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AT INTERNATIONAL IN AFRICA: AN EVALUATION OF
PROJECTS IN LESOTHO, SWAZILAND, MALAWI
AND KENYA

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SECTION ONE

EXECUTIVE SUMMARY

The evaluation team which visited Africa included representatives from AID, Arthur D. Little, and AT International. The Aid representative was A. Wayne Dunlap, while the ADL representative was Dennis Wood. ATI people included Bill Pierce, the Africa/South Pacific Regional Director, as well as Operations Representatives Catherine Fort and Joyce Henderson.

A total of 16 projects were visited in 4 countries (Lesotho, Swaziland, Malawi, and Kenya.) Except for one project in Kenya which was too far away, the evaluation looked at every project being funded by ATI in the countries. This census of available projects resulted in a thorough look at ATI's efforts and the results of those efforts are documented in this evaluation report

The evaluation looked at the projects from the standpoint of a series of questions which were prepared by the Evaluation Team before departure. These questions are key to understanding the results of the evaluation. A listing of these questions are contained in Table 1, Evaluation Questions.

The data in this report is organized into Findings, Conclusions, and Recommendations. In summary, the results are as follows:

FINDINGS:

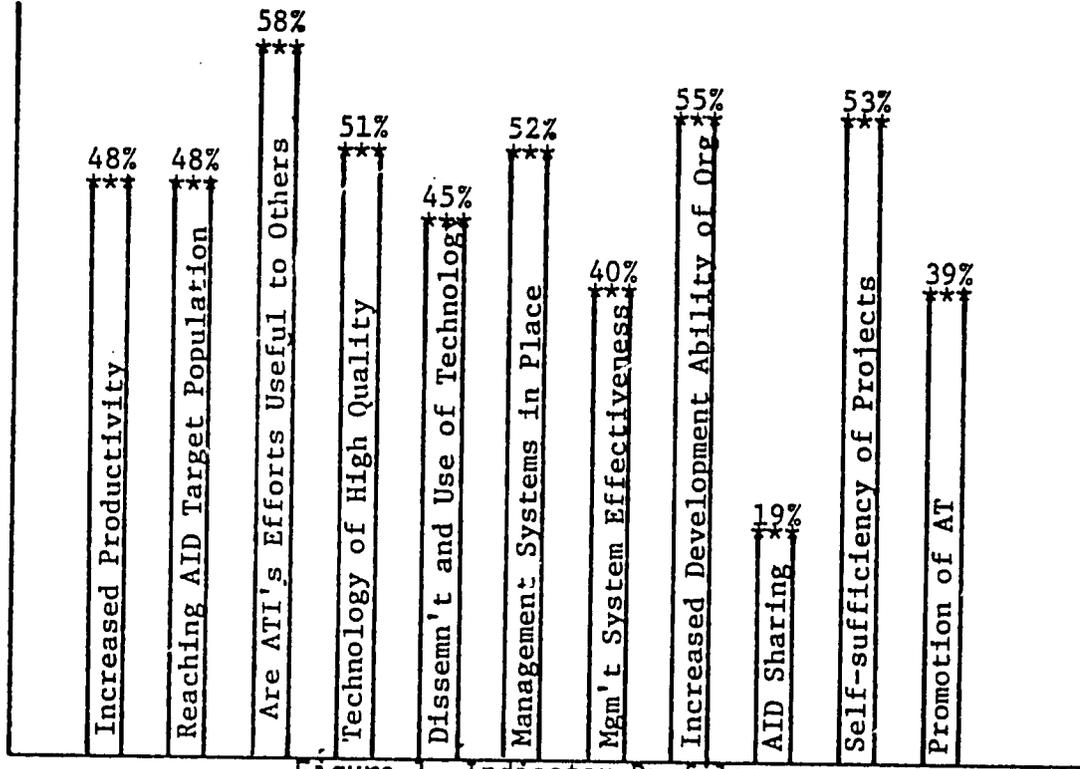


Figure 1, Indicator Profiles

Figure 1 shows the relative rankings of the findings of the African evaluation in terms of percentages. Number 3 (Usefulness) ranked highest with a 58% rating.

As the preceding Figure shows, the relative emphasis of ATI's African projects is focused on institutional building aspects. These indicators are based upon the interpretation of Figure 2, Evaluation Indicators. This important data is included in Section Three, Findings of the Evaluation. Essentially, each project was scored on a number of indicators (evidence) that the evaluation question was being satisfied. The preceding Figure is the result of that process.

CONCLUSIONS:

- o ATI is delivering services to the AID target group in the rural areas of Africa visited. These efforts are almost 100% directed to the private sector .
- o ATI's process supports indigenous ideas exclusively and involves itself in close management control and interaction during the planning process.
- o The AT dissemination process is accomplished through local institutions with ATI taking an active role as necessary. The local people feel as though they are making a contribution to the process to the dissemination efforts.
- o ATI visits their field projects on a scheduled basis and uses this time to monitor projects and take care administrative details.
- o The process used by the African team to disperse money is effective and is scheduled in the plan between ATI and their grantee.
- o ATI's definition of AT is not limited to "hard" technologies. It includes management, financial systems, information, and a wide variety of "appropriate development" approaches.
- o ATI's process involves support of individuals who can provide leadership within institutions. They support the person, not just the institution (similar to the investor who supports a management team and good product.)

- o ATI emphasizes institution building by supporting what a group of individuals have decided to do or already knows how to do.
- o ATI's sense of "appropriateness" in carrying out its work is the methodology and delivery system being supported, not the technology in that activity.
- o ATI funds and involvement generally attract other donors.
- o ATI has set up country-wide institutions in Kenya and Lesotho who either will or are already promoting AT in their countries. In Lesotho, the initial effort was replaced by a UNIDO-funded effort.
- o The Improved Rural Technology (IRT) project was discussed with mission people in the four countries visited, and the results of this project were poor in comparison to the efforts of ATI's projects (similar target population).

RECOMMENDATIONS

- o That ATI should continue to be funded by AID, but with an increased budget and on a timely basis.
- o ATI's field staffing should take into account the increased numbers of projects and attendant management of field operations.
- o ATI's and AID's mutual interests would be served by a closer working relationship. ATI has demonstrated a positive effect on the private sector and that experience contains lessons which should be shared within AID management and project people.

- 0 ATI's process of replicability of projects should be strengthened and incorporated into more of the ATI planning.
 - 0 ATI's field outreach program should be strengthened to included the experiences and operational experience of its field people more.
 - o AID should become more involved in ATI's efforts and provide a supportive environment for the private sector development efforts being funded and managed by ATI.
-

The evaluation process was lengthy and exhaustive, but did establish (at least for the African countries visited) that ATI is meeting its mandate of disseminating appropriate technology, although the definition of appropriate technology remains a source of frequent disagreement between AID and ATI people. Indeed, what the meaning is determines the direction one will take in promoting AT. ATI takes a more encompassing meaning from just "hardware". They believe that technology without institutional capacity to support its use is meaningless.

Perhaps we could listen to a wide audience who promotes AT before we make our minds up on the subject. ATI's contribution to this debate is supported by the AID evaluator's findings that technology alone (in Africa at least) cannot work without that personal dedication required by the individual who works in consonance with an institutional system. ATI works to support both, but keeps technology in mind and works to put a system in place in a country or region to be ready once the person is ready.

That approach can work and is working in Southern and East Africa.

SECTION TWO
INTRODUCTION

AT INTERNATIONAL IN AFRICA: AN EVALUATION OF
PROJECTS IN LESOTHO, SWAZILAND, MALAWI
AND KENYA

This trip report looks at the A.T. International programs and projects underway in East and Southern Africa, and describes each of the projects visited. In addition, it provides findings for each of 16 projects, based upon answers to questions which formed the basis for the evaluation. The principal questions which were addressed as part of the evaluation are contained in Table 1.

The report also contains conclusions relating to ATI's experience and accomplishments in Africa in view of the evaluation questions, and provides detail relating to ATI's technological impact as well as organizational impact, institutional impact, and policy impact. In addition, the paper looks at ATI's relations with other donors; assesses the political implications of ATI's efforts; provides AID management focus, and looks at the costs associated with providing the services delivered.

During the evaluation of ATI, the team members, consisting of A. Wayne Dunlap, representing the S&T Bureau of AID, Dennis Wood, representing Arthur D. Little Co., and ATI personnel (Africa/South Pacific Team) traveled to four countries. The four countries included Lesotho, Swaziland, Malawi, and Kenya. A total of 16 projects being sponsored by ATI were examined and are commented upon in this report. The 16 projects, representing a total expenditure of approximately \$ 648,000, are listed below:

Lesotho: Solar I Project (Thaba Tseka Mountain Development
Project)
Solar II Project (Thaba Tseka)
Micro-Hydro Project (Thaba Tseka)
Appropriate Technology Unit
(Basotho Enterprises
Development Corporation)

Swaziland: School for Appropriate Farm Technology

Malawi: Malindi Workshop (Diocese of Southern Malawi)
Lilongwe Agricultural
Development Division
Fisheries Department, Ministry
of Agriculture
and Natural Resources

Kenya: Appropriate Technology Advisory Committee
National Council of Women in
Kenya (NCWK)
Kenya Institutes of Science and
Technology
Rift Valley Institute of Science
and Technology
Bura Roofing Sheet Project
Charcoal Briquetting Project
Kenyatta University College
Seminar
ICA/Kawangware

ATI's Africa/South Pacific Team, consisting of the Operations Director, three operations staff and two support staff members, works also in West Africa and the South Pacific. In addition to the 16 projects evaluated in this report, the Africa/South Pacific Team has supported the following 20 projects to a funding level of approximately \$ 1,200,000:

- Lesotho: Thaba Khupa Intermediate Technology Unit
(not evaluated because
the project was
just starting at the
time of the field
visit)
- Kenya: Kalokol Basketry Group (not evaluated be-
cause time constraints
precluded a site
visit or meeting with
project personnel)
- Sierra Leone: Opportunities Industrialization Centre
Eastern Clinic Rural
Development, Ltd.
Swamp Rice Development
Project
Crystals Youth Club
National Training Centre
- Cameroon: APICA/Appropriate Technology Service
- Togo: SOTOPRODER Aquaculture Project
- Fiji: Rural Areas Appropriate Technology Unit
-Rural Technology Workshop
- Vanuatu: Business Opportunities Promotion Centre
Alternative Energy Options
Projects
Kristian Institute of
Technology of Weasisi

Papua New Guinea: Village Equipment Suppliers, South Pacific
Appropriate
Technology Foundation
Small Projects Fund, South
Pacific Appropriate
Technology Foundation
Sericulture Project
Brazil Alcohol Trip
Bio-conversion, Lae City
Council
Yangpela Didiman

SECTION THREE

DESCRIPTION OF PROJECTS VISITED

A total of four projects were visited in Lesotho; one in Swaziland; three in Malawi; and eight in Kenya. The projects were visited between January 12, 1982, and December 30, 1982.

LESOTHO - January 12 - January 16, 1982

1. Solar I project (Thaba Tseka Mountain Development Project)

This project was a \$27,000 project to develop and test ways of introducing solar energy into a mountainous area of Lesotho. The Thaba Tseka organization has a yearly budget of approximately \$1,000,000, with money from the Lesotho Government, \$700,000 from CIDA of Canada, and \$150,000 from Irish AID.

ATI supported a project which largely used local people for the implementation phase of a solar energy effort. The hardware included solar cookers and a wide range of solar dryers. Local people, under overall management of a Thaba Tseka organization (expatriates) undertook the design and construction of solar energy hardware. In addition, the solar project included an extension service capability to allow introduction of solar hardware into rural villages.

In this particular area of Lesotho, firewood is almost nonexistent and people have to travel substantial distances (often over five miles) to obtain adequate stocks of firewood. In one case, firewood was obtainable only by descending a deep gorge and returning.

ATI's grant had been used and a follow on grant, Solar II, was in effect.

2. Solar II project (Thaba Tseka Mountain Development Project)

This grant was a follow-on to the Solar I project and extended the technical and outreach capabilities of the Thaba Tseka organization in the construction and research for alternate energy sources. This grant totaled \$19,300.

3. Micro-hydro project (Thaba Tseka Mountain Development Project)

ATI, in this case, supported a project to install, test and survey the possibilities for replication of small scale hydro electric power in the mountainous areas of Lesotho. ATI worked through the Intermediate Technology Development Group (ITDG) in London. This group provided consultation and hardware recommendations to the Thaba Tseka organization. In addition to exploring micro-hydro technologies, ATI's grant explored alternate energy sources, including solar and wind energy. ATI's solar projects were the direct result of this initial grant to Thaba Tseka.

This grant was for \$ 8,100, with the purpose being to provide machinery fabrication and freight from the UK for the generating hardware.

The project was designed to provide electricity to a local grain mill, but the hardware has been unreliable and the ITDG people have been unresponsive in providing replacement parts to remedy the problem. As a result, the dams are built and the equipment is in place, but the system remains inoperative.

4. Appropriate Technology Unit - BEDCO

The purpose of this project was to establish an appropriate technology unit within the Basotho Enterprise Development Corporation (BEDCO) organization to generate projects for that corporation and to coordinate appropriate technology units within Lesotho. This project was one of ATI's early attempts to establish an appropriate technology unit on the Africa continent. The project was largely unsuccessful due to conflicting personalities, a conflicting mission between the appropriate technology unit and the main BEDCO organization, as well as a general lack of governmental support. However, ATI did sponsor a project add-on which provided a consultancy to replan and describe the functions of a new ATU unit to be located outside of BEDCO. As a consequence, UNIDO has offered financial and technical assistance to support this new unit.

The project allowed for the purchase of a four wheel drive vehicle for the use of the project manager of the ATU unit. With this vehicle, it was envisioned that the project manager would be able to travel throughout the country planning and implementing AT projects. Personality conflicts between the Managing Director of BEDCO and the project manager of the ATU unit, however, doomed the project to failure, and the ATU project manager left the country after completing his contract. The vehicle stayed with BEDCO, but was used during the ATI-sponsored consultancy to replan the unit.

This project resulted in the ATI closing report (the ASP report which provides the official file summary of the project - an internal evaluation report) stating that ATI should make it a point of priority to deal directly with indigenous organizations, rather than through other PVO's or networking organizations (such as was the case with BEDCO).

5. School for Appropriate Farm Technology (SAFT) - Swaziland.

This \$77,500 project was designed to provide operating capital support to an existing school operating in Swaziland. The SAFT organization is interesting because it is a private school funded from private sources, but having the Minister of Education for the country of Swaziland as its Chairman of the Board of Trustees.

The SAFT school provides an opportunity for "school-leavers" to begin an education in "appropriate farm techniques" over a fifteen month period of time.

The ATI grant provided the following:

- a. Student Bursaries. This money provided accommodations for 35 people for 20 months plus the wages of a cook and caretaker for nine months.

- b. Agricultural Hand-tool Loan Fund. This money provided for the establishment of a fund whereby students could be issued basic farming tools. The funds would be reimbursed by the students later in the course from cash cropping activities.

- c. Metalwork and Woodwork. This money allowed the curriculum to be expanded to include basic instruction in woodworking and metalworking. For this, an instructor was hired and a limited number of basic tools for the classes were procured. The salary of the instructor would be provided for a two-year period of time.

- d. Salary of an Administrative Assistant. This would pay for bookkeeping and statistical record keeping in the school for a period of two years.

- e. Housing for the Workshop Supervisor and Administrative Assistant. Two houses were built using direct-hire labor and locally available materials where possible.

- f. Transportation for Extension Officers. This provided for purchase of a motorcycle and accessory equipment as well as operating expenses for nine months.

- g. Purchase and Modification of Agricultural Equipment. This provided for purchase of farm equipment including a hammer mill, a planter, and plowing equipment.
- h. Capitalization of Student Commercial Agricultural Activities. This money allowed for the students to operate commercial plots after the initial educational period.

This school plays a rather significant role in agricultural education in Swaziland in that it is the only privately owned farm school for school-leavers. The only other comparable school is the university which produces people who work for the Agricultural Ministry after graduation, not as working farmers.

Since the inception of the project, ATI field representatives have visited SAFT regularly and are working with the principal, Mr. John Pape, to develop future operating plans for the school.

6. Southern Diocese of Malawi (Malindi Workshop)

This organization, headed by a Bishop, operates a machine shop and light manufacturing facility as a part of their program. The workshop is close to Lake Malawi approximately half way between Blantyre and Lilongwe, and is inaccessible during the rainy season due to road conditions. We were unable to visit the workshop, but talked with the Bishop and the workshop staff at the Bishop's residence.

ATI sponsorship of this activity, a grant in the amount of \$10,000, provided operating capital to purchase raw materials to manufacture workshop products and to improve the management by establishing a viable accounting system. Products manufactured by the workshop include wheelchairs and other equipment used by polio victims and other disabled people in Malawi.

The group did purchase raw materials to build wheelchairs, but marketing problems and a lack of business orientation by the Dioses contributed to a lack of cash flow for the operation.

ATI at this time is working with the workshop staff to continue strengthening the workshop's management system and to develop further marketing plans for the operation.

7. Fisheries Department, Ministry of Agriculture and Natural Resources.

This \$ 74,000 project is aimed at providing ferro-cement boats for the northern area of Lake Malawi. The Fisheries Department wishes to employ consultants from the U.K. to help establish a ferro-cement boat building facility at Karonga (at the northern end of Lake Malawi). The consultants would design and build six boats, three each of two specific designs. Two of these boats would be fitted with standard outboard motors, while the other four will be fitted with inboard diesels. All six boats would be rigged for sailing as an energy saving device. This project will attempt to reintroduce the practice of sailing on Lake Malawi, and the boats will be especially designed to suit the rougher, deep water fishing which is possible at the northern end of the lake.

At the end of the project, a fisheries officer, one supervisor, and seven artisans will be skilled in ferro-cement boat building, and the molds and equipment used in the initial construction efforts will have been tested. In addition, selected local fishermen will be trained to operate the six boats built, and the boats will be offered to local people for purchase.

As part of this project, ATI insisted upon the National Bank of Malawi's involvement in the project with the specific purpose of providing loan funds to rural fishermen at the end of the project.

The project is scheduled to take 12 months to complete, at which time the boats will be in the water and operational.

8. Lilongwe Agricultural Development Division (LADD)

LADD is one of four divisions within Malawi under the Ministry of Agriculture National Rural Development program. This division consists of five discrete project areas: Lilongwe Land Development Program (LLDP), Lilongwe Northeast, Dezda Hills, Thiwi/Lifidzi, and Ntcheu Rural Development Projects.

LLDP is now twelve years old and is in its final year of World Bank funding. The other four projects are in the early stages of development, but what has been achieved at LLDP is to be replicated in these areas, using the LLDP headquarters and structure as a starting point.

LLDP has been primarily an agricultural program undertaken in a broad sense. It sets up agricultural extension services, provides training, credit and land husbandry. In addition, it has been responsible for land allocation. It has built 40 unit service centers consisting of local markets and trading points, facilities for health, education, and other government services. In addition, it has provided the necessary roads and railways to and between these centers.

LLDP has its own construction teams, evaluation teams, and both residential and day training centers have been established throughout the area. It has carried out a survey of craftsmen in the area, and has completed surveying the demand and supply of manufacturing goods.

Besides being a development project which involves virtually all ministries of the government, the projects relationships to the community can be seen at many levels. Its officers provide first hand agricultural advice and training to farmers, employ local people in building and town planning, and carry out

building work on behalf of ministries located in Lilongwe. Its evaluation team constantly monitors the progress of the project, and is continuing a survey of rural craftsmen in the area. It takes graduates from the Salima Rural Trade School and sets them up with a work place in its unit's service centers.

The project sponsored by ATI allowed LADD, through LLDP, to use its established infrastructure of administrative training capabilities to promote and establish rural industries in the region. These industries would provide improved practices, improved products, and new products. Projects which have been established include roofing tiles made from clay, as well as support to local carpentry operations. Projects to be instituted may include standardization of brick making, improved charcoal manufacture, and cottage manufacture of such products as glue, soap, hand tools and egg cartons. The program includes basic business and bookkeeping training as well as the establishment of credit fund for existing craftsmen.

Agricultural improvements in the region in terms both of agricultural output and employment are reaching an expected peak. The project supported the thesis that increased emphasis for rural industries would both create employment and provide needed goods and services to the residents of the region. In addition, the introduction of more efficient wood burning stoves and charcoal retorts will help to alleviate the wood fuel shortage; brick and tile making improvements will result in better housing and reduce dependence on imported materials and skills. Finally, the provision of bookkeeping and business skills to the rural craftsmen will help them to be better businessmen and will improve their planning and productivity. Each of the projects is being viewed as an income generating industry--thereby increasing employment and earnings in the rural areas.

No funds were provided for this project by organizations other than ATI. The total funding was \$40,000.

9. Appropriate Technology Advisory Committee (ATAC)--Kenya

ATAC is a committee set up in close collaboration with ATI, and is a Kenya-wide organization to promote appropriate technology of many types throughout the country. Specifically, ATAC will address the following terms of reference:

- a. To identify, select, and promote the commercialization of the project activities, chiefly in the area of energy and rural industries. ATAC will act as a coordinator for these projects, both on-going and potential. ATI will act as technical advisor to the committee, and project selection will take place by mutual agreement.
- b. To provide a point of reference for people in Kenya with knowledge of technologies involved in meeting energy needs and promotion of rural industry. ATAC will provide interaction between such people, and call upon them when in need of technical advice or assistance in project implementation or assessment.
- c. To provide a source of information for government departments, private groups, or industry interested in small scale appropriate technologies. ATAC will actively demonstrate the viability of this approach through developed projects.
- d. To consult with ATI on its on-going projects and future programs in Kenya.

The grant from ATI, totaling \$93,300 , is intended to cover ATAC's operating expenses for two years. This includes the salaries of a Project Manager and small support staff, transportation, and general administrative expenses.

In the opinion of the founders of ATAC and the staff of ATI, there was both a need for, and an opportunity for, a new organization to explore and promote the strategies of appropriate technology as an integral part of Kenya's overall development efforts. No such organization existed to serve this function. As a result, a non-governmental "society" was set up to devise an appropriate vehicle for these tasks in a country where the private sector offers so many development opportunities.

A government minister and assistant minister, both Members of Parliament, plus the managing director of Kenya's Telecommunications Corporation are among the committees' founders. This insures high level government representation and critical focus in the early stages of formation of ATAC. Since the objective of the committee is to encourage increased production from locally available resources, this high level government support will help to insure that policies are promulgated which encourage and support private sector development.

The committee's intent is to establish itself as an interpreter/advisor for government, outside funding sources, and the private sector without becoming identified as an agent of any one group.

ATAC has already started to advertise throughout Kenya in the newspapers and in other media for people with ideas meeting the criteria described above. At the time the evaluation team left Kenya, over 40 project ideas had been submitted to ATAC and 4 had received Committee approval for the Project to seek funding.

10. National Council on Women of Kenya (NCWK)

This project, approved in November of 1979, was for an initial grant of \$50,000. Its purpose was to strengthen NCWK as an institution by providing a small projects fund which would be used by NCWK to promote member groups in income generating projects in rural areas. Before ATI's involvement, NCWK was

Although the original concept was seemingly valid, a variety of factors caused this project to fail. The group became politicized through a change in the board of directors and the original focus was lost. As a result, ATI stopped providing funds to NCWK, after an initial disbursement of \$ 18,000.

11. Kenya Institutes of Science and Technology

Eleven institutes of science and technology exist within Kenya providing a wide range of vocational training in masonry, carpentry, mechanical engineering, agricultural engineering, garment making, food technology, secretarial and other related skills. The institutes were created through provincial and district level voluntary action as a means of establishing a local vocational training center. They are financed mainly by community fund-raising, and are recognized by government as official training places and receive some financial assistance in the form of salary support for teachers from the Ministry of Education. Because they are mainly self-financing, they can offer tailor-made training programs not normally found in more traditional academic government schools.

These institutes, however, have suffered from a lack of effective accounting systems. To overcome this situation, ATI sponsored the creation of an accounting system with related training for appropriate school officials. Price-Waterhouse in Nairobi was retained by ATI to develop this accounting system and to tailor its implementation at several of the larger institutes.

ATI was interested because the provision of a functional accounting system to the institutes would represent a logical step in ATI's support of innovative vocational training activities in Kenya. In addition, the institutes management ability to deliver vocational training would be strengthened through increased awareness of financial expenditures and income relevant to each institute. Thirdly, once an accounting system was integrated into the school, a training course could be offered to start training students in accounting principles as they relate to a Kenya institution.

Perhaps most importantly, though, was the school's decision to involve students in producing data for materials costing, inventory control, profit and loss statements, and commercial operations planning. The objective was to

provide the students with practical training in business skills by making their training workshops operate to the extent possible as commercial workshops.

Lastly, Kenya suffers a critical shortage of accountants and financial managers. Over the years, a number of competent administrators will be developed who have familiarity with a professionally designed system and the effects of this exposure should be long lasting.

12. The RIFT Valley Institute of Science and Technology (RVIST)

This institute is one of the eleven Kenya institutes of science and technology and was chosen by ATI to receive grant support because of the activities of its principal, Dr. K. Koech. In addition to being the principal of RVIST, Dr. Koech heads up the principal's committee for the eleven institutes of science and technology.

ATI's financial support of RVIST allowed for purchase of training materials to be used in classes. Purchases included masonry, carpentry, and textile materials, as well as technical assistance for implementation of the financial management program described in Number 11, above.

One of the principal constraints for the regional institutes of science and technology is provision of operating funds. ATI funds alleviated this handicap and helped in the formulation of a strategy to provide continuing income to the schools. With the provision of the financial accounting system, each of the training units will be turned into a quasi manufacturing unit and will sell goods produced in the school to the local community. The income thus generated will provide a source of operating funds for the school.

13. Bura Roofing Sheet Project.

Below the level of the institutes of science and technology (described in the two previous entries above) are the village poly-technics. These are small, relatively informal schools which provide vocational training to rural people

in Kenya. Government support is confined to partial payment of teacher's salaries. Other support comes from school fees and from income generating projects sponsored by the centers.

The Bura Roofing Sheets project provided \$3,000 for the purchase of materials, forms, and frames to produce fibre-reinforced roofing sheets. The process, developed by Kenyatta University College, involves mixing chopped sisal fibers with local cement and adding sisal strips as reinforcing lattice.

The desire for an economic alternative to corrugated iron roofing has been well established in Kenya and throughout other parts of the world. This project was an attempt to involve rural aritsans in the manufacture of a suitable substitute using locally produced raw materials. The project was intended to be commercial and to allow the output from the project to be sold for commercial profit.

14. Charcoal Briquetting Consultantancy

A consultant identified by ATI was provided to Kilifi Plantations to explore the production of charcoal from scrub brush in the rural areas. Traditionally, charcoal has been produced from large hardwood trees but population increases has resulted in substantial deforestation throughout the country. Since charcoal provides a major means of energy to rural people, a substitute must be found and quickly. The support by ATI was an attempt at exploring a technology which could have wide-spread use should it become feasible.

A total of approximately \$9,000 was provided to explore the technology. Technological difficulties still exist (involving means of compressing charcoal particals into a larger briquette) which Mr. Wilson is still examining.

15. Kenyatta University College

Dr. Digby Swift, director of the AT Centre at the College , is pushing an effort in East and Southern Africa to expand the use of alternate building materials in the regions. The ATI grant of \$6,400 was used to sponsor a

seminar for participants from a number of countries. The money provided by ATI was largely used for travel expenses to allow the participants to meet together.

Dr. Swift's projects involved the sisal-reinforced concrete roofing sheets described previously as well as cement roofing tiles and other alternate means of construction. The ATI grant allowed for extensive interchange of ideas and for a beginning at standardization of manufacturing techniques.

16. ICA/Kawangware

The ICA organization operates in many places in the world to provide a variety of self-help projects. In the Kawangware region of Nairobi, the ICA project was designed to provide farming skills and access to markets for school-leavers. However, the implementation aspect of this project (ICA's responsibility) caused the project to fail and ATI terminated funding. ATI attempted to intervene in the management of the project to improve the planning and implementation, but was unsuccessful. A total of \$58,000 was proposed for the project, but was only partially disbursed .

SECTION FOUR
FINDINGS OF THE EVALUATION

This section presents the findings of the evaluation as a function of the questions which were defined in Table No. 1. To help understand the extent of the ATI projects, Figure 2 is presented showing the key questions addressed, together with indicators showing how each project scored. This section of the report will deal principally with interpretations of Figure 1 and discussions relating to specific points shown.

A. INCREASED PRODUCTIVITY

The first order question which was addressed by this evaluation was whether ATI was a cost effective vehicle for assistance. In examining cost effectiveness, the evaluation looked at:

- (1) whether ATI's projects sufficiently increased productivity such that economic gains justified the use of ATI resources;
- (2) whether or not the AID target population was reached;
- (3) whether ATI's efforts were efficient compared to other aid vehicles in increasing the productivity of that population; and
- (4) whether or not ATI's projects developed experience and information that could be used by other people in the field.

Looking at Figure 2, a number of indicators are defined relating to the first part of the question, namely increased productivity. These indicators include:

- * Less inputs (money, material, manpower)
- * Increased outputs
- * Replicability potential
- * New resources identified
- * Savings in commodities
- * Reuse of resources

In terms of increased productivity, based upon the indicators listed above, the evaluation found the following:

<u>Number of Projects</u> <u>AND PERCENTAGE</u>	<u>INDICATOR</u>	
Less inputs	6	(37.5%)
Increased outputs	10	(62.5%)
Replicability potential	7	(43.8%)
New resources identified	7	(43.8%)
Savings in commodities	9	(56.2%)
Reuse of resources	6	(37.5%)

ATI EVALUATION: AFRICA

CRITERIA FOR EVALUATION			PRIORITY (X-Yes L-Local)															SCORING	COMMENTS	
ITEM NUMBER	KEY ASPECT	INDICATORS (EVIDENCE)	SOLAR 1	SOLAR 11	MICROHYDRO	ATU/BLEDCO	SAFT	DIOCESE	FISHERIES	LAOD	ATAK	NGW	KITHA	RWIST	BURA ROOFING	KENYATTA UNIV	RICHARD WILSON			ICA/YAMUNGUARE
1	Increased Productivity	-- Less Inputs (money, material, manpower)	X	X	X		X		X				X		X				6(37.5%)	
		-- Increased Outputs	X	X	X		X		X	X			X		X				10(62.5%)	
		-- Replicability	X	X	X		X		X					X		X	X		7(43.8%)	
		-- New Resources Identified	X	X	X		X		X			X		X		X	X		7(43.8%)	
		-- Savings in Commodities	X	X	X		X		X	X				X		X	X		9(56.2%)	
		-- Reuse of Resources	X	X	X		X		X	X				X		X	X		6(37.5%)	
	Reaches the AID Target Population	-- Poor Increased Income	X	X			X		X	X	X					X			7(43.8%)	
		-- Time Savings for Poor	X	X	X					X	X					X			5(31.2%)	
		-- Better Basic Needs	X	X	X		X		X	X	X					X	X	X	10(62.5%)	
		-- Increased Education Levels	X	X			X		X	X	X					X	X	X	9(56.2%)	
	2	Is the Technology of High Quality	-- Do Other Aid Vehicles Reach the Group?	X	X			X		X	X	X		X		X				8(50%)
			-- Increased Productivity Over Existing Means	X	X	X		X		X	X				X		X	X		9(56.2%)
			-- Stated Preference Over Other Means	X	X	X		X		X	X	X			X		X			9(56.2%)
			-- New Methods Demonstrated	X	X	X		X		X	X	X			X		X	X	X	11(68.8%)
-- Increased Enthusiasm by those involved			X	X	X		X		X	X	X			X		X			9(56.2%)	
-- Familiarity with Details			X	X			X		X	X	X			X		X			7(43.8%)	
-- Defend Decision to Adopt the Method			X	X	X		X		X	X	X			X		X			10(62.5%)	
-- Independent, Outside Verification of Methods and Backup Material			X	X	X				X		X			X		X		X	7(43.8%)	
-- Higher Standards than Previously Held			X	X	X		X		X	X	X			X		X				9(56.2%)
-- Better Quality Output			X	X	X		X		X	X	X			X		X				7(43.8%)
-- New Product or Service			X	X	X		X		X	X	X			X		X				9(56.2%)
-- Increased Demand for Service or Product			X	X	X		X		X	X	X			X		X	X	X		9(56.2%)
-- Is Kind of Technology Used a Central Issue in Project			X	X	X				X		X			X		X	X	X		7(43.8%)
-- Are New Tech Ideas being Issued or Considered by Local or ATI?			X	X	X		X		X	X	X			X		X	X	X		8(50%)
-- Is ATI a Source of Tech Ideas for Locals or of Adaptation of Technology?	L	L	L		L		L	L	L	L			ATI		ATI	L	L	11(68.8%)		
-- Is Existing Technology being Adapted to Meet Critical Needs?	X	X	X		X		X	X	X			X		X	X	X	X	12(75.0%)		

ATI is strictly reactive in its approach and shows a great discipline in this approach.

Figure 2 Evaluation Indicators and Scoring (6 pages)

ATI EVALUATION: AFRICA

MEMBER	CRITERIA FOR EVALUATION		PRIORITY (X-Yes L-Local)															SCORING	COMMENTS										
	KEY ASPECT	INDICATORS (EVIDENCE)	SOLAR I	SOLAR II	MICROHYDRO	ATU/BIEDCO	SALT	DIOCESE	FISHERIES	LADD	ATAC	MCW	KITHIA	RVIST	BURA ROOFING	KENYATTA UNIV	RICHARD WILSON			ICA/KALANGUARE									
	Is Technology of High Quality	-- Is ATI Focusing on Impact of Technology in Projects on Productivity and Income - i. e., Will Technology Used Increase Productivity and Income above What is Used in the Field at Present?	\$27K	19.3K	8.1K	10.6K	77.5K	10K	74K	40K	93.3K	50K	76.5K	85K	3K	6.4K	9K	5PK	6(37.5%)	ATI approach is to stimulate local ownership of Ideas and to act as a catalyst with its sub-grantee organizations.									
		-- Will ATI Funding Produce Greater Change in Productivity and Income than Other Funding Institutions?																	-0-		Other funding institutions have not worked with ATI's projects.								
	Has Technology been Disseminated and Used	-- Manuals and Written Instructions	X	X															6(37.5%)	Other funding institutions have not worked with ATI's projects.									
		-- Networks Established/Planned			X		X	X	X	X	X	X	X		X	X						9(56.2%)	Other funding institutions have not worked with ATI's projects.						
		-- Increase in Staff					X		X	X	X	X										6(37.5%)		Other funding institutions have not worked with ATI's projects.					
		-- Extension Services on Product, Method, or Process	X	X						X	X		X									6(37.5%)			Other funding institutions have not worked with ATI's projects.				
		-- Increased Demand for Outputs					X	X	X	X	X		X			X	X					8(50.0%)				Other funding institutions have not worked with ATI's projects.			
		-- Evidence of Advertising of Product, Method, or Process	X	X			X				X	X			X	X						7(43.8%)					Other funding institutions have not worked with ATI's projects.		
		-- Training Courses	X	X			X						X			X						6(37.5%)						Other funding institutions have not worked with ATI's projects.	
		-- Involvement of Outside Groups (Networking)	X	X	X		X				X	X	X		X	X						10(62.5%)							Other funding institutions have not worked with ATI's projects.
		-- Other Funding Agencies Inquiring	X	X			X						X									5(31.2%)							
	Management Systems to Follow-up Technology Use and Control	-- Organizational Lines of Authority (Chart)	X	X	X		X	X	X	X		X	X		X				10(62.5%)		Other funding institutions have not worked with ATI's projects.								
		-- Formal Meetings	X	X	X		X		X	X	X		X	X		X				10(62.5%)		Other funding institutions have not worked with ATI's projects.							
		-- Accounting System	X	X	X		X						X	X						6(37.5%)			Other funding institutions have not worked with ATI's projects.						

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ATI EVALUATION: AFRICA

CRITERIA FOR EVALUATION			PRIORITY (X-Yes L-Local)															SCORING	COMMENTS	
ITEM NUMBER	KEY ASPECT	INDICATORS (EVIDENCE)	SOLAR I	SOLAR II	MICROHYDRO	ATU/BIEDCO	SAFT	DIOCESE	FISHERIES	LADD	ATAC	NCW	KITVA	RVIST	BURA ROOFING	KENYATTA UNIV	RICHARD WILSON			ICA/KAUNGARE
2	Management Systems to Follow-up Technology Use and Control	-- Systematic Procedures Written Down					X		X		X		X	X					5(31.2%)	
		-- Stated Goals and Objectives	X	X	X		X	X	X	X	X		X	X		X				12(58.8%)
		-- Knowledge of Weaknesses	X	X	X		X	X	X		X	X		X	X					9(56.2%)
		-- Realistic Assessment of Strengths			X		X		X		X			X	X					6(37.5%)
	Are Management Systems Effective	-- Has Change in Output Occurred Since Start?	X	X			X			X	X			X	X		X			8(50.0%)
		-- Conflict in Management Over Issues of Substance					X			X				X						3(18.8%)
		-- Questions to ATI	X	X	X						X			X	X					6(37.5%)
		-- Extension Services	X	X						X	X			X			X			6(37.5%)
		-- Feedback from Low Income People					X			X		X				X				4(25.0%)

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ATI EVALUATION: AFRICA

CRITERIA FOR EVALUATION			PRIORITY (X-Yes L-Local)														SCORING	COMMENTS				
ITEM NUMBER	KEY ASPECT	INDICATORS (EVIDENCE)	SOLAR 1	SOLAR 11	MICROHYDRO	ATU/BIEDCO	SAFT	DIOCESE	FISHERIES	LADD	ATM	NCW	KITWA	RVIST	BURA ROOFING	KENYATA UNIV			RICHARD WILSON	JCA/KAMUKUARE		
6	Promoting "Appropriate Technology"	-- Knowledge of Local Situations by ATI	\$27K	19.3K	8.1K	10.6K	77.5K	10K	74K	40K	93.3K	50K	76.5K	85K	3K	6.4K	9K	58K	16(100%)			
		-- Incoming Correspondence to ATI on Technical, AI Topics (questions)	X	X																	2(12.5%)	
		-- Demand for Funds for "Appropriate Development" Activities					X			X		X		X		X	X	X			7(43.8%)	

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Overall, increased productivity was shown in 47% of the projects surveyed. The 47% represents a weighted average of all possible combinations of indicators for each of the categories. It should be noted that not all projects have been completed and many are still in progress. In terms of increased productivity, some of the indicators were scored if the purpose of the project included these characteristics as well as direct field interview experience and interviews with recipients.

B. REACHING AID TARGET POPULATION

The second part of the cost effectiveness question considered was whether or not ATI's projects reached the AID target population (the rural poor) and in what manner. The indicators for determining whether or not the target population was reached included the following:

- * Income increased for the poor
- * Time savings for the poor
- * Better basic needs provided for the poor
- * Increased educational levels for the poor

Again, most of the projects are still underway and the project was scored positive if a part of the project objective included the indicator as well as determining whether or not the poor were actually being reached. The projects scored as follows:

<u>Number of Projects</u> <u>AND PERCENTAGE</u>	<u>INDICATOR</u>	
Poor increased income	7	(43.8%)
Time savings for the poor	5	(31.2%)
Better basic needs	10	(62.5%)
Increased educational levels	9	(56.2%)

The overall weighted average, based upon the total possible number of indicators divided by the number of projects, was 48% (positive contribution for reaching the AID target population). A particular note in this category, however, is that 62.5% of the projects had either as their aim or were in fact providing better basic needs to the poor. The chart below gives an idea of how basic needs were supplied by each of the ten projects which scored positive.

<u>PROJECT</u>	<u>BASIC NEEDS PROVISION</u>
1. Solar I Better cooking method to save energy	
2. Solar II Better cooking method to save energy	
3. Micro-hydro	To provide electricity for grinding of maize
4 SAFT practical educational (including business) skills and farming techniques to allow private sector farming.	
5. Fisheries (Malawi)	A better means for fishing and provision of alternate energy source
6. LADD Field education and business practices with increased income	
7. ATAC Improved cooking technology	
8. Bura Roofing	Lower cost roofing and building materials

- | | |
|--------------------------------|---|
| 9. Kenyatta University | Improved methods of rural building techniques |
| 10. Richard Wilson Consultancy | Alternate energy sources for cooking |

As you can see, these ATI sponsored activities provide a service which directly reaches the rural poor and in some ways provides better basic needs than are now being provided by governments and by other donor agencies involved in those countries.

C. ARE ATI'S EFFORTS DEVELOPING EXPERIENCE AND INFORMATION USEFUL TO OTHERS?

This portion of the evaluation looked at whether ATI's experiences could be used by other people, including potential donor agencies, networking organizations, as well as by the rural poor themselves to help increase productivity and impact on the AID target population.

This aspect of the evaluation was looked at in terms of the following indicators:

- * Do other aid vehicles reach the target group?
- * Increase productivity over existing means
- * Stated preference by the rural poor for the ATI method over other methods
- * New methods demonstrated by the ATI-sponsored project

One of the principal factors that was found in looking at the ATI projects in East and Southern Africa was that other donor agencies were not generally involved in ATI's projects. There were exceptions to this, but these exceptions were only in those cases where ATI chose to participate in an ongoing project which was being previously sponsored by other organizations. In all other cases, the recipients of ATI grant funds stated that other donor organizations either were not involved or had expressly declined to be involved.

The projects evaluated scored against this INDICATORS as follows:

<u>Number of Projects AND PERCENTAGE</u>	<u>INDICATOR</u>
Do other aid vehicles reach the group? 8	(50%)
Increased productivity 9	(56.2%)
Stated preference over other means 9	(56.2%)
New methods demonstrated 11	(68.8%)

The overall weighted average for all possible indicator combinations is 58% (indicating the usefulness of ATI's experience to other groups in increasing productivity of the AID target population.)

The new methods indicator (a total of 11 out of 16 projects) consisted of new methods involving technology of some type. It either included a hard technology such as a solar cooking unit or a "soft technology" such as a management system or a budgetary system.

D. TECHNOLOGY OF HIGH QUALITY?

The second ranking question which was addressed by the evaluation concerned the technology of ATI's grantee organizations. The evaluation addressed the question of whether or not the technology was generally of high quality and what is being done with the technology that has been examined. Items D through F examine this second order question and look at these issues in terms of various indicators which are judged to be necessary and sufficient conditions to satisfy the evaluation question.

The indicators for the quality of technology are as follows:

- * Increased enthusiasm by those involved with the project
- * Familiarity with details of the technology by project personnel
- * Project personnel defending the decision to adopt the method employed
- * Independent, outside verification of methods and backup material

- * The technology appears to have higher standards than those previously held.
- * The output as a result of using the technology is of better quality than previous
- * A new product or services provided
- * The product or service is experiencing increased demand because of the technology employed.

As Figure 1 shows, the ATI projects were rated as follows:

<u>Number of Projects AND PERCENTAGE</u>	<u>INDICATOR</u>	
Increased enthusiasm 9 (56.2%)		
Familiarity with details	7	(43.8%)
Defend decision	10	(62.5%)
Independent verification	7	(43.8%)
Higher standards	9	(56.2%)
Better quality outputs	7	(43.8%)
New product 9 (56.2%)		
Increased demands	7	(43.8%)

Overall, the weighted average was 51% of the possible combinations showed that the technology was, in fact, of high quality.

A separate set of indicators was used to look at the issue of quality level of the technology, but in a different light. These questions, together with their scores were as follows:

<u>Number of Projects</u> <u>AND PERCENTAGE</u>	<u>INDICATOR</u>
1. Is the kind of technology used a central issue in the project? 8 (50%)	
2. Are new technological ideas being identified or considered by ATI? 1 (6.2%)	
3. Are new technological ideas being identified or considered by local people? 10 (62.5%)	
4. Is existing technology being adapted to meet critical needs? 12 (75%)	
5. Is ATI focusing on impact of technology and projects on productivity and income - i.e., will technology used increase productivity and income above what is being used in the field at present? 6 (37.5%)	
6. Will ATI funding produce greater change in productivity and income than other funding institutions? 0 (0%)	

Looking at the quality of technology in light of questions addressed above gives a slightly different approach to the more hard technology questions answered in the first set of indicators.

Perhaps one of the most interesting aspects uncovered by this evaluation was the fact that ATI funds attract other institutions. This happened in the case of the SAFT organization in Swaziland, the Malindi Workshop in Malawi, the ATAC organization in Kenya, the RVIST and KITHA projects in Kenya, as well as the Kenvatta University project

But the most interesting point is the finding that, absent ATI's funding, the funding of other donors would probably have been just as successful in promoting increased productivity. ATI, through its approach of using indigenous people for project development, does not dictate terms or technologies to be employed. Rather, ATI acts as a catalyst and a facilitator for the projects being supported. This is substantiated by the finding that ten projects were using technologies which were identified by local people.

Overall, by using this approach, the question of the technology being of high quality scores positive on 38% of the possible combinations. This is an important factor to note in that local institutions who deal in technology dissemination must make the decisions as to which technologies can be disseminated and used by local people --- therefore the judgement as to which technologies are of high quality is a subjective call at best.

The 38% reflects more ATI's field methodology of requiring the local institution to define their own programs. By this, it is meant that ATI is responsive to its clients the vast majority of the time, as opposed to directing their efforts. It is necessary to clear up the notion of "responsive versus directive" when applied to field situations. ATI is directive when engaged in project planning with field clients. They are responsive when negotiating with clients for ideas or projects to support. This distinction is important because it is the source of considerable misunderstanding within AID. This accounts for the relatively low showing (38%) of the total population of indicators for the discussion above.

E. DISSEMINATION AND USE OF TECHNOLOGY

The appropriate technologies which have been explored by ATI in Africa include the hard technologies such as solar energy as well as soft technologies such as management and accounting systems. The approach employed by ATI Operations Representatives is to utilize the dissemination network of local organizations (ATU related) to carry out the function of providing technological information to local groups. In addition, the evaluation found many instances where information was supplied directly from ATI/Washington to field units.

In the case of hard technologies, the ATI field staff feels that, often times, expatriate people must be involved if the technology is to have the highest level of success, whereas the softer technologies do not require expatriate support as often.

The projects examined were ranked in the manner discussed previously regarding whether the technology had been disseminated and used. The following indicators and incidents of occurrence were noted during the evaluation:

<u>Number of Projects AND PERCENTAGE</u>		<u>INDICATOR</u>
1. Manuals and written instructions	6	(37.5%)
2. Networks established or planned	9	(56.2%)
3. Increased in staff of supported institution	6	(37.5%)
4. Extension services in place on product, method, or process	6	(37.5%)
5. Increased demand for outputs	8	(50%)
6. Evidence of advertising product, method, or process	7	(43.8%)
7. Training courses established	6	(37.5%)
8. Involvement of outside groups (networking)	10	(62.5%)
9. Other funding agencies inquiring to local institution	5	(31.2%)

When looking at the total population of indicators which could have been scored, 45% of the projects show positive in terms of the technology being disseminated and used.

F. MANAGEMENT SYSTEMS TO FOLLOW-UP TECHNOLOGY USE AND CONTROL

ATI's sponsorships of individuals and institutions in Eastern Africa perhaps has its acid test in the ability to follow up projects and to evaluate and

continually upgrade the technology wherever possible. The ATI evaluation on this topic looked at certain management strengths on behalf of the local organizations that would indicate their ability to follow-up technologies and correct problems as they were uncovered. These indicators and scoring were as follows:

<u>Number of Projects</u> <u>AND PERCENTAGE</u>		<u>INDICATOR</u>
1. Organizational lines of authority	10	(62.5%)
2. Formal meetings scheduled by the organizations	10	(62.5%)
3. Accounting systems in place	6	(37.5%)
4. Systematic procedures documented	5	(31.2%)
5. Stated goals and objectives	11	(68.8%)
6. Institutional knowledge of weaknesses	9	(56.2%)
7. Realistic assessment of strengths by the local institution	6	(37.5%)

Overall, the projects surveyed showed an overall rating of 52%, based upon the total number of indicators which could have been ranked (based upon 16 total projects - 13 of which are either still active or completed.).

G. EFFECTIVENESS OF MANAGEMENT SYSTEMS

The effectiveness of a management system is generally judged by its ability to influence the expected output. In the case of the East Africa projects, the ATI projects were evaluated again with indicators and each project was

<u>Number of Projects AND PERCENTAGE</u>		<u>INDICATOR</u>
1. Has change in output occurred since start? 8 (50%)		
2. Have conflicts within the management occurred over issues of substance	3	(18.8%)
3. Questions to ATI	6	(37.5%)
4. Extension services provided	6	(37.5%)
5. Feedback directly from low-income people to the local organization	4	(25%)

The categories selected above are somewhat subjective in that they take into account changes in output as well as management competence within the local organization. When supporting local organizations in Africa, they are subject to frequent changes in personnel (such as expatriates deciding to leave the country) - thus potentially impacting on management system effectiveness.

In one of the critical items, that of whether a change in output has occurred, projects show that 50% had indeed experienced positive changes in outputs.

The topic of conflict in management over issues of substance assumes active management and an action-oriented program which is not always the case. However, in three of ATI's more notable projects, that of SAFT in Swaziland, the Fisheries project in Malawi, and the KITHA organization in Kenya, there were instances of conflict within the management over issues in substance and these organizations are among the most effective that have been supported by ATI in Africa. In short, ATI refers to the people in those instances where the institutions were strong enough to have more than one strong leader.

Overall, the projects rated 34% in terms of the universe of possible indicators which could have been scored. If small projects not intended to have a specific management follow-up were excluded from this survey, the total would raise to 40% in terms of management effectiveness and follow-up.

H. INCREASED ABILITY OF ORGANIZATIONS TO CONTRIBUTE TO DEVELOPMENT

ATI's major function under the 1979 grant was "to help increase abilities of organizations to contribute to development." In this context, ATI has supported local organizations and local people in efforts to devise their own development strategies and projects. ATI's principal contribution in this regard has been to act as a funder of other people's ideas and to act as a catalyst in putting those ideas to practice.

This particular portion of the evaluation is crucial if ATI's effectiveness (or possible ineffectiveness) relating to institution-building is to be judged accurately. Therefore, a number of indicators were defined and looked at as part of the evaluation. The indicators observed were as follows:

<u>Number of Projects AND PERCENTAGE</u>	<u>INDICATOR</u>
1. Has mangement of local organizations strengthened?	7 (43.8%)
2. Organizational charts defined for local institutions	10 (62.5%)
3. Statements of goals and objectives	11 (68.8%)
4. Extension capabilities by local organizations	6 (37.5%)
5. Scheduled meetings	10 (62.5%)
6. Networking by the local institution	

7. Outside donor interest in local organization	5	(31.2%)
8. Funds scheduled from other organizations to the local institution being supported by ATI	4	(25%)
9. Project planning criteria defined	8	(50%)
10. Planning schedules established	9	(56.2%)
11. Budgets established for the institution	10	(62.5%)
12. Budgetary controls in place	7	(43.8%)
13. Paid full time staff	12	(75%)
14. Outside experts involved with locals in training	14	(87.5%)
15. Local peoples skills increased	11	(68.8%)

Overall, the projects showed that 55% of all indicators which could have been scored were scored positive in terms of ATI's increasing the ability of organizations to contribute to development in their countries.

I. SHARING OF ATI EXPERIENCE WITHIN AID

As part of the evaluation, the program officers in AID missions in each of the four countries were interviewed regarding their knowledge of ATI projects as well as their knowledge of small enterprise financing sources and sources of potential appropriate technology influence in their countries.

The AID sponsored Improved Rural Technology (IRT) project was specifically mentioned by the AID missions and was compared to ATI efforts in the same countries.

The evaluation found that the IRT project has not been effective in the four countries visited because of a variety of reasons. Specifically the evaluation found the following regarding IRT:

1. That the AID mission staff time is judged by the mission to be excessive for the support which can be delivered to the field.
2. That the administrative procedures utilized by AID/Washington are judged as too cumbersome by the AID mission people to allow them involving IRT funds and projects which may be brought to the mission by local people.
3. That frequent rewrites of project proposals submitted by the missions had been rebuffed with sufficient frequency by AID/Washington to lead field people to believe the program cannot be useful to them for their objectives - even though no other potential source of funds may be available.
4. The evaluation found only two projects in the whole of the four countries visited where IRT funds had been provided. One was for an environmental liaison center in Kenya, with an IRT grant of \$75,000, with an additional \$50,000 from non-AID sources.

This environmental liaison center provided NGO training, a book on reforestation, a source book on Africa NGO fuel wood activities, and monies for travel to attend a conference.

The second IRT project which was found was a family grain storage project for a total of \$14,500. The AID mission in Kenya reported that no follow up had occurred since the grant had been funded and that not much AID staff time is available for monitoring of this particular project. In addition, the mission stated that to have Experience, Inc., come out to Africa for this project had not proven to be effective.

5. In all in Kenya, a total of 6 different proposals for IRT projects were discussed and two had been funded. Several of the projects were small projects proposed by Peace Corps people for direct aid to rural poor. Each of these projects had "died" due to reported problems with AID/Washington.

The question of AID interaction with ATI appears in Africa to be a relatively positive proposition, with one exception. In the countries of Lesotho, Swaziland, and Malawi, the Mission had good relations with ATI and was familiar with the ATI projects as well as the institutions involved. This appeared to be the direct result of the ATI Operations Representative, Catherine Fort, having a good working relationship with the appropriate AID program officers.

In the case of Kenya, information which had been provided by the Africa Area Director as well as the Operations Representative, Joyce Henderson, had not been distributed within the AID Mission and, as a result, program officers were unfamiliar with the details of the ATI projects.

In each of the cases, however, the AID program officers expressed an interest in keeping abreast of what ATI was doing and in possibly participating with ATI in future funding when the institution grew to a point that AID funds could become effective.

The evaluation found that small projects were of little interest to the Mission because of the time involved and the constraints imposed upon the field by AID/Washington.

The evaluation showed that the AID missions in Swaziland and Malawi had the highest knowledge of ATI's projects among the four AID missions visited. In the other countries, especially Lesotho, the AID project people were familiar with broad informational categories, but not with specific details.

In Kenya, there was no collaboration between ATI and AID due to a lack of dissemination of information by local AID management.

The following indicators' scores bear out the preceding paragraphs:

<u>Indicators</u>	<u>No. of Projects</u>	<u>Percentages</u>
1. Inputs from Field Missions	0	
2. Knowledge of ATI Projects by Local Missions	5	31.2
3. Working relationship between ATI and AID	4	25.0

It should be noted that the second and third categories, namely a knowledge of ATI projects and a working relationship is 100 percent for both Swaziland and for Malawi.

In Kenya, the ATAC project is beginning to be noted by the AID Mission and AID has expressed an interest in having ATI brief the Mission on all of its projects and to possibly be involved in joint working efforts, AID would be interested in working through ATI as well as through through ATI's contacts and local institutions. No such comment was made by AID Mission people in Lesotho.

The evaluation found that communication between ATI and AID in Africa was one-way - namely from ATI to AID and not the reverse.

J. SELF-SUFFICIENCY OF PROJECTS

In the context of the ATI evaluation, the question of self-sufficiency for ATI included the political arena as well as economic self-sufficiency. The evaluation addressed questions such as whether there

was effective local participation in ATI client organizations by local people. In addition, the evaluation looked to see whether ATI resources were displacing other sources of funds and management input for the supported institutions. Finally, the evaluation looked to see whether ATI was creating dependencies rather than self-sufficiencies.

A number of indicators were developed which attempted to address these questions in a systematic fashion. These indicators, shown below, have been scored to give an idea about political as well as economic self-sufficiency by ATI's client organizations. The results are shown as follows:

<u>Indicators</u>	<u>No. of Projects</u>	<u>Percentages</u>
1. Political Stability in Region	16	100.0
2. Involvements of Principals of Supported Organizations with Local and National Power Structure (can policy be influenced?)	9	56.2
3. Are poorer people benefiting from ATI's efforts?	9	56.2
4. Are poorer people involved with project definitions? Implementation?	7	43.8
5. Are projects "on the ground" in rural areas?	13	81.2
6. Has employment increased?	2	12.5
7. Demand for loans increasing among beneficiaries (or increased performance by ATI grantee)	8	50.0

8. Training of local people accomplished	8	50.0
9. School leavers encouraged to participate	4	25.0
10. Women involved in projects	6	37.5
11. Increase in community status for ATI grantee organization	5	31.2
12. Morale high among institution people	11	68.8
13. Internal management consistency and stability	10	62.5
14. Discipline among ATI grantee organizations	12	75.0
15. Economic controls and budgets	8	50.0
16. Private sector products for services supported	10	62.5
17. Increased capital formation capabilities of small enterprises supported	5	31.2

Overall, the ATI's activities which were directed to increase self-sufficiency scored a 53 percent against the total population of indicators which were possible.

In the indicator for "increased capital formation capabilities of small enterprises," the ATI experience points up a number of items which are interesting. In the five projects where direct capital formation im-

provements are being made, the projects are on the ground in rural areas. This aspect is key for any "acid tests" of small enterprise development schemes, whether they be ATI-sponsored, USAID-sponsored, or other international donor-sponsored. In this case, ATI has a 100 percent correlation between the two.

K. PROMOTION OF APPROPRIATE TECHNOLOGY

A second function of ATI as defined under the 1979 grant was "evaluation and communications" for the purpose of exchange of information and experience with organizations interested in promoting appropriate technology. The evaluation addressed the question of whether ATI had been effective in this area regarding promotion of appropriate technology.

Again, a number of indicators were selected which would tend to state whether ATI was promoting appropriate technology in some objective fashion. The indicators and scoring follow:

<u>Indicators</u>	<u>No. of Projects</u>	<u>Percentages</u>
1. Local people setting their own priorities	16	100.0
2. Local AT organization with regular meetings and high government support being funded	3	18.8
3. Regular exchange of information on AT topics. Local dissemination	10	62.5
4. Evaluation within ATI of projects and results	2	12.5

5. Strategy for dissemination within countries and regions	7	43.8
6. Contact with "AT Experts" in each country	6	37.5
7. Identification by local organizations of alternate funding sources	4	25.0
8. Projects "on-ground" in rural areas	12	75.0
9. New processes, methods, or products introduced	10	62.5
10. Knowledge of local situation by ATI operations representatives	16	100.0
11. Incoming correspondence to ATI on technical and ATI topics	2	12.5
12. Demand for funds for "appropriate development" activities	7	43.8

The evaluation found that the "bottoms-up" approach used by ATI and their emphasis on institution-building as opposed to "hard technology projects" is appropriate for the level of local institutions to be found in Africa. The "bottoms-up" relates to the process of local ownership of the idea to be supported, not to the process used by ATI to help refine the idea into a workable project. Also, the local networks of people and institutions to disseminate information is very helpful in getting the regions on Africa where ATI is active on their way to more effective internal development.

ATI in Africa feels that "appropriate development" and "appropriate technology" go hand-in-hand in East and Southern Africa. As a result, the categories for local people setting their own priorities scored 100%, as did a

knowledge of local situations by ATI. The evaluation found that ATI acts in a facilitating role rather than a directive role when working with its institutions and grant organizations.

Excluding these two 100 percent categories, the evaluation found that an overall score of 39 percent could be given to the indicators which could have been scored had all projects met all indicators.

L. ATI FUNDING LEVELS

The total funding levels for the 16 projects reviewed totaled \$647,700. Of this, \$150,000 was approved for funding during 1981; \$350,000 during calendar year 1980, with the remainder being dispensed during 1979.

The evaluation showed a definite slow-down in funding provided to projects for reasons which were described by the Africa staff members as being "increases in staff in Washington time due to requirements by ATI management."

The funding levels and rate of funds being dispensed, projects being reviewed, people in the field and in overhead positions, etc. will be covered in greater detail in the evaluation report itself.

SECTION FIVECONCLUSIONS OF THE EVALUATION

ATI's experience in Africa indicates that progress can be made and benefits can be delivered to the AID target group in the rural areas. ATI's experience also indicates that the delivery system can ensure low-level funding to appropriate projects in the rural areas, and that it is possible for some projects to have technological impact. ATI's approach for doing this is to support people and good ideas where the ideas have the capability to grow into a sustainable project (through an indigenous institution) In addition, they work with a "bottoms-up" development process whereby the development constraints and the lines of intervention are defined by the local people themselves using local resources.

ATI acts as a facilitator and catalyst in their projects. In only one project, that of the fisheries project in Malawa, did ATI insist upon any components of the program being in place as a prerequisite for funding.

ATI field people visit projects on a scheduled basis and generally work their client institutions on administrative and funding matters during these visits. ATI's grant organizations indicated that they were extremely happy with the ATI field people and with their level of technical competence and expertise. In addition, the people interviewed indicated that ATI people knew the country and the local problems sufficiently well to be effective in their efforts.

A. ATI'S EXPERIENCE IN AFRICA

The evaluation found that the field projects in Africa in the four countries visited were the result of ideas and priorities set by the Africa team without significant demonstratable input from ATI management. For example, the strategy for development, the projects selected, and

the process for project selection were all the result of the professional experiences of the Africa team members. As a result, should these people leave ATI, the complexion of the field program would undoubtedly change. It appears that the principal documentation for the Africa experience is contained in the project reports and files of the Africa team, but that few attempts have been made to replicate the successes in other parts of ATI.

ATI's experiences in Africa are largely positive as can be seen from the results of the Figure 1 chart. However, it is necessary to examine those results in light of the Congressional mandate in the AID-ATI grant document.

The House International Relations Committee (HIRC) defines appropriate technology as "tools and machines that are suited to labor-intensive production and fit LDC small farms, small businesses, and small incomes." Morawetz defines appropriate technology as the set of techniques which make optimum use of available resources in a given environment.^{1/}

^{1/} Morawetz, David, "Employment Implications in Developing Countries: A Survey," The Economic Journal, Sept. 1974.

It is important to note that ATI supports the latter definition of the term "appropriate technology" in its field program strategy and tactics. Specifically, the ATI African/South Pacific Operations Representatives and management do not support the contention that "hard technology" can be usefully applied without local institutional support and capability.

In both definitions, appropriateness is defined by the environment. For most developing countries, including those in Africa, the environment includes scarce capital and limited numbers of trained people. Unskilled and semi-skilled labor is abundant, with the majority of productive enterprises being very small and without established methods of distribution for manufactured products.

Therefore, the environment under which ATI is operating is certainly varied and ATI cannot be expected to do everything that needs to be done. However, the ATI people were very clear in their pattern of working first to establish clear operating plans and to ensure local authorship of these plans before proceeding to any level of funding. Where the formulation of plans was necessary, ATI took an active role in the process (the directive method as opposed to a reactive mode.)

1. Overall Strategy

The overall strategy that the evaluation found in Africa was essentially two-fold:

The evaluation found that ATI works in a responsive mode and concentrates on institution-development as a critical first step.

The ATI strategy could be defined as follows:

If institutions are supported, then infrastructure can be put in place to disseminate appropriate technologies.

If institutions are well staffed, then development constraints can be identified by local people.

If constraints are identified, then projects can be identified also by local people.

If the people are involved in the definition of their own projects, then equity is present, and the projects have a higher level of success probability.

The ATI strategy, in light of the results of the evaluation, consists of three basic areas. These include institutional-development strategies; the strategy for private sector focus; and the development and dissemination of appropriate technologies. Each of these strategies is examined in some detail in the paragraphs that follows:

a. Institutional Development. ATI's strategy for institutional development takes into consideration the limitations of private sector as well as government institutions in each of the countries. The strategy accommodates governmental focus on appropriate technology in private sector issues as well as individuals within each country who might be capable of manning such an effort.

In Lesotho, ATI attempted to establish an Appropriate Technology Unit within a government parastatal organization (BEDCO). This effort, although it did not succeed directly did result in a consultancy which resulted in UNIDO funding of a replanned ATU unit. Since Lesotho is a fairly small country, the existence of a working appropriate technology unit in the rural areas is an accomplishment which must not be overlooked and would not have happened without ATI's direct involvement. Interestingly, the USAID Mission has not provided direct support to the Thaba Tsek unit being supported by ATI.

In Swaziland, private sector institutions engaged in AT development are rare, yet ATI found a private sector institution which had some record of success (the SAFT organization) and elected to support them with operating funds. This SAFT organization was involved in a farming technology school, and the impact on school leavers appears to be an important part of SAFT's contribution to Swaziland.

ATI correctly views institutional development as being tied to the competence of staff members and to the motivation of those involved. This process can be influenced by aid tied to staff development and to a management process which links donor agencies to local institution development (as in ATI's case.) ATI's focus on John Pape, the principal of SAFT, again demonstrated their

predisposition towards supporting people who are part of an ongoing and successful group (and where they feel that ATI's involvement can have a positive effect on the long-term development of the institution.) .

In Malawi, government institutions greatly overshadow private sector institutions. ATI's support of a church-supported, largely non-business oriented institution (the Malindi Workshop) has not resulted in self-sufficiency (as was planned). However, ATI's support of the LADD organization, as well as the Fisheries Ministry, demonstrated positive institution building factors for these government operations.

Both operations supported private sector organizations directly (the small business development operation and the ferro-cement boat operation) and indirectly contributed to development of the private sector in Malawi.

In Kenya, ATI chose to be the catalyst in the formation of an Appropriate Technology Advisory Committee (ATAC) which included important people in the government as well as the Chairman of the country-wide Institutes of Science and Technology. This organization again is directed at providing appropriate technology support (including money) to private sector interests in Kenya who can demonstrate the need and have a plan which meets ATAC's written objectives.

b. Private Sector Focus. The strategy for private sector development includes working with government organizations who support private sector development (universities, individuals, not-for-profit organizations, as well as private businesses). In each of the projects examined, ATI's strategy included beneficiaries, either directly or indirectly, who were part of the private sector.

In the case of productivity, for example, ten of the projects, or 62.5 percent, were directed at increasing the outputs from the private sector in some fashion.

A comparable AID project, the IRT project, was not able to demonstrate this type of success, even with substantially greater resources committed. In fact, the recipients of ATI private sector support indicated an unwillingness on behalf of USAID and other international donors to become involved with their operations, citing their relative small size and lack of national impact as the reasons for noninvolvement by USAID. In addition, the ease with which ATI can work in the private sector and ATI's awareness of the value of time were important factors in their success in dealing with the private sector.

c. Development and Dissemination of Appropriate Technologies. ATI's strategy for development of appropriate technologies is consistent in that it relies on local people to define their own development constraints and to define the technologies which best address those constraints. This strategy also relies on local dissemination of technology through intermediary groups (a vital component of institutions building and non-reliance on ATI resources for long-term survival.)

2. Program Status

The results of ATI's projects in the field are, on the whole, positive with regard to the results and impact for the 16 projects surveyed, with three notable exceptions where the projects were canceled. In general, ATI's response to the evaluation questions far exceeded AID's own IRT program (had the IRT projects been evaluated to the same standards). One of the most interesting aspects of the evaluation was the fact that the projects being supported would not have been supported by any donor had it not been for ATI.

a. Institutional Development. ATI's most important contribution in the countries examined was the institutional development aspects of their work. In each case, ATI staff worked with existing management people to improve planning, budgetary considerations, and implementation. The institutional development aspect of ATI's efforts

will undoubtedly lead to funding by other international donors in the months and years to come. ATI's involvement as a catalyst and facilitator improving the skills of local people and local institutions was the single most important outcome from this evaluation.

ATI's efforts provided assistance in ways which responded to local needs while building local social and technical capacity in indigenous institutions. ATI did not strive for immediate results, as measured by goods and services delivered, but put their attention to the institution-building aspects and specifically to move beyond the relief and welfare approach to poverty. In fact, none of ATI's existing projects have any welfare components! One of the reasons that the ICA project was canceled in Kenya was because of the welfare orientation which evolved as the project got underway (contrary to planning).

This approach is to be commended and should be emulated by other international donors. As David S. Korten, of the Ford Foundation and Asian Institute of Management, pointed out in his article entitled, "Community Organization and Rural Development," in the Public Administration Review of September/October 1980 issue, "Participation must be a major theme by the rural poor in the planning and implementation processes through local government, project advisory committees, cooperatives, and other forms of group organizations". ATI stresses participation by local people (not necessarily the rural poor, however) where the institution-building aspects are critical. ATI does insist, however, that local institutions have access to and communicate with the rural poor when the projects are directed to them.

ATI's financial system for its projects appear to be efficient. Checks were hand-delivered where possible by people taking trips and were mailed according to predefined schedules in other instances. The project planning documents were an important part of the Africa team's management tools and were rigorously adhered to unless changes were agreed to mutually between ATI and the grantee organization. The grantee organizations repeatedly stressed that ATI's visits caused them to refocus their planning and to prepare documents which should have been prepared earlier,

but for which they had little incentive. Other donors frequently provide the funds, but not the follow-up, and as a result the implementation phase is hampered. This is one of the more important outcomes for the evaluation of the Africa projects - that is, the implementation of projects where preplanning has been agreed upon.

ATI's number one priority in Africa is institution-building and development in countries where the capacity exists for such an undertaking. In economies where ownership and private sector capital formation policies are lacking or non-existent (Zambia and Tanzania to name two), ATI has been unable to establish that the institutional capabilities exist to allow support. ATI in the past has visited many other countries with an eye to establishing projects, but as yet, can find no institutional capacity which will allow ATI's involvement. This is the number one priority before a country can be targeted for assistance. In addition, staff and budget constraints are such that these or other additional countries cannot be handled with the resources on hand.

ATI's working theme in Africa includes the insistence that their organizations establish networks of other indigenous organizations in-country as well as out of country to assist them with their efforts. The evaluation found that 9 of the 16 projects had networking as one of its objectives which, over time, will greatly alleviate the dependence of that organization upon ATI. Indeed, ATI is consistent in not providing funding beyond the initial grant, unless new projects can be shown to be a logical extension of the original funding package.

ATI also encourages outside donor interest, with five of the projects, or 31.2 percent, having reported contact with other donor sources already.

ATI's overall 55 percent rating for the indicators relating to institutional development is commendable in light of the limited communications facilities in Africa and the first generation nature of the institutions visited.

ATI's most ambitious institution development project in Africa is the ATAC organization in Kenya. This organization, properly positioned between the government and the private sector, should be an important part of Kenya's appropriate technology efforts in the years ahead. ATI's role as a catalyst in the formation of this organization is a commendable part of the African experience.

b. Private Sector Focus. The evaluation found that 100 percent of ATI's projects evaluated were either supporting the private sector directly or indirectly through their grants. Thirteen of the 16 projects supported the private sector directly, while three supported government operations which directly supported the private sector.

The breakdown for support of private enterprise is as follows: One university; four private business; one individual; seven nonprofit organizations; and three government agencies.

The evaluation found that other donor organizations generally do not have private sector development projects. Although AID's IRT project is specifically directed to small enterprise, programmatic difficulties are restricting its effectiveness and the Missions do not consider it seriously when looking at funding small enterprise projects. The evaluation found, too, that the Peace Corps has many development projects and that the Peace Corps frequently approaches the AID Mission for assistance to no avail...

c. Development and Dissemination of Appropriate Technologies. ATI's development of appropriate technologies is constrained by many factors, including the capacities of local institutions to disseminate such information; the abilities of local groups to develop ideas worthy of support; maintenance and support infrastructure limitations; and a host of other factors.

The dissemination of appropriate technology information directly by ATI (as opposed to dissemination by local groups) is not judged by ATI field people to be an appropriate role for them. Indeed, dissemination of information is important in ATI's view, but only where local institutions can be involved.

B. ATI'S FIELD PROJECTS

Conclusions drawn from the field projects are wide-ranging, but are supported by findings reported in the previous section to this evaluation trip report. General conclusions follow concerning evaluation of the 16 projects in eastern Africa.

1. General Conclusions

These conclusions are drawn from the findings presented in Section II of the report. The data contained in Figure 1 forms the basis for the information which follows.

- ATI seeks to be a general development organization, not an appropriate technology* development organization.
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* The definition of the term "Appropriate Technology is critical to this evaluation in that ATI does not take the view that AT is just "hard

technology". AID's own Report to Congress and the Grant Agreement itself also shares this broader view. ATI views their "general development role to be very "appropriate" for the circumstances found in their operating areas.

- ATI attempts to be responsive in the implementation phases of its programs, but takes a directive role in the planning of projects with its client organizations.
- ATI considers its projects to be experimental.
- ATI does have a comprehensive strategy for a country or a region in terms of the development it will support. This strategy relies on local development of programs as well as lines of intervention for the country.
- ATI does not necessarily emphasize the technical content of its projects as the most important component to consider. Rather, it looks at the broader aspect of whether the institutions involved can use the technology and under what circumstances. ATI then attempts to develop projects which address locally-felt needs with the technology component(s) playing their appropriate roles.
- ATI emphasizes institution-building by supporting what a group or individuals have decided to do or already knows how to do.
- ATI's sense of "appropriateness" in carrying out its work is the methodology and delivery system being supported, not the technology involved in that activity.
- ATI's staff does not try to carry-out macro-economic, technical, or social analyses in any systematic way prior to funding projects. Rather, specific analyses are conducted on a project by project basis.

- ATI bets on the person, not the specific program.
- ATI is a funder and general advisor.
- ATI finds its own projects rather than people finding ATI. The process is relies on talking with AT institutions in each country to obtain leads and information on groups or individuals who wish to pursue properly-oriented development projects. From this base, ATI then looks to the private sector for most of its projects and referrals.
- ATI supports smaller projects than most other development organizations. Once ATI has provided funding support, other donors become interested.

In addressing the specific questions raised by the evaluation, the following conclusions, based upon findings, apply:

2. Increased productivity.

Although ATI's projects show a high orientation toward increasing productivity (just under 50 percent of the indicators), only three of the projects related directly toward improving manufacturing processes in rural industries. These projects were the Bura roofing project and the Kenyatta University projects for sisal-reinforced cement building materials and the Richard Wilson Consultancy for producing charcoal from scrub brush.

In terms of improving directly the capital formation capability of rural enterprises, the projects were not specifically designed to enhance this aspect of rural enterprises, but had some success in certain instances. The ATAC organization, however, provides some hope to change this in that people from throughout Kenya are being encouraged to submit ideas. Undoubtedly, some of these ideas will come from success-oriented entrepreneurs who will seek to improve their own capital formation capability.

Other projects related to energy substitution methods, farming techniques, boats, improving basic skills, etc. Even though these projects certainly increase productivity in some regard, the direct improvement of income for rural industry still remains a development constraint with ATI's activities addressing these constraints only tangentially.

3. Reaching the AID Target Population.

The ATI projects, through their institution-building mechanism, did manage to reach the AID target population in approximately 50 percent of the ways defined in Figure 1. Leaving out the canceled projects, the figure is substantially over 65 percent. The ATI approach in terms of institution-building seems to be an effective means of reaching the AID target population through private sector resources. In each case, where the AID target population was reached directly, however, the institution-building factor was negligible.

4. Efficiency Vis-A-Vis Other AID Vehicles in Increasing Productivity.

The ATI process was over 70 percent efficient in terms of increasing productivity vis-a-vis other aid vehicles when the canceled projects are deleted from the scoring. This is accounted for, again, by the institution-building mechanism of reaching the rural poor using local resources and local people to define development constraints.

5. Technology of High Quality.

Even though ATI does not involve themselves directly in the selection of technology, the experience of the "bottoms-up" development efforts supported by ATI can be shown to be extremely efficient in terms of the

perceived quality aspects by the ATI grantee organizations. In virtually all of the cases (10 out of 16 projects), the people currently with the projects defended the decision concerning the route taken.

The process used by ATI in terms of the perceived qualities of the project by local people leads to a willing involvement and a willingness to identify with the outcome. For this reason, the approach used by ATI of involving local people in definition of local constraints and in the subsequent definition of the line of intervention was very successful.

6. Dissemination and Use of Technology.

The cornerstone to ATI's dissemination policy in Africa is to establish networks of indigenous organizations rather than involving themselves directly in disseminating this information. ATI acts as a catalyst organization in this case, although the organizations at this time are beginning to develop their own outreach programs and to develop constituency groups back into the rural poor. The advertising noted on Figure 1 in seven of the 16 projects is a demonstration of the outreach strategies being adopted by ATI's grantee organizations.

In five of ATI's projects, outside funding organizations have expressed an interest in becoming involved, largely because of ATI's initial role.

Although some of the above factors are positive as demonstrated, the fact remains that ATI does not take an active role in disseminating its own technology or the technology developed by its own grantee organizations. In addition, ATI does not take a direct role in disseminating the information, except as the activities undertaken in the ATI technology diffusion reports published by ATI/Washington. These reports, however, are not getting into the hands of such people as AID Mission people or ATI grantee organizations themselves.

7. Management Systems to Follow Up Technology Use and Control.

The institution-building mechanisms stressed by ATI in its country programs results in a 52 percent showing, as defined by the results tabulated in Figure 1, for indicators relating to management system follow-up. In this case, ATI acts as a sounding board for its institutions and insists on written plans, schedules, and budgets for program implementation. In addition, ATI follows up with its grantee organizations and this is an important part of the success demonstrated to date.

One factor which was found during the evaluation is that, although ATI's assistance is directed to completion of individual projects, the ATI organization does not advocate or practice in the field with a system which will allow replication of successful projects.

The ATI management role can be either responsive or directive, depending on the phase of involvement with the ATI grantee organization. The reader will note that this is a management-intensive style of aid to LDC institutions.

The evaluation found that ATI considers whether or not backup systems are available for such things as repair and maintenance. The existence of such systems is all important in determining which level of technology can be supported in a local environment.

ATI also maintains contact with local, private sector companies in each of its countries. These contacts are current and are the source of referrals and suggestions of linkages to rural enterprises where appropriate.

If successful private sector organizations were involved, the concept of managed technological development, adaptation, and dissemination could be more readily adopted in a given country. In all likelihood, the ATAC organization will establish these linkages to the private sector over time, with ATI taking an active role in the process.

The evaluation found that ATI's senior management is not effective in directing and guiding the staff and activities of the organization in terms of management systems to follow-up technology. Attempts are being made via technology dissemination reports to do this, but field staff people do not feel they have significant inputs to these efforts.

8. Effectiveness of Management Systems.

The evaluation showed a positive correlation between the creation of management systems to follow-up technology and the effectiveness of the management systems themselves. This was demonstrated by the 50 percent scoring of projects where a change in output has occurred since the start of the project. Other indicators in this category are relative as shown on Figure 1, but the 50 percent figure correlates with the overall 52 percent figure for the management systems to follow-up technology.

The evaluation found that ATI's tactic of visiting their projects frequently is a key to the effectiveness of the management system itself. ATI stresses planning and indigenous development of ideas, budgets, and schedules as a requisite part of the funding efforts.

It appears as though the projects involving the private sector will require some type of follow-up such as this. Where planning is one on one and where the bottom line is frequently profits, the effectiveness of a management system is all-important.

The use of Price-Waterhouse in a management consultant role with the Institutes of Science and Technology in Kenya is an excellent example of the use of private sector networking resources to help other private sector people. In this case, ATI provided monies through the Principal's Committee to develop the financial network and then specified that relevant Institute people would be trained in the accounting system. In addition, ATI commissioned Price Waterhouse to assist the Institutes in a strategic planning study relating to growth. This use of experts in the private sector to provide management assistance should be viewed as a model for other similar operations.

On the whole, the effectiveness of the management component in the ATI grantee organizations is a function of the personal philosophy of the African Director. The evaluation found no evidence of ATI overall management support for management system development within the projects. ATI policy does not specify management system development, nor does it provide guidelines. As a result, the experience of individual operators in the countries is of crucial importance to the success of ATI's programs and points up some institutional deficiencies within ATI itself. At some point, it would become necessary for ATI to station people within the countries or on a regional basis to minimize overheads and to maximize time in the field.

9. Increased Ability of Organizations to Contribute to Development.

This is the institutional development component which has been discussed so widely in this trip report. This is clearly ATI's principal activity in Africa, and the overall rating of 55 percent, based upon the indicators shown in Figure 1, is indicative of the efforts and the success that ATI has had in these projects. Discounting the three projects canceled, and the one consultancy not directly related to institutional support, the overall score of this institution-building category would be a high 74 percent.

ATI clearly stresses institution development and local capacity as their principal objective in their field programs. Their working with indigenous groups and relying on local definition of problems appears to be successful in light of the high scores and overwhelming evidence in support of the positive nature of this category.

ATI's success in this area lies in the abilities and a screening process which rates individuals and their capabilities high on the list of factors in the decision-making process by ATI.

Of the three failures in ATI's projects examined, all three were clearly related to institutional defects. Two of these failures were related to personality conflicts within the organization, while the third related to the welfare nature of the organization selected to undertake the grant. In all cases, ATI funds were withdrawn before completion of the project. ATI's planning tools used by the Africa team were instrumental in identifying problems early, and when attempted remedies failed, ATI funds were cut off.

10. Sharing of ATI Experiences within AID.

This category was clearly a failure in terms of overall USAID institutional memory and in terms of learning from ATI's experiences. In three countries, Swaziland, Malawi, and Lesotho, the ATI experiences were shared with the Mission people and appreciated. Undoubtedly, this will lead to some practical applications of lessons learned in the field. However, AID looks to ATI to provide them with information and does not task ATI for inputs.

USAID/Washington seems to have a demonstrated hostility toward ATI's program and does not employ a systematic process to learn from ATI's field experiences.

The working relationship between AID and ATI is non-productive in the field and negative in Washington. Undoubtedly, the management portion of the evaluation will examine these issues and will come forth with recommendations.

The AID/ATI working relationship can be a positive factor in private sector support in the developing countries. This has been demonstrated by AID's interest in projects being funded by ATI in Africa and in the request by the Mission in Kenya for a full-blown briefing by ATI with a look toward co-venturing.

A definite working relationship should be established between AID Missions and a profit-knowledgeable organization working with the private sector. Clearly, successful development can be accomplished from within the private sector using private sector resources. ATI has clearly demonstrated that the private sector side of development can be positive. Since the value-added components within a society are generated by the private sector or with private sector productive means, this area should be strengthened and AID policy should encourage that development.

ATI is not a perfect organization by any means and it is not accomplishing everything it set out to do. Its overheads are relatively high in light of money delivered to the field, but it is reaching organizations which are not being reached by other international donors. And if the notion that small private sector projects can contribute significantly to employment and to income generation in the developing countries, then AID policy and international donor policy must take into account the accomplishments of ATI and or organizations similar to ATI.

ATI has a number of experiences which should be shared within AID and which should be incorporated into AID project design phases of planning. The method of institution development should be studied more closely and the lessons applied and shared throughout USAID; the productivity issues which have been addressed by ATI should be looked at closely and should be taken into account where projects are being planned. In fact, a number of ATI experiences should be made required reading for AID planners. A natural working relationship is essential if ATI is to maximize its efforts and if AID is to learn from others working in the development field, but in the private sector.

11. Self-Sufficiency of Projects.

Overall, ATI's projects promote self-sufficiency and do not promote dependencies by its grantee organizations. The direct positive nature of capital formation when working with labor intensive industry is a complex

topic and is the focus of much attention by development planners throughout the world. ATI's efforts show a 31 percent positive correlation between their projects and between the increased capital formation capabilities of its enterprises. These projects do not always involve a hard technology. In the case of the SAFT organization in Swaziland, it involves instilling in the minds of school leavers the "appropriate techniques" best suited to rural cash-cropping; in the case of the fisheries operation, it involves providing rural fishermen better tools and more efficient vessels with which to fish; in the case of the LADD operation in Malawi, it involves teaching entrepreneurs new skills and providing business training in the field to improve practices; in the case of the Bura roofing project, it involves a new hard technology for sisal-reinforced cement roofing materials. For the Kenyatta University grant, it involved a seminar where practitioners in appropriate technology from a number of African countries gathered in Nairobi for a seminar on cement building materials and low-cost building processes for the rural areas. Rural artisans were a key factor in each of these projects, and in each case, ATI worked through an intermediary organization to reach the largest possible number of practitioners.

The experiences of ATI in Africa point up the absolute need to work through intermediary organizations where some "magnification of effort" can be realized. This type of effort requires people on-site which translates to people in-country. It involves training local people for local tasks using locally produced raw materials. It involves labor intensive industry in each case. It involves import substitution in

most cases. In short, the ATI experience points up the need for the use of educational tools to promote self-sufficiency.

Not all projects demonstrated these qualities. On the whole, however, the ATI projects each had some component of self-sufficiency. The demand for loans, for example, was increasing in 50 percent of the projects that were being sponsored by ATI. The availability of capital was certainly a constraint, but ATI efforts were allowing rural artisans to become more skilled in competing for available funds.

The projects being supported by ATI show a high degree of institutional strength in terms of attracting additional funds from outside donors. This capability is still in early stages of maturity with some of ATI's grantee organizations, but is a topic of discussion in all of them.

In dealing with private sector organizations, it is essential that the self-supporting nature of the projects be realized at the beginning. ATI field people realize this and are sensitive to the issues surrounding them. This sensitivity, however, is reflected in the professional views of the local ATI people and is not demonstrated to be an overall ATI institution management consideration as viewed from the field standpoint.

12. Promotion of Appropriate Technology.

As previously stated, the evaluation showed that ATI does not promote hard technology as the only element of "appropriate technology". ATI field people do not view this as a development constraint, but rather, as a strength and a necessary ingredient in developing local capacity for solution of local problems.

13. ATI Funding Levels.

The amount of money delivered to the field during 1981 was approximately half of that delivered during 1980. In the view of the evaluators, this slow-down of funds was due to internal management problems within ATI and a decrease in emphasis upon field projects by ATI management caused in part by reductions in AID funding levels as evidenced by the record.

The evaluation also found that the monitoring responsibilities for the field staff increased from 1980 to 1981. This factor, coupled with a desire by all to increase ATI's reach into the LDC's, is creating morale problems and the danger of over-extension of available resources within ATI itself.

to the field No such decrease in field impact was intended, but was the result of AID restrictions.

SECTION SIXRECOMMENDATIONS OF THE EVALUATION

The following recommendations are based upon the conclusions presented in the previous section of this report. They are also supported by the findings contained in the Tables presented in Section Three.

1. ATI should continue as an AID-sponsored organization with continued private sector focus and program support.
2. The funding process for AID support of ATI should be more predictable funding levels and timing of funds disbursement to ATI.
3. ATI should institute changes in its management process to insure that field programs and projects are more closely tied to daily activities and emphasis.
4. ATI management should institute a system to insure timely response of grant documents to field situations. This would combat the trend toward increased time between funds being reserved and obligation of the funds.
5. To insure management continuity in field projects, the staff of the three operating regions within ATI should be increased as new projects are approved to recognize the critical nature of management of field operations.
6. AID should undertake an examination of successful ATI practices to improve its own private sector delivery policies.
7. ATI's internal evaluation system should be improved to take advantage of field experiences, especially in the project planning and implementation phases.

8. ATI should increase its flow of field data and experiences to its own grant organizations and to AT institutions and individuals within each country and region.
9. ATI management should strengthen the process by which replication of projects can occur.
10. Replication of projects should become more important within ATI, and should be made part of each project design where feasible.
11. ATI's efforts in publishing its experiences and lessons learned should be strengthened through more field involvement in preparation of materials.
12. The field reports should be more widely shared within AID/W and within the field missions
13. Plans should be formulated to place people in the field when the number of projects and the grant funds being administered warrants the expense.
14. AID itself should take note of some of the many positive development experiences which emerged from this evaluation. One of the most important is the process by which ATI works with its private sector institutions (local equity in the ideas and a management intensive planning effort.) A series of case studies should be prepared which documents some of the more notable examples.
15. AID's own system of dealing with ATI should be examined with the notion that the Regional Bureaus have a stake in ATI's success and should be counted on to contribute to ATI's funding.
16. The Africa Bureau should take a more active interest in ATI's projects in areas of mutual interest, e.g., networking, private sector methods, funding, evaluation, etc.

These recommendations are included with the thought that both AID and ATI can learn from the evaluation experience. The process from this point will involve the joint efforts of AID and ATI management to improve the process by which AID supports ATI and learns from ATI's experiences.

ATI has been successful in establishing development efforts in the productive sectors of African countries. This experience deserves continued support from AID to allow ATI to move to a more accepted position as a private sector donor who can be counted upon by its clients and by the host country governments.

listing of indicators

Increased Productivity

Reaching the AID Target Population

Efficiency in Increasing Productivity

Technology of High Quality

Dissemination and Use of Technology

Management Systems in Place

Effectiveness of Management Systems

Increased Organizational Ability

Sharing of ATI Experiences within AID

Self-Sufficiency of Projects

Promotion of Appropriate Technologies