and skilled workers serve as community resource persons. Clerical, administrative, and logistics support is provided for the IS by an Instructional Aide, who is a high school or primary school graduate from the community. The school itself becomes a Community Learning Center consisting of classrooms, central learning centers where all instructional materials are kept, and open-air kiosks, where small group sessions are held under the direction of the PT.

The objective of Project IMPACT was to show that this approach to universal primary education could sharply reduce per-student costs without any loss in the quality of education being imparted. Evidence from cost-effectiveness studies and academic performance tests administered to students in IMPACT and control (conventional) schools, clearly demonstrate that this objective was achieved.

IMPACT also appears to enjoy one other advantage over conventional schooling. According to teachers who have used both approaches, IMPACT students appear to gain greater social poise and personal initiative than their conventional counterparts. Teachers explained that this perceived difference in social development may be due to the greater stress on independent study and peer group interaction that characterizes the IMPACT pedagogy.

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On the other hand, there has been no attempt to use the savings realized from IMPACT in ways that would enable IMPACT schools to maintain the same qualitative levels that obtained when the project was initiated. Over the years, there has been a serious depletion of equipment and texts, and no attempt has been made to repair school facilities which are an integral part of the IMPACT approach. This has led to declining support for IMPACT schooling among professional educators at the oldest experimental sites. Local area teachers and administrators argue that while the IMPACT approach has merit, it cannot be sustained without an adequate supply of the necessary support items that distinguish it from more conventional approaches.

Reactions by parents to IMPACT schooling have been mixed. Generally, parents had definite expectations about how the education system ought to teach their young. Central to these expectations was the belief in a structured system of successive classes and grades, each one associated with corresponding levels of increasingly difficult curricula. Also central to these expectations was the belief that such a structured system required the presence of a professionally trained teacher in the classroom, to provide sustained guidance to the young as they progressed from one grade to the next. The IMPACT approach, with its emphasis on peer group teaching, independent study, and ungraded classes, violated these expectations and aroused some feelings of anxiety among parents about the adequacy of the education their children were receiving. The more common reaction was that IMPACT served best the interests of the brightest youngsters, who could work on their own and who were most likely to have the self-assurance to teach their peers. IMPACT was viewed as serving less well the interests of the average student, who, it was felt, needed the regular guidance of an adult teacher within a conventional framework.

While it is too early to gauge its long-term effects, Project IMPACT does provide lessons from which both donors and host countries can profit. A system like IMPACT that has demonstrated cost effectiveness without a loss in academic quality has potential utility for countries that find themselves faced with rising education costs, a shortage of teachers, and a burgeoning primary school-aged population. As one of the very few demonstrably viable solutions to this dilemma, IMPACT deserves support from the donor community, both for replication in other settings as well as for continued evaluation of its effectiveness and impact.

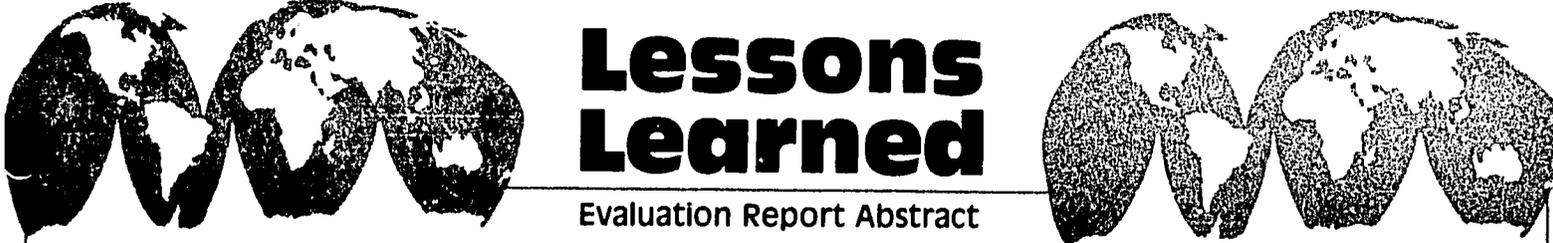
At the same time, some specific requirements must accompany donor support to an experimental project in order to give the effort the best possible chance for continuing success. This is particularly true of an experiment that represents a considerable departure from popular expectations of what an academic education should do for the young.

A Low-Cost Alternative For Universal
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The issues of maintenance and in-country replication following donor withdrawal must be initially addressed during the design phase of a project, and periodically reviewed during the course of implementation. As part of this exercise, the project design should include a plan--approved by the host government--for the gradual replacement of donor assistance with host country/local resources support.

This process of articulation and periodic reevaluation would serve several purposes. First, it would promote a better understanding among all the concerned parties (donor agency, host government, local officials, local community) as to the future direction of project activities once external funding has ceased. Second, if the host government is committed to project continuation, authorities would have time and opportunity to prepare for their eventual takeover of project responsibilities. This would help avoid any prolonged and possibly damaging hiatus following donor withdrawal.

Copies of the complete report, AID Project Impact Evaluation No. 38, A Low-Cost Alternative for Universal Primary Education in the Philippines (PN-AAL-001), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Radio Correspondence Education in Kenya

Report of a Project Impact Evaluation

by

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Radio Correspondence Education in Kenya

As part of an A.I.D. effort to assess the impact of its assistance in the education sector, an interdisciplinary team conducted an evaluation of education in Kenya in November 1980. The following is an abstract of the completed report which has been published in the AID. Project Impact Evaluation Series.

If there was a flaw in the Kenya Radio Correspondence Project, it was that it succeeded too well. When established with AID funding in 1967 in this East African country of 16 million, the project was designed to upgrade the qualifications of primary school teachers through correspondence courses and radio instruction. An overwhelming majority of the 12,000 teachers trained through this method passed national examinations and qualified for promotions and higher salaries. Ironically, the impact of the higher salaries upon Kenya's already substantial and rising education budget prompted the Government to abandon the automatic promotion policy which had motivated many of the teachers to sign up and pay for radio correspondence instruction. Enrollments plummeted, jeopardizing the financial viability of the Kenya institution which U.S. technical assistance had helped to found. Despite this serious setback, the AID impact evaluation team which visited Kenya in late 1980 learned that the 17-year-old project not only survived, but has been selected to serve new and significant national educational tasks.

It would be difficult to persuade the people of Kenya that education is not a basic human need. Their insistence on expansion of the country's educational system at all levels has had a significant impact upon the course of national development. Government expenditures for education have averaged close to one-third of annual budgets since Kenya attained independence in December 1963. Access to primary education for every child is officially regarded as a fundamental right. Close to four million children benefit from that right today, compared to less than a million in 1964.

At independence, a severe shortage of trained manpower, coupled with the high priority assigned to education as a result of public pressures led both national and community programs to increase school facilities throughout the country. Expansion of the education system was inhibited, however, by the relatively small number of teachers who were not expatriates, most of whom lacked professional and academic qualifications beyond the grades at which they were teaching. The existing teacher training colleges did not possess the capacity either to improve the qualifications of in-service teachers or to supply the large number of new teachers required to staff the expanding number of primary and secondary schools.

Studies by both Kenyan and U.S. experts in the 1964-1966 period recommended adoption of modern educational technologies, especially

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radio instruction integrated with correspondence courses, as a means of supplementing the ability of the formal educational system to upgrade teacher qualifications. The Government requested AID technical assistance, and \$667,000 was granted to establish and operate a correspondence course unit within the University of Nairobi's Institute of Adult Studies for an initial four years. The purpose of the project was to use correspondence courses backstopped by radio lessons and short periods of face-to-face instruction to rapidly upgrade the teaching and academic preparation of in-service primary teachers. A University of Wisconsin team of four technical specialists spent four years in Kenya helping counterparts write the correspondence courses and radio scripts and set up the materials production and administrative support systems. The Government of Denmark granted \$243,314 for construction of the correspondence course unit's physical plant and facilities about 10 miles from Nairobi in the suburban town of Kikuyu, the site of the Institute of Adult Studies.

Accepting that program development and institution-building were the principal objectives of the project, the AID evaluation team judged the effort to be successful in meeting these criteria, particularly within the four-year time frame of U.S. assistance. Full course materials with accompanying radio lessons were prepared in the several subject areas which covered the curriculum up to the examination level for the first two years of secondary school. Course writers, technical specialists, and part-time tutors were trained and in place by the time the last U.S. specialist returned to Wisconsin. The University of Nairobi integrated the correspondence course unit as an operational component of the Institute of Adult Studies and the Kenya Government guaranteed financial support for continuation of the project. Over 5,000 teachers were enrolled in courses during the initial four years of the project, with 7,000 more following suit in subsequent years.

The Radio Correspondence Project set in place an institutional capability and methodology which permitted Kenyans to pursue education certification without the personnel or system costs of formal school attendance. The immediate impact of this achievement was to improve the qualifications of a large number of in-service teachers without diverting the limited resources of Kenya's teacher training institutions from their primary mission of producing new teachers for the country's expanding school system. The longer range consequences of the project were to hasten the change in Government policy permitting the automatic promotion of teachers solely on the basis of upgraded academic achievement and to lead both Government and Institute for Adult Studies administrators to identify new roles for radio correspondence education in national development programs. Among such programs, teacher "updating" and

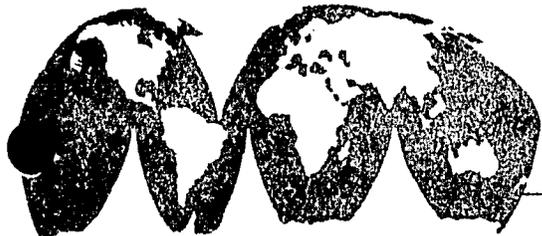
Radio Correspondence Education In Kenya

adult literacy campaigns--both of considerable political and economic significance--now appear to afford unusual opportunities to utilize the institutional capacity established through the U.S. technical assistance project in the 1967-1971 period. The project has provided a practical demonstration for educators from 20 or more other developing countries of potential benefits to be derived from the radio correspondence education system.

From the perspective of more than a decade following completion of the AID contribution, several lessons are clear. Nonformal education offers a viable alternative to the formal school system in a developing country, especially when the full costs and constraints of the latter are considered. Alternative teaching methods can be integrated with the national educational strategy of a country if they are designed and implemented to be compatible with existing institutional capabilities and with the goals of the target population. If sufficiently subscribed, radio correspondence instruction can provide quality education on a par with traditional school systems at significant cost savings. A diverse range of educational needs can be met through radio correspondence programs. Educational opportunities can be extended to a broader population through radio correspondence techniques than is possible through formal education systems. Distance teaching (i.e., radio correspondence instruction) requires effective field organization, a reliable postal service, and a broadcasting capability sufficient to satisfy client support needs. User motivation must be strong, with socially as well as materially evident rewards, for radio correspondence programs to maintain enrollments. National investment in radio correspondence or other nonformal educational programs generally should be viewed in a long-term social benefits context rather than from a standpoint of short-term commercial viability or an expedient "fix" to overcome educational obstacles.

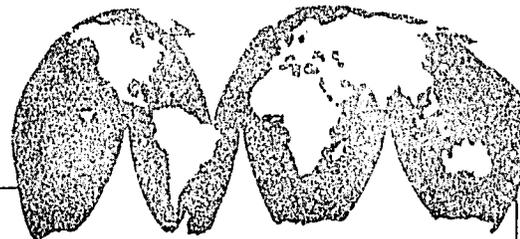
A basic implication for AID policy derived from the experience of Kenya's Radio Correspondence Education Project is that a utilitarian relationship exists between foreign technical assistance in the education sector, particularly with respect to nonformal teaching techniques, and development training needs across a broad spectrum of sector programs. As was evident in Kenya, the farmer, health worker, village craftsman, or provincial cooperative official can, like the teacher, become a successful radio correspondence student if the need is carefully defined and the purpose receives the political endorsement and economic support it requires.

Copies of the complete report, AID Project Impact Evaluation No. 37, Radio Correspondence Education Project in Kenya (PN-AAJ-620), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



Korea Health Demonstration Project

Report of a Project Impact Evaluation

by

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Korea Health Demonstration Project

As part of an A.I.D. effort to assess the impact of its assistance in the health sector, an interdisciplinary team conducted an evaluation of a health demonstration project in Korea in July-August 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

In 1976, the Government of Korea and the U.S. Government signed a loan agreement (1) to establish the capability within the Government of Korea to plan, conduct, and evaluate low-cost, integrated health delivery projects directed primarily toward low-income families and (2) to successfully demonstrate at least one multi-gun (county) low-cost integrated health delivery system that is replicable in other parts of Korea. A semi-autonomous organization was created called the Korean Health Development Institute (KHDI) and given the responsibility for designing, implementing, and evaluating three primary health care projects at the local government level (gun). It proposed the introduction of a new cadre of health personnel called the Community Health Practitioner (CHP) and expansion of the professional capabilities of an existing single-purpose cadre of personnel, the Community Health Aide (CHA). Both cadres would work as a team through a village volunteer called a Village Health Aide (VHA) to increase community involvement in improving the health of its members. These common elements of a rural health delivery system were tested in each demonstration site in conjunction with two separate experiments to test the feasibility of alternative financing mechanisms that operated through a community cooperative and a preexisting local health insurance program.

This project was developed and implemented outside the existing line ministerial structure through KHDI. However, in order to obtain the necessary cooperation with the several government and private organizational entities with interest in and jurisdiction over this area, a National Health Council was created to coordinate the interests of these various parties and to implement successfully the demonstration delivery systems in Hongcheon, Okgu, and Gunee guns.

By 1977, these three test projects had started to provide health services in rural areas. Considerable progress had been made by 1978 to improve access to health care services and to increase the use of the new health providers working in the rural areas. The average cost per curative visit at the most peripheral health unit was \$1.90. At the same time, it was found that the physician market share in those areas had declined by about 40 to 50 percent. Shortly thereafter, the Korean Medical Association pointed out to the Ministry of Health and Social Welfare that the VHAs and the CHAs were providing simple curative services which were outside the scope of their legal license to practice.

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During the period from 1978 to the end of 1980, several other important events occurred. As a consequence of Ministry of Health initiatives during the mid-1970s, the number of medical school graduates had doubled to the point where the military could not absorb all of them upon graduation, as had been done in the past. A three-year alternative rural service commitment was developed and financed by the military. Second, the scope of medical practice by the CHP, the backbone of the newly devised health care system, was considerably restricted on quality-of-care grounds. Third, after experimenting with the health insurance program in Okgu, the Government decided to launch a more comprehensive health insurance experiment throughout these three demonstration areas, which would be consistent with the legislatively mandated class II insurance program. One important provision of this experiment was that certain approved private physicians in each area as well as CHPs could be reimbursed by the insurance program for patient visits.

As a consequence of these changes and the continued increase of per capita incomes, the early success achieved by the demonstration area health care systems had been seriously eroded. Few of the community involvement activities continued. Utilization fell markedly, and the cost per curative visit at the peripheral units had increased to nearly \$3.00, which implied that the system was no longer financially sustainable at current levels of support.

Developing a new institutional mechanism for designing, implementing, and evaluating a potentially new national health care system is a risky endeavor. When the Ministry of Health viewed the fledgling system as potentially competitive, it supported the political efforts of physicians to circumscribe the paraprofessional's scope of medical practice. As of August 1981, the KHDI was subsumed into a newly constituted body, the Korean Institute for Population and Health (KIPH). None of the senior officials of the new institute was from KHDI, and the scope of health work for the new institute was not clarified.

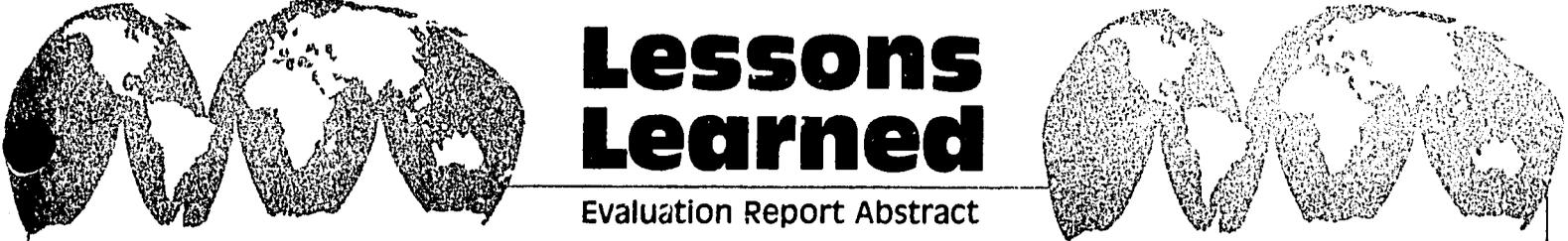
While access to curative medical care initially increased in the three demonstration areas, utilization rates at the KHDI-developed rural facilities declined, initially because of the circumscription of paraprofessional medical practice, and then because of the increased supply of alternative-service physicians and finally, in July 1981, because of the introduction of class II insurance. The new insurance program was also associated with a further increase in physician workloads, and little activity was observed at the facilities operated by CHPs. The people in rural areas were also not pleased with the prospect of paying compulsory health insurance

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premiums which de facto raised local taxes by over 50 percent. A low premium compliance rate was observed.

Copies of the complete report, AID Project Impact Evaluation No. 36, Korea Health Demonstration Project (PN-AAJ-621), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

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Lessons Learned

Evaluation Report Abstract

The On-Farm Water Management Project In Pakistan

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

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The On-Farm Water Management Project in Pakistan

As part of an A.I.D. effort to assess the impact of its assistance in the agricultural sector, an interdisciplinary team conducted an evaluation of an on-farm water management project in Pakistan in October 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Series.

The OFWM project was evaluated during October 1981 by a team of AID staff and American and Pakistani contract staff, assisted by USAID staff and short-term contract help. During three weeks of field work, the team visited project sites and met with Federal, provincial, and local officials in three of Pakistan's four provinces; the fourth province, Baluchistan, was excluded because of conditions related to an influx of refugees from the conflict in neighboring Afghanistan.

The OFWM project was designed as a five-year pilot project to demonstrate the feasibility of increasing food production and rural incomes by reducing irrigation water losses in village watercourses; improving the use of water through the precision leveling of fields; and training farmers, through agricultural extension, in improved farming practices. The project was initiated in FY 1976 with a \$7.5 million loan to the Government of Pakistan. A second tranche of \$15 million, planned for FY 1978, did not occur due to the temporary cessation of the entire U.S. assistance program to Pakistan following Congressional passage of the Symington Amendment.

Because of the two-thirds cutback in the U.S. contribution, implementation of the OFWM project did not reach its planned level. However, Pakistani participation in the watercourse improvement component exceeded expectations, with the result that 1,300 of a planned 1,500 watercourses had been improved as of June 1981. Conversely, only 14 percent of a planned 425,000 acres of farmland were precision leveled, and the extension element was not implemented to any appreciable degree. About two-thirds of the project implementation occurred in the Punjab and most of the rest in Sind; there was some limited implementation in the North West Frontier Province and in Baluchistan.

FINDINGS AND LESSONS LEARNED

As a result of watercourse improvements, water losses were reduced and more water was made available to farmers on a reliable basis. This resulted in significant agro-economic benefits including expanded crop area, increased cropping intensity, greater emphasis on cash crops, increased use of fertilizer, and rising crop yields per acre with resultant increases in net farm incomes. Popular demand for assistance with watercourse improvement has increased markedly since the inception of the project and remained high at the time of the evaluation.

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Most of the improved watercourses that were visited showed greater than expected evidence of maintenance and farmer interest therein, although it is unclear whether this will be continued over time. Maintenance is critical to sustaining benefits from watercourse improvement but is dependent on community cooperation. Water User Associations, planned as the village structure that would provide for continued watercourse maintenance, were found not to have been established as effectively as intended. However, farmer awareness of the importance of maintenance seems to have significantly increased the amount of informal cooperation that occurs at project sites, except where local factionalism has inhibited it. Ensuring continued cooperation may hinge on establishing such formal structures or, at a minimum, promoting voluntary cooperation through extension or media outreach efforts.

Success in generating government awareness of the importance of on-farm water management, and in creating an institutional mechanism for meeting the need, was found to be mixed. Federal and provincial commitment to the OFWM concept has grown demonstrably, but in many areas this awareness and acceptance were found not to have reached the local (district) level to the same degree. Neither has the project produced needed changes in the curricula of academic institutions, which must supply the trained personnel for further on-farm water management improvement efforts.

The project design was judged to be insufficiently flexible to take into account regional variations in soil conditions, topography, and traditional local land tenure arrangements. Because land ownership patterns determine who benefits from watercourse improvement and land leveling, more attention needs to be paid to ways of ensuring benefits to small farmers, especially tenants.

Inadequate baseline data collection and monitoring during project implementation hampered precise documentation of project benefits. In the case of the OFWM project, the absence of such baseline data appears not to have prevented the project's replication, because of clearly perceived benefits by participating farmers and the resultant growth in demand for watercourse improvement. However, to the extent that alternative approaches to on-farm water management technology are tested and the most cost-effective modes are sought, better data collection will be essential.

Precision land levelling was considerably less successful than anticipated, in part because of the small farmers' view that the risk exceeded the likely benefit and their resultant reluctance to remove land from production. In addition, precision land levelling was not fully tested because of a Government Of Pakistan decision to deemphasize it mid-way through the project period in favor of watercourse improvement.

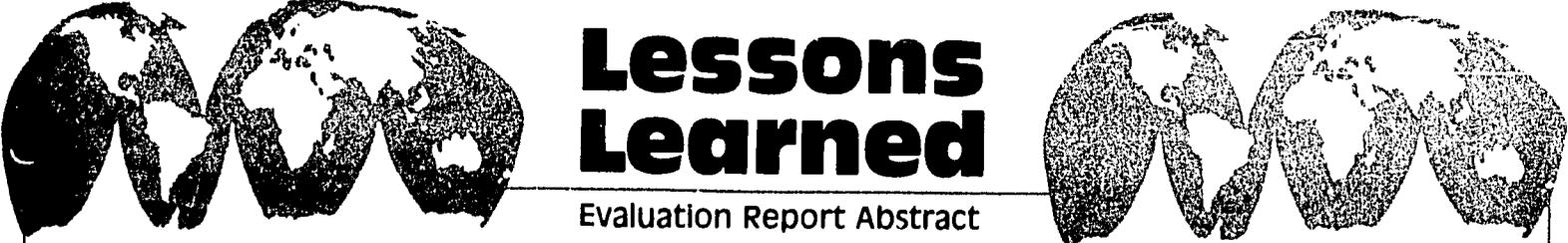
The On-Farm Water Management Project in Pakistan

The planned agricultural extension element was not adequately implemented, possibly partly as a result of competition with an existing extension service and partly due to AID's choice of the fixed amount reimbursement mechanism for project financing. Though effective for public works activities, the fixed amount reimbursement method appears to be less effective for promoting project activities such as agricultural extension, which lack fixed unit costs; its use for such project components needs to be reconsidered.

The cost of watercourse improvement exceeded planned levels due to price escalations and failure to take into account provincial government overhead costs. Encouraging financial participation by farmers in watercourse improvement could reduce project costs or spread benefits further and might increase farmers' contributions and commitment to maintaining improvements.

The quality of staff in the host country implementing agency is the key to successful project implementation. Recruitment and retention of such staff necessitate development of appropriate personnel standards, regularized positions, and a strong training program well integrated with project needs. Full achievement of improved on-farm water management requires, in addition to watercourse improvement, farmer training in efficient water usage and better cropping practices through extension which, in turn, requires a cadre of well-trained agricultural extension agents whose skills may also be in demand elsewhere. The establishment and maintenance of an effective extension staff thus demands attention to adequate pay levels, specialized training, and appropriate coordination or integration with existing agricultural extension services.

Copies of the complete report, AID Project Impact Evaluation No. 35, The On-Farm Water Management Project in Pakistan (PN-AAJ-617), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Agricultural Research in Northeastern Thailand

Report of a Project Impact Evaluation

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U.S. Agency for International Development

May 1982

Agricultural Research in Northeastern Thailand

As part of an A.I.D. effort to assess the impact of its assistance in the agricultural research sector, an interdisciplinary team conducted an evaluation of agricultural research in Northeastern Thailand in January-February 1981. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

In 1962, the Ministry of Agriculture and Cooperatives in Thailand officially established an agricultural research center at Tha Phra near Khon Kaen, located 400 kilometers from Bangkok. The center was to be a multidisciplinary research facility focusing on the Northeastern region and responsive to the needs of the farmers. In addition, it was to support and coordinate the work of the Ministry's 112 small research centers and stations in Northeastern Thailand.

USAID/Bangkok first assisted this project in the mid-1960s by providing graduate training to 24 Ministry employees who were to staff the center. In 1966, a multifaceted project was launched for institution-building at the center. A contract was signed with the University of Kentucky, Lexington Kentucky, and from 1966 to 1975 Kentucky Project officials were responsible for (1) advising center administrators; (2) arranging for training employees in the United States; (3) assisting in the establishment of research laboratories, research programs, and extension activities; and (4) coordinating functions at the center.

An excellent physical facility was constructed which has been carefully maintained. Since 1966, a total of 118 Ministry employees have received U.S. training in agricultural disciplines mostly at the University of Kentucky. By 1975, laboratories were well established and substantial research work was underway. However, since 1975, research programs have been reduced and the professional staff of the center is far below projected numbers. The research carried out is essentially conventional and laboratory- or station-focused; there is little evidence that it is responsive to the needs of small farmers in Northeastern Thailand.

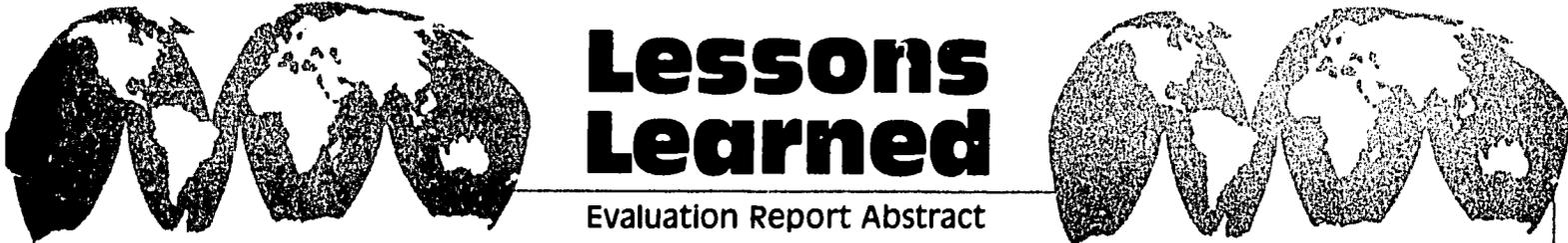
Kentucky Project extension and training activities started slowly, but since 1975 several initiatives have been launched. These include a series of television and radio programs, a mobile extension unit, and an agricultural information network. These initiatives were not planned at the beginning of the project. However, at the time of review, these activities and their support units were the most dynamic at the center. Modest USAID support to these programs could do much to enhance the quality and quantity of agricultural information available to Northeastern farmers.

Agricultural Research in Northeastern Thailand

Scientists at the center need to familiarize themselves with the complexities of agricultural production and decision-making in the Northeast. This could contribute to future research activities and outreach programs which are more relevant to the needs of a greater variety of farmers. Furthermore, bureaucratic conflict has created an atmosphere in which much research done at the center is rejected out of hand by the central Ministry of Agriculture and often has to be redone in order to be acceptable. Declining budgets, loss of coordinating authority, frequent institutional redefinition, and loss of status and professional autonomy have combined with previously mentioned factors to defeat efforts to build a major research capacity in Northeastern Thailand.

Ministry, USAID, and University of Kentucky Project officials chose not to reexamine and reformulate the project, inspite of ample, early evidence that the center lacked sufficient bureaucratic potency to accomplish its long-range goals. It seems unlikely that more detailed planning could have pinpointed and overcome this problem. However, AID officials should have recognized the problem by the late 1960s and done something about it. They could have (1) pulled out, (2) decided to support only the most promising portions of the project (e.g., the training component), or (3) worked with the Ministry to strengthen the bureaucratic position of the center. That none of these things happened reflects negatively on responsible USAID officials, but perhaps more so on AID structures and procedures. These may have discouraged Mission officials from reexamining projects and making mid-course corrections 10 years ago. Whether or not there have been sufficient changes in incentive structures to encourage them to do so today remains to be seen.

Copies of the complete report, AID Project Impact Evaluation No. 34, Agricultural Research in Northeastern Thailand (PN-AAJ-615) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Food Grain Technology:
Agricultural Research in Nepal

Report of a Project Impact Evaluation

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May 1982

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Food Grain Technology: Agricultural Research in Nepal

As part of an A.I.D. effort to assess the impact of its assistance in the agricultural research sector, an interdisciplinary team conducted an evaluation of agricultural research in Nepal in January 1982. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

In 1957, the U.S. Operations Mission initiated support for a broad-ranging agricultural development effort in Nepal. This project continued without pause for 17 years, largely in pursuit of the objective of increasing Nepal's food grain production capacity by enabling and encouraging Nepali farmers to apply the techniques of scientific agriculture. While the U.S. financial and technical assistance was continuous, the emphasis, the pace, and the amount of Nepali involvement were altered considerably during the course of project implementation. The project began as a "general agriculture" initiative and gradually evolved to its concluding emphasis on the development and dissemination of "food grain technology."

The project successfully contributed to the establishment of agricultural research and extension systems by training almost 600 Nepalis to the B.S., M.S., and Ph.D. levels and by constructing facilities for research at five stations in the Tarai--at Nepalganj, Bhairawa, Parwanipur, Janakpur, and Rampur. With the assistance of the extension service, improved wheat, rice, and maize varieties that were tested on the research stations were spread to farmers across the Tarai. Some of the selected improved varieties proved widely adapted to Nepal's enormous range of agroecological conditions and spread into the Hill and Mountain farms as well. Other parts of the "technology packages"--which included recommendations for fertilizer, time of planting, spacing, and irrigation--were not so widely adopted.

In trying to assess more precisely the differences that could be attributed to the implementation of the Food Grain Technology project, we first examined statistical fact sheets and research reports. We then talked with agricultural leaders (many of whom had apparently taken advantage of training opportunities offered under the project) and with agricultural producers. We took a long view in these dialogues, trying to comprehend the pattern of changes which had occurred in the agricultural sector over the past two decades. While looking at reports of experimental trials and at growing fields of wheat and mustard, we discussed not only what had happened, but what might not have occurred had the project never been implemented.

Food Grain Technology: Agricultural Research in Nepal

Our examination provides both a sense of solid accomplishment and a basis for some disquieting fears. On the positive side, we found the following:

- A functioning research system has been developed.
- Farmers are immensely aware of the need for and the problems related to Krishi bikash (agricultural development).
- Extension and research services can, at times, work together in complementary, mutually reinforcing activities which result in new plant varieties and increased knowledge in the countryside.

On the negative side were the following factors:

- Researchers and farmers are not in complete agreement on which agricultural problems need to be addressed, nor are the channels for communication as open as they could be.
- The "green revolution" as it has occurred in Nepal has not yet resulted in long-term security and economic independence as expected but has contributed to economic and environmental destabilization.
- The productivity of farmers, extension workers, researchers, and those agencies charged with input supply distribution is far from optimal.

Thus, researchers articulate the need to continue the search for new varieties which are higher yielding, more disease resistant, and produce grain with acceptable qualities of taste. Farmers agree that variety development is important, although they emphasize other criteria for variety selection as well. Farmers also recommend that increasing reliability of water and fertilizer supplies is more important for handling their problems of deteriorating soil fertility, declining farm sizes, with low yields, and high risks. The role of agricultural research and extension is not in question; at stake are the issues of research priorities and their relevance to farmers' resources and constraints.

The fact that farmers have adopted components of technology packages at all may reflect less the persuasive rhetoric of research

Food Grain Technology: Agricultural Research in Nepal

and extension than the farmers' response to the increasing pressure of population and to their families' requirements for food and cash. Nevertheless, without the technology packages, it is unlikely that Nepal's farmers would be as productive as they are today.

Copies of the complete report, - AID Project Impact Evaluation No. 33, Food Grain Technology: Agricultural Research in Nepal (PN-AAJ-614), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

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Lessons Learned

Evaluation Report Abstract

Panama: Rural Water

Report of a Project Impact Evaluation

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U.S. Agency for International Development

May 1982

Panama: Rural Water

As part of an A.I.D. effort to assess the impact of its assistance in a number of development sectors, an interdisciplinary team conducted an evaluation of the rural water project in Panama in August 1980. The following is an abstract of the completed report which has been published in the AID Project Impact Evaluation Series.

In 1968, the Government of Panama initiated a new development strategy designed to improve conditions in rural areas of the country. On the issue of public health, the strategy called for coordinated efforts in health, nutrition, and environmental sanitation, including the provision of piped water systems to villages with 250 to 500 residents. Piped water systems had previously been available only to larger communities. The new strategy recognized that public water service could be practical in small communities if villagers accepted responsibility for operation and maintenance.

In 1972 and 1976, AID approved rural health loans to the government of Panama. Of the \$13.3 million provided under these loans, almost \$6 million was allocated for improving environmental health, primarily through the construction of piped water systems. Many systems were converted to gravity systems as fuel costs escalated. By 1980, about half were gravity systems. The installation of piped water systems was carefully planned to enlist the participation of community residents and their commitment to maintain the systems.

By 1980, original expectations concerning project outputs had been exceeded, and 562 piped water systems were completed. The AID evaluation team visited 26 randomly selected communities with piped water systems, all of which had been in operation during 1980. Sixteen of the systems had good records of operation, with effective management, adequate maintenance, and regular collection of fees. The other 10 systems in the random sample were experiencing problems. Communities with strong local organizations had a good prospect of resolving their technical and/or economic problems in the near future. A viable solution did not seem as likely, however, in villages where motivation and leadership were lacking.

After an initial shakedown period, the reliability of water systems seemed to be high. All communities visited had trained personnel who could operate and maintain the equipment and handle simple repairs.

Monthly charges for piped water ranged from \$0.25 cents per household in gravity systems to as much as \$3.00 per household in diesel-operated systems. Collection problems were most prevalent in systems operated by diesel or electricity. Several villages had converted to gravity systems.

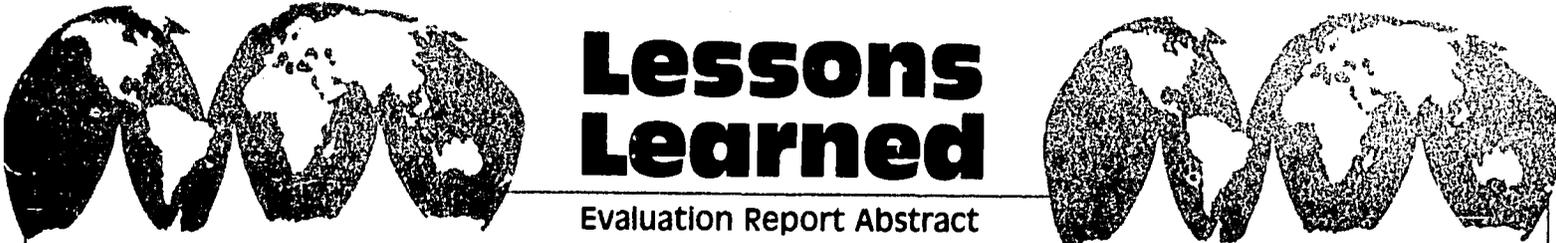
Panama: Rural Water

Access to piped water systems was almost universal in all the villages visited. Some families were without taps because they did not participate in the construction of the systems, their houses were located at too high an altitude and could not be served by a system that depended on gravity, or they had moved into the village after the system was constructed and lacked resources to extend the pipes to their houses. In a few communities, new residents did not gain access to the water supply because rapid population growth had already overtaxed the system.

In most villages, residents reported using the water for drinking, cooking, bathing, washing dishes and clothes, and for household cleaning. The water was reported to be clear, sweet, and odorless. Most households had good access to the piped water system from a tap in the house or next to it. By bringing water closer to rural households, the new water systems made life easier for women.

The experience of building, operating, and maintaining a piped water system enabled communities to take initiatives and resolve their own problems. The process of implementation thus encouraged self-reliance. Effective local leadership was important to the successful operation of piped water systems.

Copies of the complete report, AID Project Impact Evaluation No. 32, Panama: Rural Water (PN-AAJ-609), may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

SUDAN: THE RAHAD IRRIGATION PROJECT

Report of a Project Impact Evaluation

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March 1982

Sudan: The Rahad Irrigation Project

As part of an A.I.D. effort to assess the impact of its assistance in the irrigation sector, an interdisciplinary team conducted an evaluation of irrigation in Sudan in February 1981. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

A major part of the Sudan's program of economic reform is the continued development of underutilized water resources and arable land. The Rahad Irrigation Project is a key element in expanding the production of export crops through fully mechanized irrigated agriculture. Nearly complete in terms of irrigation works and land preparation, this \$400 million investment has as its objectives: (a) intensive utilization of government investments in Nile water management; (b) production of medium staple cotton and groundnuts and (c) improved welfare of up to 100,000 herders and subsistence agriculturalists through increases in incomes, employment and social services. Long familiar with large scale irrigated government schemes, the Rahad Project is intended as an eventual model of full mechanization and 100 percent intensive rotation of cash and subsistence crops guided by government management.

The A.I.D. contribution to the overall Rahad Project began in February 1973 with a \$11.0 million loan. This loan supplied heavy equipment and spare parts for construction of the irrigation works and for land preparation. It also provided technical services for the procurement and management of equipment. Recently, through the Commodity Import Program, A.I.D. has supplied mechanical cotton pickers and vehicles to facilitate the mechanization of the field operations. The A.I.D. project can be judged successful in meeting an equipment need at a critical time in the implementation of the Project. Effective utilization and maintenance coupled with timely delivery of inputs contributed to substantial progress in the development of project infrastructure.

Although the Project has just completed its fourth growing season in the more developed southern sections, there are indications of classic problems which might ultimately threaten its social and economic viability. The production system is based upon a standardized family tenancy which is supervised through a Corporation inspectorate system. The system controls product and input prices, water and machine charges, marketing and most decision making. During these few years cotton yields have in fact declined, and incomes have been lower than required to break even. The Corporation has had to cope with problems of the management of mechanized operations, apparent labor shortages, and tenant dissatisfaction with the low quality of health, education and other village services.

In the face of declining incentives to grow cotton, tenants employ various strategies to obtain additional income from other sources.

Sudan: The Rahad Irrigation Project

Almost all tenants and laborers maintain livestock and many continue to work away from the Project as wage laborers on other schemes. The added value of off-farm income has not been calculated, but is understood to be critical to Project villagers who increasingly find it difficult to benefit from Project-derived income. The mechanization of field operations also results in less Project-derived income for both laborers and for merchants who normally benefit from a cash flow. The Project mechanization policy is based upon perceived labor deficits and the desire for higher yields through integrated mechanized operations. It is unclear as to the extent of a real labor deficit in Sudan or whether scarcity is regionally created by less attractive Project wages. Mechanization will, however, displace labor and might further weaken tenant ties to farm management decision-making.

Tenants have indicated the need for several changes. First, a greater degree of tenant decision-making is desired. This is reflected in the tenants' interest in growing groundnuts -- where there is freedom to market outside Corporation auspices -- and in producing sorghum. Restriction on growing sorghum, the village's basic staple crop, has created a dependant on an inflated private market. The integration of sorghum, vegetables and livestock into tenancies of more manageable size would meet a number of tenant demands.

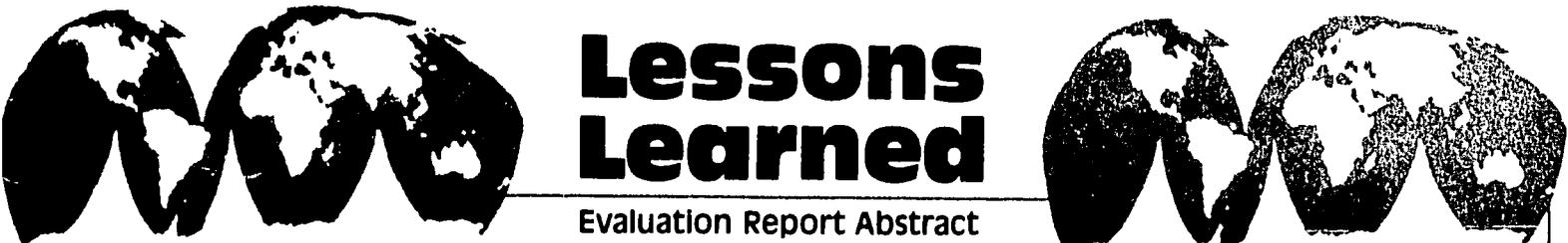
The Rahad Project was conceived of as a community providing a full range of services to its inhabitants. Severe limitations on available local currency have meant that schools, health facilities, and social services have either not been provided on an equitable basis to all eligible communities or, due to inadequate budgets, have not performed at a satisfactory level. The Rahad Corporation is taking measures to accelerate coverage by increasing its social development budget. Tenant dissatisfaction is compounded by what is viewed as a sluggishness to meet recruitment promises for a better way of life.

A diversified economy including adequate off-farm economic opportunities, a mix of occupations and skills and a rich religious, political and educational life will all be needed to retain the semblance of community. Sustainability of the Project will require a permanent population, adequately motivated, with a level of initiative to improve community welfare through community-based participation in conjunction with Corporation guidance.

Sudan: The Rahad Irrigation Project

Copies of the complete report - A.I.D. Project Impact Evaluation No. 31, Sudan: The Rahad Irrigation Project, (PN-AAJ-610) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, U.S. Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

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Lessons Learned

Evaluation Report Abstract

Guatemala: Development of the Institute of
Agricultural Science and Technology (ICTA) and
its Impact on Agricultural Research and Farm
Productivity

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

February 1982

Guatemala: Development of the Institute of
Agricultural Science and Technology (ICTA) and
its Impact on Agricultural Research and Farm Productivity

As part of an A.I.D. effort to assess the impact of its assistance in the agricultural research sector, an interdisciplinary team conducted an evaluation in Guatemala in May 1980. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

During the decade of the sixties, food production in Guatemala barely kept pace with the demands of a growing population. In 1970, the Government of Guatemala initiated a restructuring of public agencies to provide coordinated service to small food-producing farms. An innovative organization, the Institute of Agricultural Science and Technology (ICTA), emerged from this restructuring with responsibilities for generating and promoting the use of improved technologies in basic food crops. AID supported this restructuring with a series of loan and grant projects beginning in 1970.

In 1975, AID approved the Food Productivity and Nutrition Project. Its purpose was to increase the production and nutritive quality of basic food crops in Guatemala and to strengthen and develop ICTA as an institution. Of \$1.73 million allocated for the project, \$1.2 million was for expatriate technical assistance, including plant breeding experts and other technicians who staffed ICTA while project-sponsored Guatemalans were being trained to assume positions within the new institute.

Three crops, maize, beans, and sorghum, were targeted for increased production. Working with experts from international agricultural research centers, ICTA personnel developed new varieties and tested them under small farm conditions by collaborating with farmers. With the assistance of the Inter-American Development Bank, a seed service was organized to process seed and help maintain genetic quality.

New varieties of both maize and beans were introduced and increased yields have been recorded. Using improved seed and other technologies recommended by ICTA, collaborators have obtained increased yields. Gains in maize have been primarily in lowland varieties, but one new highland variety is promising. The impact of new seed on maize production is expected to increase as the amount of seed produced increases.

New varieties of beans may reduce or eliminate the need for costly programs to control Golden Mosaic. New varieties of sorghum were not released until 1980 and thus could not be evaluated. However, they appear markedly superior to previously available varieties.

Guatemala: Development of the Institute of
Agricultural Science and Technology (ICTA) and
its Impact on Agricultural Research and Farm Productivity

In addition to developing and recommending improved seed, ICTA developed and recommend other farming practices related to increased yields, such as planting distances, seed densities, fertilizer applications, and weed and insect control. Indices of acceptance developed by ICTA indicate that increasing numbers of farmers who have collaborated in the field testing of such new technologies are adopting ICTA recommendations. Interviews with ICTA personnel and with individual farmers support this impression.

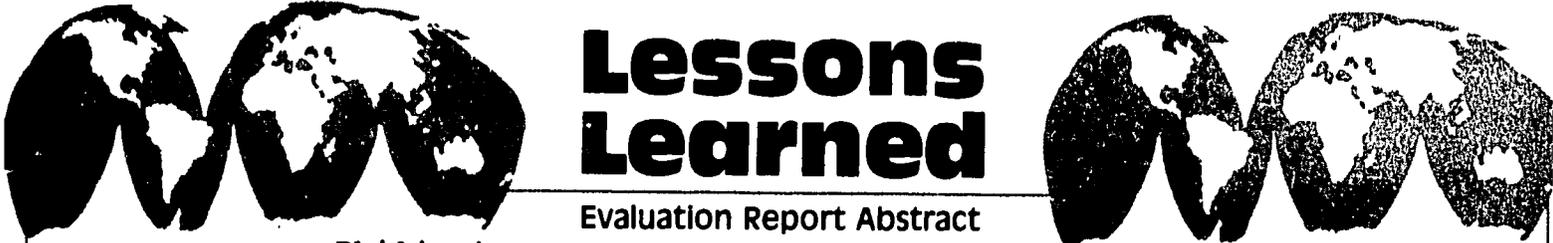
The AID project facilitated and hastened the strengthening of ICTA as an institution. The number of ICTA staff increased and staff qualifications improved. Expatriates facilitated the research work of ICTA and its growth as an organization. With project support, 10 Guatemalans received advanced training and by 1979 and 1980, they were returning to ICTA to replace expatriates.

However, high attrition rates among personnel with advanced degrees are a serious problem for ICTA. Rigid salary schedules are apparently responsible, but ICTA managers have been unsuccessful in efforts to obtain the authority to revise these schedules. With the departure of expatriate advisors, these high attrition rates may make sustaining and expanding the present ICTA system more difficult.

Some confusion remains regarding the respective roles of ICTA and DIGESA, the extension service of the Ministry of Agriculture, particularly as ICTA's approach to research draws on some techniques of traditional extension methodology. ICTA and DIGESA are working on this problem, and it seems likely that new patterns of relationships will develop.

ICTA has come to represent a new model for agricultural research that planners and researchers in other countries are studying and attempting to replicate. If there is continued and increased support from the Government of Guatemala, it will be able to sustain and expand its present activities.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 30, Guatemala: Development of the Institute of Agricultural Science and Technology (ICTA) and its Impact on Agricultural Research and Farm Productivity, (PN-AAJ-178) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Philippines: BICOL Integrated Area Development

Report of a Project Impact Evaluation

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February 1982

Philippines: BICOL Integrated Area Development

As part of an A.I.D. effort to assess the impact of its assistance in the area development sector, an interdisciplinary team conducted an evaluation of area development in the Philippines in July 1981. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

The Bicol River Basin is both endowed and punished by Nature. The same can be said of its treatment at the hands of Man. Nature has provided a verdant rice bowl and ample exploitable water, but it also lashes the region with fearsome typhoons which cause flooding and destruction to people and crops alike. People have contributed to the problem by steadily destroying the upland forest cover, causing precious topsoil to be washed into an increasingly silted and overflowing river system. Their government, in the past, did relatively little to ameliorate these conditions, to tame the waters for human benefit, or to overcome the region's poverty. Yet people, through government, have recently initiated efforts to control and exploit the waters, to provide road access to hitherto isolated areas, and generally, through the Bicol River Basin Development Program, to promote and invest in development.

The goal of the Bicol River Basin Development Program is to raise the socioeconomic level of the region's people to the national average by 1990 and to sustain it at that level thereafter. To this end, AID has made two grants and five loans -- for a total of \$30.4 million -- to the Government of the Philippines, which has itself invested approximately \$75 million. Collectively, the program's major objectives are to:

- Introduce double rice cropping and increase per hectare yields through improved irrigation, drainage, water management, general farm practices, and marketing;
- Construct and maintain new road systems;
- Increase not only donor and Philippine government investments but also private sector agribusiness and rural manufacturing investments;
- Improve land tenure arrangements;
- Enable upland farmers to utilize more productive and environmentally sound land use practices, and improve public forest land management; and,
- Improve sanitary environment and household water supplies and increase local government financial support of health, nutrition, and population programs.

Philippines: BICOL Integrated Area Development

To this ambitious agenda was added a set of institutional innovations calling for decentralized decision-making, local people's participation, and a multisectoral and integrated area approach. Area planning and project design are done by the Bicol River Basin Development Program Office, with project implementation handled by government line ministries, monitored and coordinated by the Program Office. An elaborate system of committees has been established to ensure cooperation and coordination at various bureaucratic levels. The effort has been widely publicized.

The impact of the Bicol Program to date is limited, though not unpromising. Although it has been in existence for eight years (since 1973), most of that time has been spent in laying the groundwork, designing projects, raising resources, and initiating project implementation. A large staff and institutional infrastructure have been put into place and numerous plans and studies have been produced. The major action has now passed from planning to implementation. Among the projects, most of the secondary and feeder roads are built and passable, if not yet fully surfaced. Approximately one-third of the AID-supported irrigation and drainage facilities have been completed. An agro-forestry pilot project has been initiated in the ecologically critical upland areas. Ninety-four out of 400 village health aides have been trained and fielded. The people of the area generally anticipate better lives once the projects are completed, though considerable grumbling can be heard in some areas where project setbacks or delays have occurred and where proposed irrigation system changes and management arrangements are proving contentious. (The delays have generally been due to rapid inflation requiring rebidding on physical infrastructure contracts exacerbated by the time-consuming requirement that most contracts be approved in Manila.)

The early impact of the roads project appears to be positive. Access has increased substantially, traffic growth on many roads is considerable (if not always enough to justify their high quality surfacing), market days are more frequent, more buyers are coming direct to the farmgate, marketing margins are improving, and access to education and health facilities has also improved.

One may also anticipate favorable impacts from the new irrigation systems which will permit improved yields and additional areas under double cropping. However, profitability to individual farm families and to landless laborers in their employ will depend on water use fees, input costs, and farmgate paddy prices. If the returns to farmers fail to exceed their costs by a sufficient margin, the potential of the new system will clearly not be realized.

Philippines: BICOL Integrated Area Development

When the irrigation and access road costs are measured against the value in current prices of the additional rice to be produced, or compared to current irrigated rice land prices, the Bicol program's cost-effectiveness appears low. In the future, however, with growing population pressure on land resources, the investment is likely to appear more cost-effective.

Notwithstanding some expansion and growth in the numbers of rice mills, rural banks, and sari-sari stores, efforts to promote private investment in the program area have been limited and unsuccessful.

Efforts at institutional coordination and participation have been successful--except at the critical farmer level. Only recently, through the hiring of community organizers, has active (as opposed to passive) farmer participation been encouraged in some areas, with a correspondingly greater likelihood that they will effectively utilize, maintain, and fully benefit from the new facilities.

The importance of the Bicol River Basin Development Program lies in its ambitious melding of three major themes in current development thinking: (a) a concerted focus on a geographically discrete area; (b) a systematic integration of various sectoral services consistent with the reality of integration at the farm level, and (c) a redistribution with growth, out of concern over the gap between rich and poor. As such, the BRBDP represents an impressive effort. Experience to date suggests that the river basin is a suitable and appropriate unit for development planning. It also suggests that integration is most useful as a planning device, if not necessarily as an implementing procedure. While economic growth seems assured, the returns with respect to redistribution are not yet in.

Sustainability of the Bicol River Basin Development Program will depend on the success with which farmer participation is further encouraged, on farmers' productivity rising sufficiently to offset their higher costs of production, and on creative new leadership and a fresh mandate for the BRBDP Program Office in addressing "second generation" as well as lingering "first generation" problems in the region.

The lessons of the BRBDP are as follows:

- Integrated area development can be planned and its implementation coordinated through the BRBDP model; however, if the initial impetus is not to wither, continuing and consistent national level support is needed for sustaining program priority, decentralized authority, and high quality program leadership.

Philippines: BICOL Integrated Area Development

- Although hyperbole in selling an integrated area development program may be considered necessary to elicit initial domestic political support and donor funding, it will cause increasing problems for the program over time. Because implementation inevitably takes longer than expected and produces unexpected negative as well as positive-by-products, hopes raised excessively may easily turn to disappointment and erosion of future support.

- Early and active beneficiary participation is both possible and crucial to success. Rather than automatically imposing new organizations, recognition and strengthening of existing ones, formal and nonformal, may enhance and speed participatory efforts.

Perhaps the most important lesson of the BRBDP is that cited by the program's first director: "We must look beyond mere physical construction; that can always crumble. What we must really do is work for changes in attitudes of the people, to help them believe in their potential to achieve a better tomorrow. That will be the ultimate mark of success."

Copies of the complete report - A.I.D. Project Impact Evaluation No. 28, Philippines: BICOL Integrated Area Development, (PN-AAJ-179) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Sederhana: Indonesia Small-Scale Irrigation

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

February 1982

U.S. Agency for International Development
Washington, D.C. 20523

Sederhana: Indonesia Small-Scale Irrigation

As part of an A.I.D. effort to assess the impact of its assistance in the irrigation sector, an interdisciplinary team conducted an evaluation of small-scale irrigation in Sederhana in May - June 1980. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

When the Sederhana Irrigation and Reclamation Program was initiated by the Government of Indonesia (GOI) in 1974, it signalled a new focus to long-standing efforts to increase rice production. Sederhana was designed to rehabilitate or construct small, technically simple irrigation systems, each serving fewer than 2,000 hectares. The program was to be rapidly implemented throughout the vast Indonesian archipelago with a minimum of detailed planning. With improved systems to increase the supply, reliability and coverage of irrigation water, it was intended that farmers would increase their rice production and their incomes, and the country would benefit from a corresponding decline in rice imports.

Participation by the Agency for International Development (AID) in the Sederhana program began in June 1975 with the authorization of a \$20 million loan that was increased to \$23.7 million in 1976 (Sederhana I). AID support of the Sederhana program was consistent with its mandate for rural development and assistance to the rural poor. Areas totalling 550,000 hectares targeted for development and AID assumed 40 percent of the total projected project cost. The primary purpose of AID support was to improve the institutional capacities of Indonesian agencies responsible for implementing the program. The Ministry of Public Works (MPW), specifically the Directorate General of Water Resources Development was responsible for the construction of the irrigation systems. The Ministry of Agriculture (MOA) was to help develop farmer water user associations, supervise farmers in the construction of tertiary canals and farm ditches and provide extension services. Lack of coordination between the Ministries has been a concern throughout the program. The agricultural or farm level aspects of Sederhana -- development of water user associations, water management and system maintenance as well as extension services for inputs and advice on cropping patterns -- have constantly been playing catch-up with construction, the more visible aspect of the program and the one which commands the lion's share of the funds. In 1978, additional funds totalling \$29.5 million were committed to continue and extend the activities of the Sederhana program (Sederhana II). AID approved Sederhana II before any funds from the original project had been spent to reimburse actual construction of irrigation systems.

The project proved difficult to administer. Although about 600 subprojects were completed or underway by June of 1980, only 52 had been certified for reimbursement by AID under Sederhana I. The slow

Sederhana: Indonesia Small-Scale Irrigation

rate of reimbursement was due to start-up problems, to design and construct faults that required work to be redone, and to the fixed amount reimbursement (FAR) method used by AID to fund the program. Under the FAR method, a pre-agreed payment for each subproject took place only after construction was completed and certified by technical consultants to be satisfactory. It was argued that this method would eliminate the problems of cost overruns, support the entire program rather than individual subprojects, and allow AID disbursements to continue at the pace of project implementation until the funds were exhausted. Since the Sederhana program and hundreds of subprojects scattered throughout Indonesia, certification became a time-consuming and cumbersome activity. While it did appear to assure certain construction standards, it probably did not meet the need for more substantive technical assistance in the design and construction of so many small systems in diverse physical and social environments. The few technical assistance consultants were left with little time to concentrate on transferring skills and knowledge to their Indonesian counterparts.

Most of the irrigation systems that had been reimbursed under Sederhana I were well constructed. The water users associations that were to be formed as part of the program, however, did not appear to be operating and maintaining the systems as intended. Water management practices varied considerably, depending upon the abundance and reliability of the water supply, farmers' experience with management of irrigation systems and traditional local leadership.

In most of the 29 subprojects visited on Java, Sulawesi and Sumatra, Sederhana's impact on local rice production was substantial despite the difficulties of implementation. On Java, where there is a long tradition of rice farming, production increased substantially at most of the sites visited. On Sulawesi, rehabilitated irrigation systems frequently permitted an additional rice crop each year. Yields increased by as much as 2 tons per hectare. The production of dry land crops also improved. On Sumatra, however, the production impact was not encouraging. At many sites, environmental conditions such as soil and climate did not appear favorable for growing high yielding varieties of rice. The program's emphasis on rice production appeared to be meeting with resistance both from farmers who could not or did not want to grow high yielding varieties and those who did not want to switch from a profitable cash crop such as coffee to a rice crop which requires a great deal of labor (in short supply on Sumatra) and which they were not accustomed to growing as a principal crop. Local production impact has confirmed an assumption in the Sederhana concept that farmers could make immediate use of additional water. The variability of success represented by the subprojects visited in the course of this evaluation, however, presents some of the limitations which this national program confronts in specific local environments.

In most subprojects, increased production provided landowning families with an increase food supply to consume at home or to barter for other foods. Occasionally surplus production was sold

Sederhana: Indonesia Small-Scale Irrigation

for cash income. Most tenants with stable tenancy arrangements also realized a net gain from increased production, but sharecroppers and landless laborers were sometimes affected adversely. As farm work became more profitable, underemployed members of landowning families assumed many of the new requirements for labor in the improved Sederhana systems.

Overall, although rice production has increased, so too have per capita consumption and population. Indonesia continues to import more rice than ever before. This production is to keep pace with population, the Sederhana program must continue to improve its effectiveness. From the Sederhana experience between 1975 and 1980 the team drew the following lessons which may contribute to future development efforts:

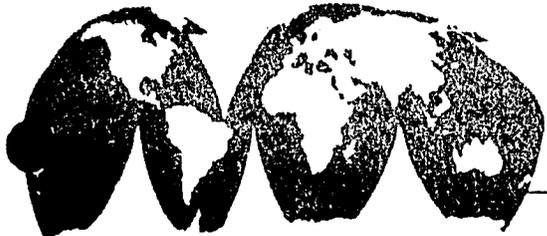
- Programs with many subprojects designed for rapid implementation inevitably confront trade-offs between quantity and quality. A centralized design and approval process permits rapid and high volume design work, but depends upon accurate site survey information to ensure appropriate results. Increasing local participation is beneficial if it can improve site survey information and encourage farmers to become involved in making the project successful. Decentralizing the design process and working to increase local participation can improve the effectiveness of implementation, but reduces the number of subprojects that can be undertaken.
- Coordination of the construction and production aspects of a project is difficult, but essential to success. Where coordination is necessary to achieve project results, AID should not assume it will occur automatically, but should realistically assess the incentives for various institutions to perform as expected.
- The balance of technical and capital assistance needed depends on the maturity of the project and the various technical difficulties that it presents. Technical assistance is more important in the early stages of a project to prevent costly errors and to help build skilled and experienced personnel within the government ministries. It is also essential in remote areas where isolation exacerbates administrative and technical coordination.
- Farmer participation is essential to sustained progress in agricultural development particularly in diverse and scattered project environments. Experience indicates that including farmers in the planning and implementation of subprojects can improve the selection of sites, alleviate right-of-way problems and foster more active water users

Sederhana: Indonesia Small-Scale Irrigation

associations for effective operations and maintenance. Farmer participation is the most effective means to ensure that farmers invest in a system that requires their care and skill to sustain.

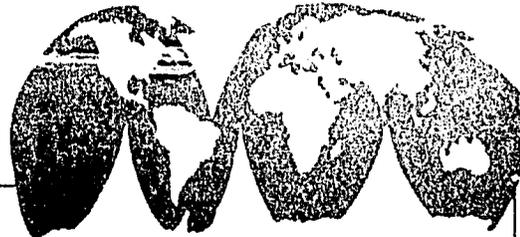
- Farmers indicate that the greatest value of the irrigation system is the reliability of the water supply. While production increases are also valued highly, farmers prefer stable yields to yields that vary from a bumper crop one year to a bad crop the next. The greatest benefits of a small-scale irrigation system, then, are those that first assure water security and build water management activities and other production increases on that solid base.
- Without baseline data or a well-conceived evaluation system, assessing the progress of a project is difficult. The nature of benefits expected from a project and their value to the beneficiaries should be clearly stated at the outset and some indicators should be chosen to measure those benefits as the project matures.
- Programs such as Sederhana can provide substantial benefits for the rural poor, but cannot achieve redistribution of the wealth. Other national development efforts such as land reform can complement agricultural development and permit broader distribution of its benefits.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 29, Sederhana: Indonesia Small-Scale Irrigation, (PN-AAJ-608) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract



KENYA: RURAL ROADS

Report of a Project Impact Evaluation

by

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U.S. Agency for International Development

January 1982

Kenya: Rural Roads

As part of an A.I.D. effort to assess the impact of its assistance in the rural roads sector, an interdisciplinary team conducted an evaluation of rural roads in Kenya in August 1980. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

Kenya has for many years emphasized roads in its development process. This nation, roughly the size of New Mexico and Nevada combined, with a population of nearly 16 million (86 percent rural), has over 100,000 kilometers (km) of roads. Rural access roads, rural feeder roads, and four-wheel drive tracks comprise 45 percent of all of Kenya's road system. These are the roads of current focus and expansion, for they are designed to provide an access to development for the vast majority of Kenyans.

The Agency for International Development (AID), along with eight other donors, is providing rural road assistance in Kenya. Direct AID road assistance began in the early 1970s as one part of an area-intensive rural development pilot effort in six separate administrative divisions (sub-districts). Along with a wide array of integrated rural development activities in Vihiga (Kakamega District), AID assisted in the construction of 56 km of rural access roads, all but 9 kilometers utilizing an innovative labor-intensive technique.^{1/} The subsequent and currently on-going AID assistance to roads consists of the Rural Road Systems Project in western Kenya which comprises regional secondary road upgrading (gravelling, bridging, and culverting) and Rural Access Roads identification, construction, and maintenance. The Rural Access Roads activity, part of Kenya's nationwide target to build an additional 14,000 km by 1985, is entirely labor-intensive in its application, with the exception of the gravelling component which uses tractors and trailors for gravel transport.

The Gravelling, Building, and Culverting Program includes the more traditional, capital-intensive models for more heavily traveled roads. Since all roads in Kenya are classified and scaled to distance and purpose, AID properly continues to stress the importance of a balanced and inter-linked network system of roads with their counterparts, the Ministry of Transport and Communication. Other donors have begun to pick up on this theme; donor-assistance in the transportation sector, primarily focused on rural areas, is therefore becoming better coordinated.

^{1/} Previous AID road-related assistance began in 1966 with the provision of heavy construction equipment and training to the National Youth Service for tsetse fly bush clearing and construction of airstrips, major access roads, and rural settlement roads. Because there was no direct AID involvement or technical assistance in the planning or implementation of the project, it is considered to be beyond the scope of this evaluation.

Kenya Rural Roads

The AID/W Impact Evaluation Team spent one month in Kenya (August 17 to September 13, 1980), traveled 3,116 km and intensively studies 31 individual roads (ten AID-funded Rural Access Roads, 14 other donor-funded Rural Access Roads, two capital-intensive Graveling, Bridging, and Culverting roads, and five Vihiga-Special Rural Development Program roads). The team focused on the socioeconomic impact (intended and actual) of the roads and on the selection, construction, and maintenance system.

In the broad perspective, it was too early to evaluate adequately the long-term socioeconomic impact of the AID-assisted Rural Road System Project, since the oldest roads were completed less than two year ago. The evidence must therefore be treated with caution. Nevertheless, positive perceptions about the roads on the part of officials and rural Kenyans alike, and the roads' potential contribution to rural development were readily apparent. The immediate and as yet generalized lack of direct economic impact, aside from the direct employment provided by the labor-intensive approach, was also striking. There was demonstrated potential and need for more effective utilization of the roads through the coordination of other integrated development activities at both national and local levels. The team believes that identification of basic economic incentives necessary to stimulate development (increased agricultural production, expanded rural incomes, accelerated trade and commerce, etc.) could become the subject of a separate analytical transportation survey. The cost of transportation, both procurement and utilization, is extremely high. Prices of staples and major commodities are fixed, thereby preventing buyers/sellers from recovering any transportation charges and thus serving as a disincentive for private sector development in the poorest and most isolated rural areas, despite their newly acquired "access" by rural roads.

The team also reviewed the ever-present maintenance question. Despite the current success of the labor-intensive maintenance system, the team is concerned about the institution and funding of an adequate post-project maintenance system. The deteriorated, almost unusable Vihiga Special Rural Development Program roads, unmaintained after project completion in 1975, provide an indication of how crucial usable and viable access roads really are.

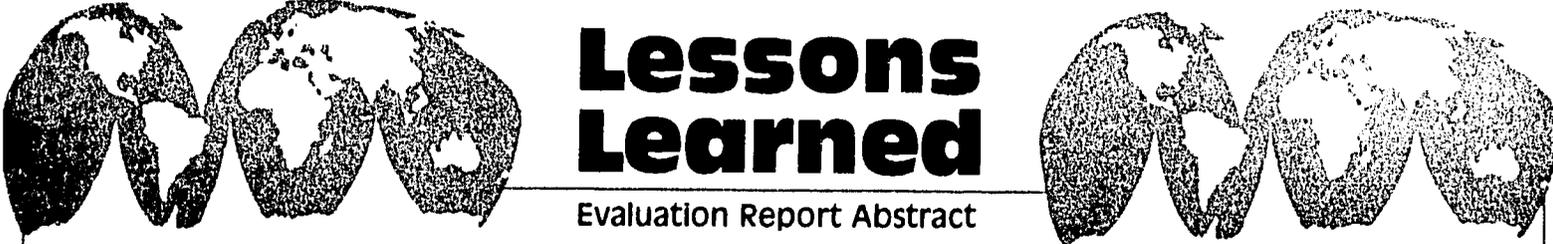
The impact evaluation team found that the current institutionalized system for participatory selection, and the low-cost, labor-intensive approach to construction and maintenance of rural roads in Kenya, are encouragingly successful. Kenya's standardized system, strongly endorsed and supported by all donors, is being effectively and equitably applied throughout the more populated areas of Kenya. The methodology employed has the enthusiastic support, interest, and understanding of the Government and people of Kenya. This national interest, together with local-level involvement in the selection, construction, and

Kenya: Rural Roads

maintenance process; a reasonable wage scheme within the labor-intensive system; an effective ministerial management system; and broad-based, coordinated donor involvement act to make Kenya's rural roads a positive model with a wide potential for replication.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 26, Kenya: Rural Roads, (PN-AAH-972) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.

3 of 3



Lessons Learned

Evaluation Report Abstract

Korean Agricultural Research:
The Integration of Research and Extension

Report of a Project Impact Evaluation

by

David I. Steinberg, Team Leader
(Bureau for Program and Policy Coordination)

Robert I. Jackson
(Bureau for Development Support)

Kwan S. Kim
(Bureau for Program and Policy Coordination)

Song, Hae-kyun
(Seoul National University)

U.S. Agency for International Development

January 1982

Korean Agricultural Research:
The Integration of Research and Extension

As a part of an A.I.D. effort to assess the impact of its assistance in the agriculture sector, an interdisciplinary team conducted an evaluation of Korea in May 1981. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

A profound change occurred in the early 1970s that transformed the Korean Government's rural development strategy. From one emphasizing industrial exports, the costs of which were largely borne by the Korean farmers, the strategy evolved into one devoted to improving rural Korean life. The genesis of this approach was both political and economic: a hardening of PL 480 terms and the results of the 1971 election that amply demonstrated that government support had eroded in the countryside. The Korean Government responded with a rice pricing policy advantageous to the farmers, the strengthening of the extension service, the formation of the Sae-maul ("New Village") Movement, and a rapid increase in rural infrastructure.

The origins of AID's support to agricultural research are found in the Korean Agricultural Sector Survey (1972) and succeeding documents that advocated a strengthening of research as a primary need. The project, proposed in 1973 and implemented in 1974, provided \$5 million for a tripartite program to strengthen the capacity of the Office of Rural Development of the Ministry of Agriculture and Fisheries. It included training of Korean researchers overseas, equipment (including a computer and library materials, and both resident and short-term expatriate advisory services. At the close of the project in 1980, 21 Ph.D. students and 17 M.S. students were trained overseas, while an additional 94 received short-term training and 106 participated in observation tours.

Although there were problems with the English language competence of prospective students, the training aspects of the project were universally regarded as the most successful part of the program. Of notable, but secondary, importance was the provision of equipment and supplies, especially the computer and the library materials. Lagging far behind was the value of resident expatriate assistance, which was of marginal use to the project but was more significant in terms of relieving the AID Mission from continuous monitoring of the project than in providing help to the Koreans. Of greater importance was shorter-term foreign technical advice.

The inchoate goal, from a Korean perspective, was probably rice self-sufficiency -- a strategic, political, and economic objective. The project purposes, however, were specified in considerable detail outlining exact yield increases on agricultural experimental stations over a ten-year period in the areas of rice, barley, wheat, and soybeans as well as generalized improvement in potato production

Korean Agricultural Research:
The Integration of Research and Extension

and in the cropping systems. Specific increases were also proposed for farm fields for the same time. Since the decade of crop improvement is to end in 1984, this evaluation must be somewhat circumscribed.

The project paper suffered from spurious specificity regarding experimental station crop increases. Before the project began, experimental yields were higher than those indicated in the paper, often by considerable amounts. The research breakthroughs that the project anticipated were generally made prior to the project. Farmer yields may well reach their objectives by 1984, but the AID project was only a beneficial increment to Korean agricultural research. It supplemented an existing, competent system, but offered little that was innovative.

The concentration on rice led to a lack of emphasis on other crops, an inattention caused by national concerns as well as social and economic factors the project ignored. Although there have been increases in crop yields, hectareage of the other crops has consistently been falling, even before the project began. Thus, national targets will not be met even if a relatively few farmers benefit. The choice of some of the crops covered by the project such as wheat, soybeans and potatoes seems questionable, as does the emphasis on increased fertilizer responsiveness.

Critical to a developmentally effective agricultural research program is the transference of experimental results to the farmers. Through a widespread extension service, a farmer training program that includes almost all families annually, demonstration plots, and the Sae-maul Movement, Korea has developed an authorization but effective means of disseminating research results.

Thus, beginning in 1972 the spread of the high-yielding varieties of rice was pushed with alacrity by the Korean bureaucracy in response to a national command structure. The effort was effective, making Korea self-sufficient in rice by 1975. Yet there were two inherent problems in this comprehensive effort: these varieties were sensitive to cold, and new races of the fungal disease called blast normally develop after a few years if large areas are planted to a single variety.

The crisis developed first in 1979 with a drop in production caused by blast followed by a disastrous 1980 crop due to cold temperatures. The rice crop fell by one-third, creating a crisis of confidence in the government and in the guidance service.

Korean Agricultural Research:
The Integration of Research and Extension

Ironically, the failures of 1979 and 1980 can be attributed to the strengths of the Korean guidance service. Thus its weakness is based on the omnipresent bureaucratic hierarchy that, in contrast to most developing societies, can transform research into production. In singleminded pursuit of its political goals, it neglected elemental precautions that might have avoided the problems of the last two years.

Agricultural research was an appropriate intervention for AID at the time. It assisted a well-established, agricultural research network, but did not materially transform it. It created no new institutions.

Agricultural research will continue in Korea but replication abroad will be difficult. Any successful adaptive agricultural research project will be dependent upon a positive pricing policy, an effective extension service, rural infrastructure, and continuous contact with international research centers, among other factors. Political will is required for its success, but too strong an emphasis on political objectives can undercut its effectiveness.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 27, Korean Agricultural Research: The Integration of Research and Extension, (PN-AAJ-606) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development. The Office of Evaluation welcomes comments on the report.



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Korean Agricultural Research:
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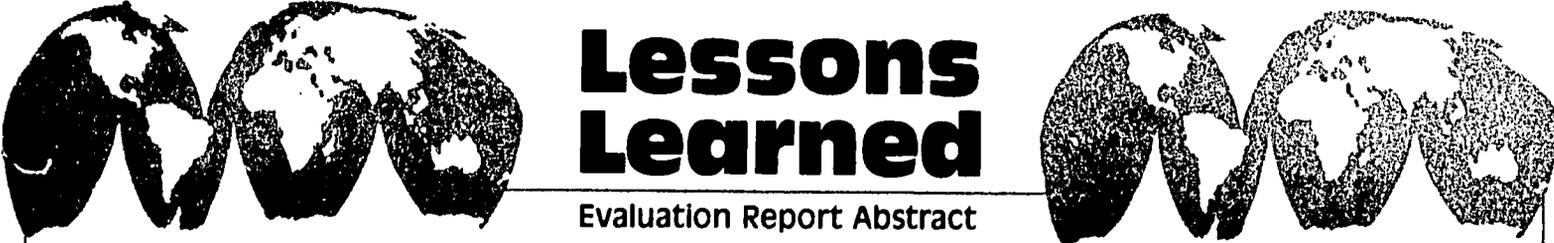
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Lessons Learned

Evaluation Report Abstract

Peru: CARE OPG Water Health Services Project

Report of a Project Impact Evaluation

by

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October 1981

PERU: CARE OPG WATER HEALTH SERVICES PROJECT

As part of A.I.D. efforts to assess the impact of its assistance in a number of development sectors, an interdisciplinary team conducted an evaluation of the rural water supply/health project in Peru in November/December 1980. Although the interpretations are those of the team and pertain to the specific projects examined, the findings will contribute to a forthcoming review of the rural water sector as a whole.

The purpose of this project was to improve the sanitation and health well-being of rural villagers living in the highland region of Ancash Department in Peru. The project was an integrated development activity combining the construction of water supplies and sewer systems with immunization and health education components. At the time of this evaluation the originally planned number of water supplies and sewer systems had been built and were operating. However, in the meantime, the project had been expanded substantially and many additional systems were under construction. This evaluation focused on systems that had been in operation for over one year.

The most successful component of the project was the installation of gravity water supplies. In the villages served, house connections were provided to practically all of the people who wanted piped water. Spring-fed gravity systems were used in earlier projects and were found to be the simplest and cheapest to build, operate and maintain. Rural villagers have been able to meet their day-to-day operation and maintenance needs, however, for the long-term there is a need for technical supervision.

The fewer sewer systems built markedly improved the household sanitation of the limited number of villagers who could afford to hook up to them. However, many villagers could not afford the investments necessary to take advantage of the services. The sewer systems in contrast to the water systems require so much capital and labor that they do not now appear to be a worthwhile investment in rural villages.

The health education component, especially the movies, was received enthusiastically by the villagers but did not appear to have made any impact. CARE's attempt to measure the health impact of the project had not been completed but, because of faulty research design, probably will not provide sufficient evidence to achieve its goal.

The installation of piped water supply systems with house connections had its greatest impact on women and children. Women were saved an average of three hours of work daily by having a water faucet in the patio. Most of the women spent the extra hours on household chores and productive work. Some of these activities save the villagers money while others have income potential. With more

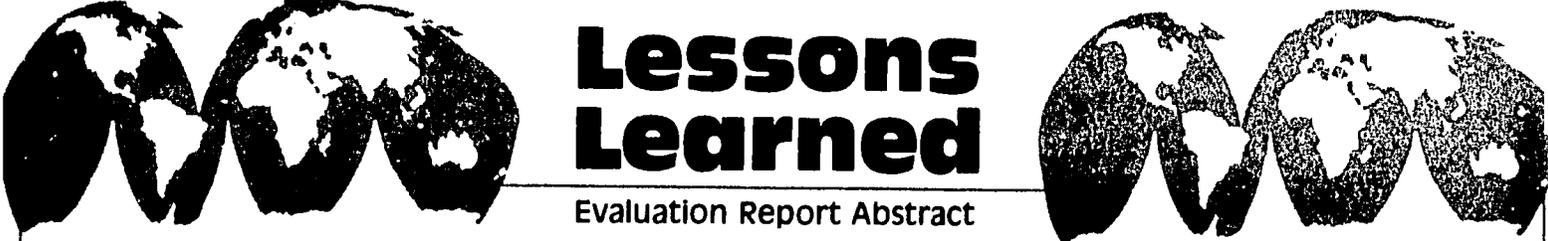
PERU: CARE OPG WATER HEALTH SERVICES PROJECT

water readily available, women reported an overall improvement in household sanitation. Village schoolteachers also noted that with water piped to the homes, they were able to apply improved personal hygiene standards among school children.

Lessons Learned

1. The development process often generates institutional changes which upset the status quo and creates interagency conflicts. These conflicts interfere with project implementation, especially if the project involves more than one host country agency. Project planners should take into consideration the disruptive impact that bureaucratic conflicts can have on development projects.
2. Where water supplies are a top priority, their installation can be justified solely on the basis of improving water quality, quantity and accessibility with the understanding that they will assist in improving health.
3. PVO's are a valuable resource in planning and implementing specialized development projects where they have the necessary professional and technical staffs that can manage them competently.
4. Because of the complexities involved, perfunctory attempts to measure the health impacts of a project whose main purpose is to provide drinking water will not produce conclusive data and should not be funded.
5. Imported materials tend to become the limiting element in development projects and produce rigidities in project design and implementation. They may also cause maintenance and repair problems. To enhance the sustainability of projects and to support the development of local industries, the use of local construction materials should be encouraged even where their initial cost is greater than U.S. imports.
6. The interjection of "food for work" in development projects where a tradition of voluntary community involvement exists can produce more harm than help. It is better to use the food in truly needy or emergency cases or in programs that address specific problems of malnutrition.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 24, Peru: CARE OPG Water Health Services Project, (PN-AAJ-176) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Thailand: Rural Nonformal Education
The Mobile Trade Training School

Report of a Project Impact Evaluation

by

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Thailand: Rural Nonformal Education
The Mobile Trade Training School

As part of an A.I.D. effort to assess the impact of its assistance in the education sector, an interdisciplinary team conducted an evaluation of education in Thailand in November 1980. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

Between 1964 and 1975 the U.S. Government assisted the Royal Thai Government in a comprehensive attempt to improve formal and nonformal education programs, with special attention to the rural population. Among the areas covered were primary, secondary, and adult education; activities included administrative and curricular reform, teacher training, materials production, and facility and equipment improvement.

This impact evaluation study focuses on a significant rural nonformal education project, the "Mobile Trade Training Schools" (MTTS), which was one of the major sub-projects under this assistance effort. Started in 1960 by the Thai Government as a means of providing short-term occupational skill training courses at the entry-skill level for out-of-school rural youth and adults, the courses were based in provincial level "polytechnic" schools and local district level primary schools. Mobility was originally provided by the use of portable tools; trade instructors could arrive almost anywhere and set up shop classes. Later, equipment was purchased for units that could be transferred from one site to another after local demands had been met. In most cases, however, these units became permanent due to the constant recurrent demand for services by local residents. To a more limited extent, courses were offered to more remote rural populations by mobile vans, but this feature was never a major factor in the project.

U.S. assistance to the MTTS project, which started in 1966 and ended in 1972, covered three main items: provision of U.S. technical assistance for project design, management, and evaluation (one advisor); training of key Thai educators in advanced programs in U.S. universities (31 participants) and provision of commodities (vehicles, equipment, tools, teaching aids, and expendable materials).

The original objective of the MTTS project was to provide pre-employment training, but the objectives were soon modified to include skill "upgrading" for employed persons and skill acquisition for personal use. Three principal outputs were planned: (1) a system of 54 MTTSs were to be spread nationwide, but concentrated primarily in the North and Northeast (where the majority of the rural population was centered); (2) five regional polytechnic schools were to be strengthened; and (3) the Bangkok Polytechnic School was to be improved.

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MTTS courses, in great demand by the rural populace, ranged from the traditional offerings of dressmaking, cosmetology, tailoring, barbering, cooking, baking, typing, and building trades, to the newer areas of radio and television repair, air-conditioning and refrigeration, small engine repair, and operation of modern office equipment. Courses originally ran for an average of 300 hours, over a five-month period, but recently have been shortened to approximately 150 hours due to curriculum changes and administrative requirements.

Significant and lasting results of the MTTS project were achieved, and its impact has been felt by both the educational institutions of Thailand and the rural population it was intended to benefit. Forty-five of the 54 targeted MTTSs were in operation by 1972, with 32 located in the North and Northeast. While only one of the five regional polytechnic schools was strengthened significantly, the other four received equipment, tools, and materials originally purchased for the seven MTTSs that were not established. The Bangkok Polytechnic School was provided considerable assistance. From a modest beginning of five regional polytechnic schools, the system added eleven more schools after 1972. Five more are now under construction and future plans call for 54 additional schools; each of the 72 provinces in the nation will eventually have at least one regional polytechnic school.

Between 1966 and 1972, approximately 80,000 persons enrolled in the MTTS program, and 56,000 graduated. The Ministry of Education estimates that most of the "dropouts" left before graduation because they had acquired sufficient skills to secure employment and that completion rates should be viewed with this qualification. Currently, the MTTS program trains approximately 30,000 persons annually. In general, administrative and teaching staffs are highly qualified and highly motivated. Of the 31 Thai professionals trained abroad, 30 are still employed by the Ministry of Education -- nine years after training -- mostly in high-level jobs in adult non-formal education.

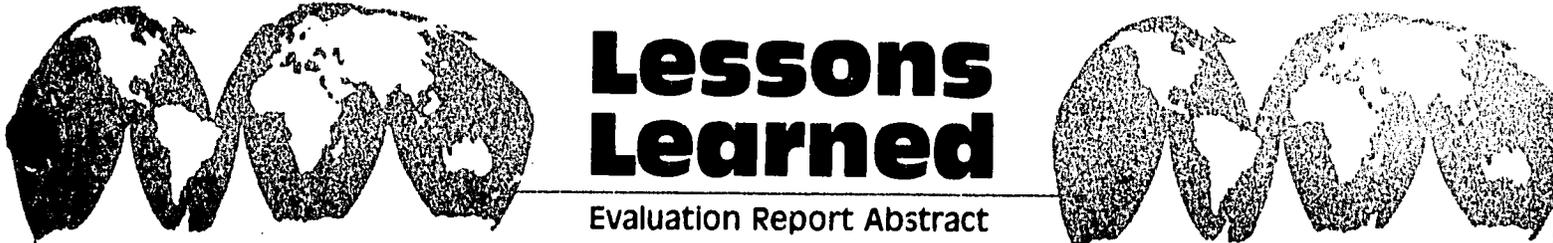
Other major findings of the evaluation study indicate that:

- Participants in the program are both sexes, predominantly young rural poor with minimal education;
- The MTTS program is consistent with existing social values and practices and has strengthened and diversified these norms;
- The MTTS program provides an alternative to the traditional apprenticeship system; and

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-- The MTTS system has contributed significantly to the creation of a more comprehensive nonformal education system in Thailand, the "Lifelong Education Centers." Approximately 50,000 Thais annually receive services from the programs of the MTTS and LEC.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 25, Thailand: Rural Nonformal Education; The Mobile Trade Training School, (PN-AAJ-171) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract
The Product is Progress:
Rural Electrification in Costa Rica

Report of a Project Impact Evaluation

by

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THE PRODUCT IS PROGRESS:
Rural Electrification in Costa Rica

As part of an A.I.D. effort to assess the impact of its assistance in the rural electrification sector, an interdisciplinary team conducted an evaluation of a rural electrification loan in Costa Rica in 1963-64. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

Between 1965 and 1969 A.I.D. loaned \$3.3 million to the Banco Nacional de Costa Rica for purposes of electrifying, through member-owned cooperatives, three diverse areas of Costa Rica: San Carlos, San Marcos and Guanacaste. The loan was supplemented by \$818,000 in local funds and was used for construction and placement in operation of three rural electric cooperatives and a new transmission line 32 kilometers in length. The cooperatives which A.I.D. funded today encompass roughly 7 percent of the total electrification effort in Costa Rica or 23 percent of the rural electrification consumers.

It is the conclusion of the evaluation team that this A.I.D. loan to Costa Rica was wisely conceived; with a few exceptions the project goals were met. The cooperatives are all now in good financial health and the areas which they serve have demonstrated varying degrees of economic growth during the seventeen year period since the project began, some of which is attributable to electrification. The cooperatives also seem to serve the rural poor better than other available electricity distribution systems. The team believes that the project's success was enhanced by the Costa Rican environment; an abundant potential for hydro-electric power, supportive local institutions and a national orientation toward equitable development.

The evaluation team examined the impact of electrification in each of the three cooperatives sites at the home/farm level and at the community/commercial level. The team concluded that in agriculture the impact of electrification varied widely -- largely according to the type of production activity (e.g., whether growing sugar, coffee, rice, raising poultry, dairy or beef cattle). In general electricity had the greatest impact in the processing stages and less in production on the farm.

- In San Carlos, electrification has dramatically increased the profitability of several agro-industries, especially dairying.
- In San Marcos, electrification contributed to the quadrupling of coffee production. However, significant diversification of agriculture did not take place.

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In Guanacaste, a region which has witnessed a slower pace of overall growth and development, cooperative electricity is important to the population even when major economic benefits are not directly attributable to it.

At the community/commercial level, electrification was credited with generating a "rebirth" in one area (San Carlos), and generally increasing the number of small businesses, shops, tourism, as well as expanding social services, in particular educational opportunities for adults in rural areas. Prior to 1970 one of the major constraints to expanding educational opportunities for adults was the absence of electricity to provide lighting for late afternoon and evening classes. Today there are 100 night primary schools and 27 night secondary schools throughout the country. In addition, there are now 600 centers in rural areas providing literacy and some primary education to economically disadvantaged adults.

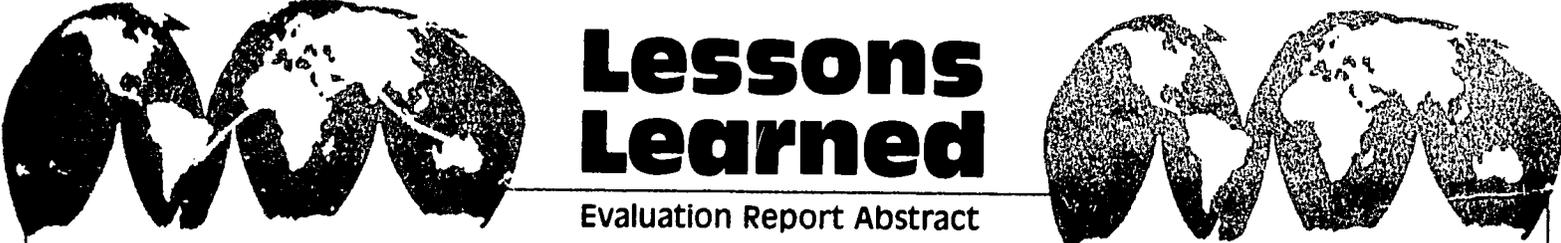
After analysing the results of electrification usage and non-usage in a 96-household survey and from observations and interviews on commercial and social usage in the project areas, the A.I.D. evaluation team drew ten key lessons:

1. the probability of significant impact by electricity on economic growth depends considerably on the setting of the project area;
2. as income goes up the ability to utilize rural electrification productively goes up which in turn further raises income;
3. rural electrification can be financially at risk until a certain degree of development is accomplished;
4. projects should be designed with relatively high contingency budget for working capital and with assured subsidies to sustain financial viability during the first years;
5. successful establishment of rural electrification cooperatives is greatly enhanced by supportive attitudes and policies on the part of national government and local institutions;
6. impact of electrification on agriculture and agro-industry can be partially predicted according to the types of production activities taking place in the area;
7. electricity can be a favored type of household energy even for the very poorest; yet,

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8. use of electric stoves to replace firewood for cooking appears to be rare;
9. if rural electrification cooperatives are expected to carry out educational or promotional programs and activities, funds to support this must be granted; and
10. electrification seems to have a neutral effect on migration patterns between urban and rural areas when taken as a singular, causal factor. But in combination with other rural development interventions it enhances the attractiveness of rural life.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 22, The Product is Progress: Rural Electrification in Costa Rica, (PN-AAJ-175) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.



Lessons Learned

Evaluation Report Abstract

Northern Nigeria Teacher Education Project

Report of a Project Impact Evaluation

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NORTHERN NIGERIA TEACHER EDUCATION PROJECT

As part of an A.I.D. effort to assess the impact of its assistance in the education sector, an interdisciplinary team conducted an evaluation of education in Northern Nigeria in 1965. The following is an abstract of the completed report which has been published in the A.I.D. Project Impact Evaluation Series.

The Northern Nigeria Teacher Education Project (NNTEP) was begun in 1965 under a University of Wisconsin contract team to improve the quality and efficiency of primary teacher training in Northern Nigeria. The Project's goal was to supply trained manpower necessary for the North's economic and social development.

Wisconsin's job was to (1) develop curricular materials and new teaching techniques, (2) encourage Teacher Training Colleges (TTCs) and education authorities to adopt and use these innovations in a professional manner, and (3) help assure project continuity by educating participant-trainees and counterparts, and by providing the Ministry of Education (MOE) of the Government of Northern Nigeria and the Institute of Education (IE) at Ahmadu Bello University in Zaria with assistance in their development.

NNTEP participant-trainees, counterparts, and students played a significant role in the development of education in Northern Nigeria. All 15 trainees returned home and currently occupy prominent leadership roles in the education sector. At least one of the two or three highest educational posts in six of the ten current Northern states is occupied by either a trainee or a counterpart.

NNTEP was tardy in producing its teaching materials. The Wisconsin tutors were not experienced in curriculum development, and their TTC work assignments left them little time to devote to this feature of their assignment. Although curriculum development efforts were delayed, the Wisconsin staff eventually produced materials in five subject areas. The contractor and the IE were able to encourage adoption, use and further development of these materials by channeling them through boards of study established for separate examination topics. These boards and the IE also helped develop a regional consensus on examinations and curriculum, a major accomplishment in light of the potential cultural and educational balkanization of the region now split into several states.

Examination pass rates indicate that quality declined over the years. With the adoption of Universal Primary Education, Nigeria emphasized quality rather than quantity, a central purpose of NNTEP. Organizational influences also affect quality. Nigerian education lacks the means to assure the adequate use of materials and techniques that will help improve quality. NNTEP ignored organizational influences on how schools operate and produce quality education.

The project also failed to impact positively on efficiency with regard to student learning and manpower utilization. NNTEP,

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however, did contribute to the development of the IE, a major educational resource and influence in Northern Nigeria. On balance, the project was a success.

NNTEP Offers AID Seven Major Lessons

1. Participant-training was highly successful because the trainees were non-university degree mid-career professionals working in an expanding sector that offered unusually good career opportunities. These factors may well have relevance in other cases.

2. Projects involving adoption and use of innovative techniques within a multi-state federal system require both a single central implementing agency and the establishment of institutional networks and mechanisms for diffusing and coordinating the work flow of these networks. A complete constraints analysis can contribute to project design and success.

3. Donor agencies and host governments can not take it for granted that curriculum reform will be accomplished in a short period of time.

4. The host government is more likely to draw on an American University contractor for continuing assistance if the university is recognized as a superior institution. Encouragement to maintain the links established under the project can help provide continuity to sustain project success. These contacts also foster positive attitudes toward America and its universities.

5. The delivery of technical assistance should be structured in a manner that minimizes dual responsibilities and multiple supervisory authorities, NNTEP also demonstrates the need to plan projects with realistic time schedules, work assignments, staff needs, and careful monitoring and evaluation.

6. AID should demonstrate to host governments that there are alternative least-cost solutions to stated policy goals. The agency lost sight of the resources required for significantly expanded education system, and it also lost sight of the overall manpower development goals of the project. Human resource development in the North was predicated on a concern with higher level manpower, not on the economic base and manpower needs of the region.

7. Participant-training is a least-cost strategy to assure long-term project continuity and institution-building.

Copies of the complete report - A.I.D. Project Impact Evaluation No. 23, Northern Nigeria Teacher Education Project, (PN-AAJ-173) may be obtained from the Editor of ARDA, S&T/DIU/DI, Bureau for Science and Technology, Agency for International Development, Washington, D.C. 20523. The Office of Evaluation welcomes comments on the report.