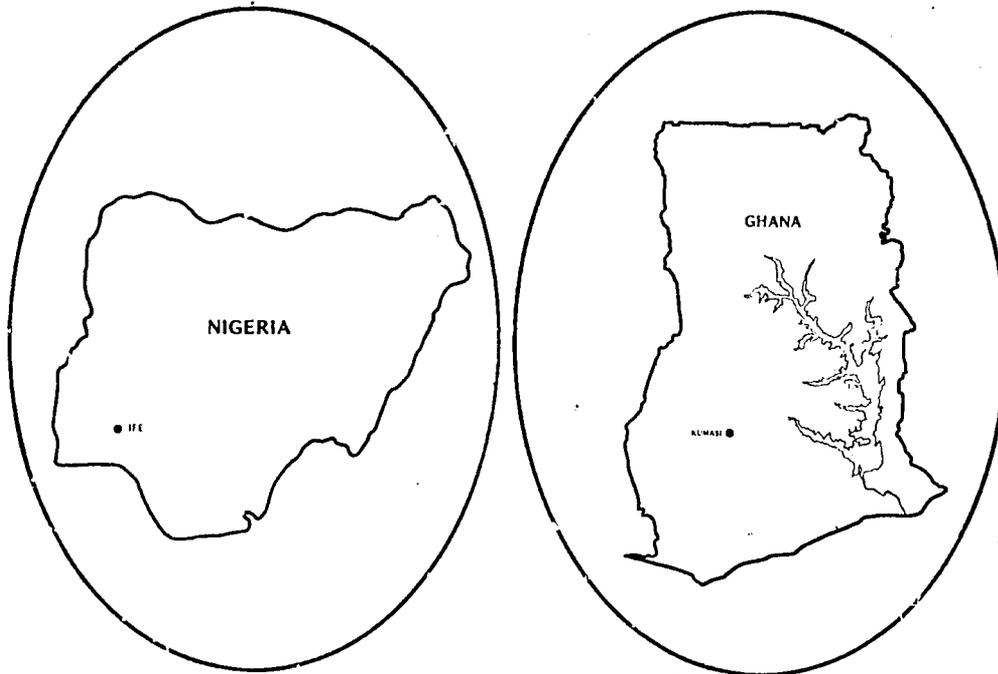


SMALL-SCALE INDUSTRY GRANT YEAR II



UNIVERSITY OF IFE ACTIVITIES

Grant Period: June 25, 1976 to June 24, 1977

UNIVERSITY OF SCIENCE AND TECHNOLOGY ACTIVITIES

Reporting Period: June 25, 1977 to January 9, 1978



A PROGRAM FUNDED BY THE U.S. AGENCY FOR
INTERNATIONAL DEVELOPMENT

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FINAL REPORT
YEAR II

UNIVERSITY OF IFE
SMALL-SCALE INDUSTRY GRANT

PROGRESS REPORT
YEAR I

UNIVERSITY OF SCIENCE AND TECHNOLOGY
SMALL-SCALE INDUSTRY GRANT

by

Donald E. Lodge

Contract No. AID/ta-c-1062

Office of International Programs
Engineering Experiment Station
GEORGIA INSTITUTE OF TECHNOLOGY
Atlanta, Georgia 30332, U. S. A.
January 1978

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UNIVERSITY OF IFE

INTRODUCTION

On January 23, 1974, the Agency for International Development (AID) entered into Contract No. AID/ta-c-1062 with the Georgia Institute of Technology (GIT) whereby GIT was to make \$45,000 grants for small-industry programs to up to four institutions located in different geographic regions of the world. This is the annual report covering the activities jointly carried out by the Georgia Institute of Technology through its Office of International Programs (OIP) and one of the five selected grantee institutions, the University of Ife, Ile-Ife, Nigeria.

In selecting the grantee institutions, the administration of the Georgia Institute of Technology used the following criteria as guidelines:

1. Suitability of the national macroeconomic framework for local business conditions.
2. Existence of practicing or potential entrepreneurs.
3. Community concern over unemployment.
4. Existence of potential markets for additional products.
5. Linkages (current or potential) with educational, financial, and business communities.
6. Quality of the staff.
7. The institution's potential for utilizing the grant effectively.
8. Potential multiplier effects.
9. Host government commitments.

After initial screening, the University of Ife presented a proposal for the establishment of a small-scale industry development program. This proposal was funded under the AID/GIT small industry grant program and was initiated on June 23, 1975. The annual report for the first year of this program was published in 1976 under the following title: Sam Aluko and Nelson C. Wall, Final Report--University of Ife, Small-Scale Industry Grant, (June 25, 1975 to June 24, 1976), International Programs Division, Economic Development Laboratory, Georgia Institute of Technology, January 1977.

PROGRAM PLANS FOR YEAR II

Background

Prior to 1960, the University College of Ibadan, which was established in 1948, was the only institution of university standing in Nigeria. On June 26, 1961, the University of Ife was created by the then Government of Western Nigeria. On August 1, 1975, through Decree No. 23, the Federal Military Government took over the University of Ife and since then has governed and managed the institution through an appointed council.

The University of Ife is located at Ile-Ife, a town which is about 80 kilometers to the northeast of Ibadan, the capital of Oyo State. The town of Ile-Ife has a population estimated at about 130,000 persons. At present, the University of Ife has 10 faculties, 48 teaching departments, and a student body of some 6,500 persons.

Within the Department of Economics and under the Faculty of Social Sciences, the Industrial Research and Development Unit (IRDU) was established in 1969. IRDU is the organization responsible for the implementation of the Small-Scale Industry Grant, which is funded by the Agency for International Development through the Georgia Institute of Technology.

The Industrial Research and Development Unit has the following objectives:

1. To conduct research into various aspects of industrial development in Nigeria and to disseminate the results of the research to all those who seek industrial research information.
2. To develop an effective industrial management development and training program to assist existing and potential indigenous industrial enterprises and to develop and improve their contributions to the overall economic development of Nigeria.
3. To encourage and assist community industries through close liaison between the unit and the local communities which want to develop community-sponsored industries.
4. To undertake consultancy work in areas in which the unit will, from time to time, have the relevant expertise.

5. To undertake all such other activities as may, from time to time, be necessary and expedient for the performance of the foregoing objectives.

Although IRDU was not set up solely for small-scale and medium-scale industries, it decided to concentrate on small-scale industries initially because it appreciated that the sector is vital to the Nigerian economy, one which had been sadly neglected by researchers and government policymakers in the past. It is a sector which is almost wholly indigenously owned and controlled. Given the attempt to "indigenize" the Nigerian economy, the development of the entrepreneurial abilities of the small industrialists became of crucial importance. In line with these considerations, the IRDU industrial extension service was established under this program to provide assistance to small- and medium-scale industries only.

At the beginning of program Year II, IRDU had three main divisions: Management and Extension, Research, and Training.

The Management Division was responsible for diagnosing and solving the management and technical problems of small-scale industries and for operating the field offices (two were fully operational at Ile-Ife and Ado-Ekiti) with a view to making assistance easily accessible to the small industrialist. The Division had, at the beginning of Year II, four senior staff, comprising the Head of the Division, two industrial extension officers, and one assistant industrial extension officer, as well as six supporting junior staff. Offers of employment were in the process of being made to four other senior staff candidates.

The Research Division was responsible for conducting meaningful studies on problems of small industries, feasibility and prefeasibility surveys, and for publishing the unit's studies and reports. The Division staff, as of June 30, 1976, was as follows: the Head of the Division, one research fellow, one junior research fellow, one research assistant, and six supporting junior staff.

The new Training Division was established in January 1976 to provide an effective industrial training program, in-plant or otherwise, to assist client industries, as well as to continue the organization of the annual training course, workshop, and exhibition for small industrialists and for the Ministries of Industries. The emphasis of the activities of the Division is placed mainly on in-plant and short-term training courses. The Division had two senior staff, including the Head of the Division.

Since its inception in 1969, IRDU had been headed by Dr. S. A. Aluko, except for a brief period of time in 1973-74 when he was abroad on sabbatical leave, at which time Dr. A. O. Lewis acted as Head of IRDU.

In 1973, the Georgia Institute of Technology (GIT) contacted the University of Ife as part of the work being carried out under the USAID 211(d) grant. As a result of this first contact, both institutions officially entered into an agreement that same year. The agreement established that the signatories, as centers of higher education, have common interests in both local and regional development and in the development of students at a professional level for Nigeria. The agreement also provided for the cooperative promotion of programs, projects, and activities, with the understanding that other organizations may participate.

The University of Ife presented, at a later date, a proposal to the Georgia Institute of Technology entitled "Program of Development for Small-Scale Industries." The program was implemented by a \$45,000 grant funded under an existing contract provided to the Georgia Institute of Technology by the Agency for International Development (AID) for this purpose. The terms of the grant permitted the grantee to utilize half of the grant funds for personnel, travel, materials and supplies, conferences, etc. The balance of the funds was to be used by the grantee to obtain training and consultation from U. S. technical assistance organizations.

The Georgia Institute of Technology subsequently contracted with the University of Ife to provide training, consultation, and an audiovisual documentation of the project.

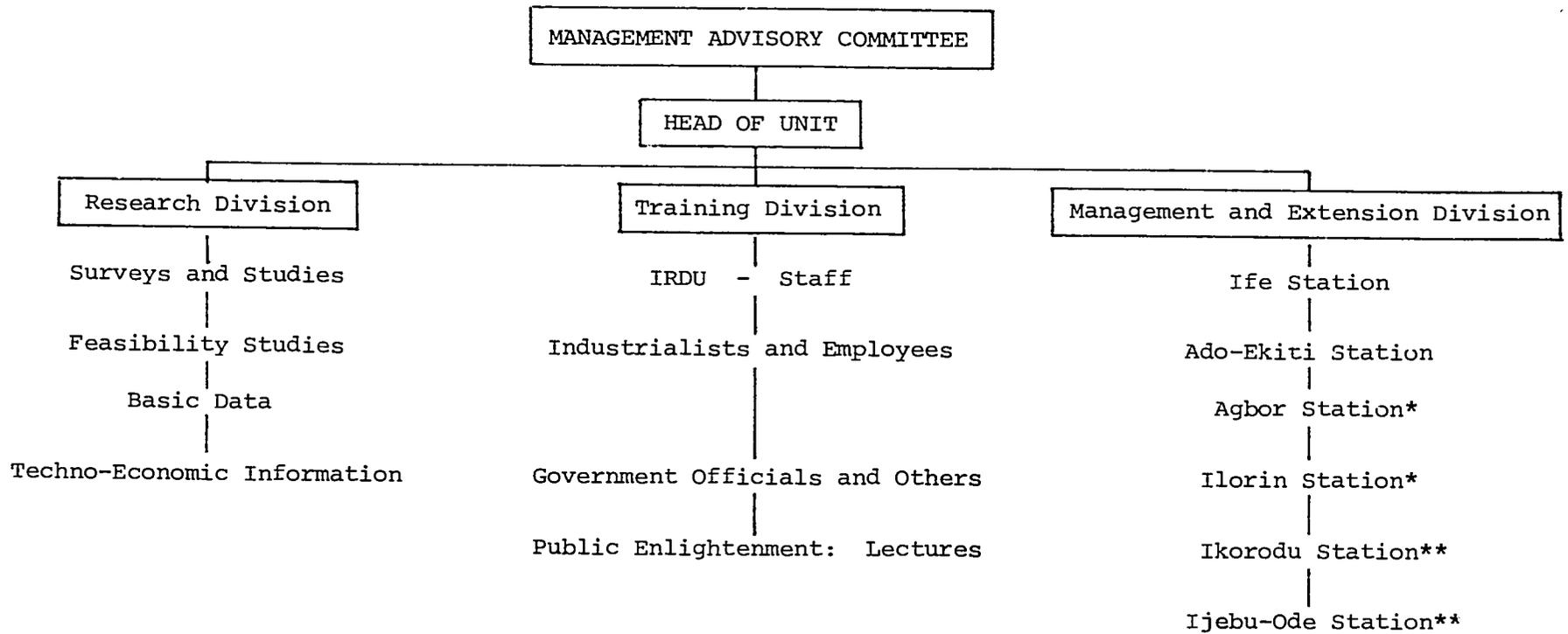
At the beginning of Year II, the IRDU organizational structure was as is shown in Figure 1.

The University of Ife designated Dr. S. A. Aluko, Head of the Department of Economics and Head of the Industrial Research and Development Unit, to serve as Counterpart Project Director. Mr. Nelson C. Wall was appointed to serve as Project Director for Georgia Tech.

Objective

In general, it is the objective of this project to develop a small-scale industries program at the University of Ife, Ile-Ife, Nigeria. Through this

Figure 1
 ORGANIZATION STRUCTURE OF THE INDUSTRIAL RESEARCH AND DEVELOPMENT UNIT
 (June 30, 1976)



* Proposed 1976-77

** Proposed 1977-78

program, IRDU would (1) assist in generating employment in Western Nigeria, particularly outside the main metropolitan centers, (2) provide technical assistance to small- and medium-scale industries in the selected areas, and (3) strengthen the relevancy of the educational program.

The project administration, under the contract with the grantee, then established two main areas of activity for the Georgia Institute of Technology staff which would assist in attaining the established objectives: (1) training selected IRDU staff members both in Nigeria and the U.S.A. and (2) providing on-site consultation by staff members of the International Programs Division (IPD) of the Economic Development Laboratory (since reorganized as the Office of International Programs). It was also established that the project staff would assist IRDU personnel in providing managerial, engineering, scientific, and technical assistance to selected small and medium-scale industries in the selected areas of western Nigeria.

Total Project Goals of the AID/ta-c-1062 Contract

At the start of the Small-Scale Industry Grant on January 23, 1974, the following total goals had been established by the Agency for International Development for the Georgia Tech grant, to be achieved over a period of four years:

The general objective of this contract is to generate employment in developing countries, particularly outside the metropolitan centers, by: (a) strengthening the capability of a selected institution in each country to provide effective technical assistance to local small industry, (b) demonstrating and documenting the impact of alternative approaches to technical assistance to small industry, and (c) infusing the governmental, industrial, and financial sectors of the local community selected to provide employment with the understanding of the techniques of generating jobs. The above objective will be carried out through the use of grants to selected Lesser Developed Country (LDC) organizations.

Once the total project goals are reached, the sponsor anticipates the following outputs:

1. Increased job opportunities in four countries.
2. Increased viability of indigenously owned enterprises.
3. Improved capability of four LDC institutions to serve small industry.
4. Tested methodologies for strengthening LDC institutions.

5. Evaluation reports on successes and failures in assisting small industry.

Program of Work

The major actions planned for the second grant year, as defined by Mr. Nelson C. Wall and IRDU staff, were as follows:

1. Continuation of Industrial Extension Service (July 1976-June 1977)
2. Establishment of Agbor Field Station (July-September 1976)
3. Establishment of Ilorin Field Station (September-December 1976)
4. Operation of the Field Stations -- reports (last week every month-- July 1976-June 1977)
5. Establishment of a Basic Data Centre (August 1976-June 1977)
6. Industrial training and education for small industrialists and their supervisors (October, November, and December 1976 and January, February, and March 1977)
7. Training course -- Federal Ministry (September 1976)
8. Staff training at Ife (November 1976 and February 1977)
9. Staff training abroad (September and November 1976 and March 1977)
10. Techno-economic survey of Ogun, Oyo and Ondo states (September 1976-March 1977)
11. Audiovisual documentation (August 1976-July 1977)
12. EDL staff on site:

N. C. Wall	July 13-August 7, 1976
E. Udunka	August 1-7, 1976
D. Lodge	March 13-26, 1977
Undesignated	July 10-22, 1977
E. Udunka	July 10-15, 1977

IRDU ACTIVITIES DURING YEAR II

Shortly after the end of the first year of implementation of this project, the Project Director was on site. Together with the counterpart staff, an annual report was prepared that year which was published by the Georgia Institute of Technology. At the same time the Project Plan for Year II (July 1976-June 1977) was prepared.

Unfortunately, soon thereafter, the counterpart institution went through an administrative change that resulted in a marked loss of interest in this project. During the reporting year, the counterpart failed to provide OIP with the necessary progress reports and activities in general apparently came to a near halt.

In view of these circumstances, the following recommendations were made to the sponsor on April 11, 1977, by the administration of the Office of International Programs, GIT:

When the original grant to the University of Ife was made on June 25, 1975, the Industrial Research Unit (IRU) was a dynamic unit, heavily involved in small industry research and development. Most active in formation and activities of the IRU were Dr. Sam Aluko and Dr. O. A. Oguntoye. The administration of the University replaced Dr. Aluko as head of Economics Department and the IRU in October 1976 and Dr. Oguntoye was relieved of his IRU duties at the same time. Subsequent communications to the new head of the IRU failed to elicit a response. A field trip by Don Lodge of Georgia Tech to the University of Ife in March 1977 revealed that the IRU was stagnant; appointments to field office vacancies were not being made; field office personnel, with one exception, were no longer providing management assistance to industries; in short, the grant activities were not being vigorously pursued. Communications in hand from both Drs. Aluko and Oguntoye verify that these conditions have existed for some months. To continue this grant beyond June 24, 1977, would be an obvious waste of funds. We recommend termination and that grant year-end unused funds (about \$7,000) be applied to more productive uses under the contract.

On May 24, 1977, the sponsor advised OIP that it concurred with the proposal not to extend the grant agreement and the Georgia Institute of Technology was directed to deobligate any funds not issued to the grantee at that time. The accounting office at the Georgia Institute of Technology then advised the sponsor that a total of \$11,434.87 was unspent from the 1976-1977 grant fund, and these monies were reallocated by the sponsor within the overall grant to the Georgia Institute of Technology.

To date, the UI has failed to present a final report for the grant year ending in June 1977. Therefore, the author of this report has not been able to present any of their achievements or accomplishments in this report.

GEORGIA INSTITUTE OF TECHNOLOGY
ACTIVITIES DURING PROGRAM YEAR II

Activities of the Georgia Institute of Technology for the program year were initiated with the arrival in Nigeria of Mr. Nelson C. Wall, Associate Director of the Office of International Programs, on July 14, 1976. He later was joined by Mrs. Edwina Udunka. Mr. Donald E. Lodge visited Nigeria in March 1977. Each of the staff members had been assigned a specific task within the total goals of the project. In this section, a brief summary of the individual activities is presented in chronological order.

July 14-August 6, 1976 (Mr. Nelson C. Wall)

The Project Director, Mr. Nelson C. Wall, in conjunction with Drs. Aluko and Oguntoye, planned the work program for Year II (see Figure 2) and prepared the annual report for Year I. While on site, Mr. Wall also supervised the audiovisual documentation, reviewed the project files and visited a number of industries which had received technical assistance during Year I.

August 1-6, 1976 (Mrs. Edwina Udunka)

Mrs. Udunka visited Nigeria to conduct the audiovisual documentation on this project. Black and white and colored stills and videotapes were taken.

March 13-19, 1977 (Mr. Donald E. Lodge)

Mr. Lodge's trip was for the purpose of reviewing the current status of IRDU's small-scale industry program so that GIT could decide whether to continue the SIG program for a third year. While in Nigeria, Mr. Lodge conferred with Professor Ekundare and his staff; he also visited the field offices at Ile-Ife and Ado-Ekiti, reviewed their technical assistance case files, and toured several plants which had received technical assistance. This was the last on-site contact during Year II.

UNIVERSITY OF SCIENCE AND TECHNOLOGY

PROGRAM PLANS FOR YEAR I

Background

The University of Science and Technology is located at Kumasi, in the central part of Ghana, 125 miles from the coast. A small university, it has an enrollment of some 2,000 students and an academic staff of about 260. The Technology Consultancy Centre was established in January 1972 to make available the expertise and resources of the University in the promotion of the industrial development of Ghana. Through the Centre, government agencies, existing industry, and individual entrepreneurs can draw upon the services of the University. Since its inception the Centre has sought to upgrade existing craft industries and to start new ones by developing new products, introducing improved ones, and utilizing locally produced materials in place of imported ones. Between 1972 and 1976, the Centre established a number of production units which have yielded useful commercial and industrial experience under local conditions. These production units, making steel bolts and nuts, bar soap, and textile products, have been effective in training a number of craftsmen.

The functions of the Centre are:

1. To offer consultancy services of a conventional, sponsored nature to government agencies, public corporations, and large industries.
2. To stimulate small-scale industry through free or low-cost consulting services, the establishment of production units by the Centre, and the provision of manufacturing equipment, personnel training, and other appropriate means.
3. To collaborate with the faculties to encourage research and development of an applied and practical nature aimed at solving problems of immediate importance to local industry.

The Technology Consultancy Centre (TCC), University of Science and Technology, Kumasi, has been a counterpart institution of the Georgia Institute of Technology since July 1975 under the latter's 211(d) grant from USAID. In the fall of 1975, TCC was one of several institutions considered by OIP for the fourth Small Industry Grant, which ultimately went to the University of the Philippines. However, TCC continued to indicate interest in the Small Industry Grant program. Therefore, when it became apparent to OIP, during late 1976

and early 1977, that the program in Nigeria might not be extended for another year, discussion concerning the Small Industry Grant (SIG) program was again initiated with TCC.

On May 24, 1977, the sponsor advised OIP that it concurred with OIP's recommendation that the Nigerian SIG not be extended and that the SIG instead be initiated with Ghana. Subsequently, the Technology Consultancy Centre presented a proposal to GIT entitled, "Proposal for the Implementation of the Small-Scale Industry Development Program, Year I." The program was implemented by a \$45,000 grant funded under an existing contract provided to the Georgia Institute of Technology by the Agency for International Development for the purpose. The terms of the grant permitted the grantee to utilize half of the grant funds for personnel, travel, materials and supplies, conferences, etc. The balance of the funds was to be used by the grantee to obtain training and consultation from U. S. technical assistance organizations.

The Georgia Institute of Technology subsequently contracted with the University of Science and Technology to provide training, consultation, and audio-visual documentation of the project.

The University of Science and Technology designated Dr. John W. Powell, Director, Technology Consultancy Centre, to serve as Counterpart Project Director. Mr. Nelson C. Wall, Associate Director, Office of International Programs, was appointed Project Director for Georgia Tech.

Objective

The general objective of this project is to systematically support the development of the TCC capacity to provide technical assistance to small-scale entrepreneurs and potential entrepreneurs and to develop items of appropriate rural technology that will meet the needs of the rural market and that can be produced by small-scale plants located in rural areas of Ghana.

Specific objectives of the proposal program include:

1. Economic studies of profitability and labor productivity in three industries--steel bolts manufacturing, broadloom weaving, and soap making at the intermediate level. Based on the pilot operations begun by TCC, these studies will utilize data from other plants in Ghana for comparative purposes. The purpose of these studies is to test the economic viability of these three technologies in order to determine whether West African labor can be sufficiently productive to compete with large-scale plants and with imported goods.

2. The development of village-level, human-powered technology, such as a cassava grater, palm kernel cracker, corn sheller, peanut sheller, suitable for production by small-scale rural industry.

3. A search for alternative indigenous oils which could be utilized in place of palm oil for making soap. These might include castor beans, physic nuts, neem, monkey cola nuts, moaha, and shea butter.

4. The development and testing of hardware for use in a small-scale sugar plant.

5. The development of the local metal founding industries, including the introduction of iron casting and the extension of the indigenous lost-wax brass casting industry.

Support by the Office of International Programs (OIP), in coordination with program planning of the TCC executive, will be primarily concerned with five specific support tasks for Year I:

1. To implement and complete a baseline study for the Ashanti region.

2. To establish optimum TCC professional staff training objectives to be subsequently provided in Atlanta by the Georgia Institute of Technology. It is anticipated that these training courses may include the following:

- a. Field office management for industrial extension services,
- b. Industrial data gathering and dissemination for rural users, and
- c. Feasibility analyses for extension office personnel.

3. To establish scheduled visits by OIP staff to the TCC facilities in support of technical assistance transfer activities. The activities are to include:

- a. General management consultancy,
- b. In-plant assistance,
- c. Feasibility analysis,
- d. Entrepreneurial promotion, and
- e. Development of appropriate rural technology.

4. To establish reporting procedures as required by the funding sponsor (USAID).

5. To support, as indicated, related research activities of the TCC through interaction with OIP staff and via continuing contact with the International

Development Data Center (IDDC) at OIP. This support will be particularly directed to:

- a. Studies of profitability and labor productivity,
- b. Appropriate technology,
- c. Alternative sources for scarce raw materials, such as palm oil for the production of soap, and
- d. Techniques for ferrous and nonferrous casting--the latter particularly by the lost-wax technique.

GEORGIA INSTITUTE OF TECHNOLOGY
ACTIVITIES DURING THE FIRST HALF OF YEAR I

July 10-30, 1977 (Mr. Donald E. Lodge)

The first interaction between GIT and TCC under this project was Mr. Lodge's visit to Ghana. While there, Mr. Lodge briefed the USAID Mission in Accra on the project's objectives for Year I, prepared a detailed project plan (see Figure 3), held lengthy discussions with each of the TCC staff members who head the major projects -- brass casting, weaving, soap making, the Crafts Center at Wonoo, and various crafts. He also supervised and participated in the audio-visual documentation for Year I.

July 17-23, 1977 (Mrs. Edwina Udunka)

Mrs. Udunka was in Ghana to conduct the audiovisual documentation for Year I.

August 15-December 31, 1977 (Mr. Richard Johnston)

During this period, literature searches were conducted in Atlanta and materials were furnished TCC concerning solar energy, a small-scale icemaker, small-scale foundries, small-scale sugar refineries, and tufted textile machinery. Detailed instructions were prepared concerning the design of a solar water heater for an orphanage now being constructed in Ghana.

September 6-11, 1977 (Dr. Ben Ntim)

Dr. Ntim represented TCC at a conference, "Issues Related to Small Industries Appropriate Technologies," which was held in Guatemala City under another AID contract. Ten LDCs were represented at this meeting, including participants from four institutions working with GIT under the Small Industry Grant program and six other OIP counterpart institutions.

September 11-14, 1977 (Dr. Ben Ntim)

Dr. Ntim visited OIP in Atlanta, Georgia, where he met with OIP staff and other high officials of GIT. He discussed the small-scale industry program at TCC, future cooperative efforts between the two institutions, and possible funded contract work for TCC and GIT in Ghana.

November 7-25, 1977 (Counterpart Training)

Mr. Sosthenes Buatsi, TCC Research Fellow, received two and one-half weeks of training in industrial extension at OIP offices in Atlanta and at the GIT industrial extension office in Augusta, Georgia. The training program, designed by the OIP staff, incorporated various training modes, including classroom activities, on-the-job situations, guidance and counseling, industrial tours, and general small industry exposure within the state of Georgia. Special attention was given to nonferrous casting processes and techniques. (See Appendix.)

December 4-9, 1977 (Mr. Phillip W. Potts)

Mr. Potts was in Ghana to initiate the Pyrolysis Demonstration Project in Ghana, a project funded by USAID under a separate contract. He worked with the TCC staff and other Ghanaian agency officials in preparing a project schedule and in arranging for the work to be accomplished, beginning in January 1978.

Appendix
INDUSTRIAL EXTENSION TRAINING PROGRAM
FOR MR. SOSTHENES BUATSI

INDUSTRIAL EXTENSION TRAINING PROGRAM FOR
MR. BUATSI, TCC, UST, KUMASI, GHANA
NOVEMBER 7 - 25, 1977

<u>Date</u>	<u>Time</u>	<u>Lecturer</u>	<u>Subject</u>	<u>Place</u>
11/7	9:00 am - 10:00 am	Hammond, R.	Welcome, OIP	1610
	10:00 am - 11:00 am	Johnston, R.	Program of work - plant visit requests of participants	1610
	1:00 pm - 2:00 pm	Johnston, R.	Tour OIP, Basic Data	C & S Bldg.
	2:00 pm - 4:00 pm	Johnston, R.	Tour Georgia Tech campus	Tech campus
11/8	9:00 am - 10:00 am	Lewis, J.	Needs of the Small and Medium Business	1610
	10:00 am - 11:00 am	Johnston, R.	Guidelines for Industrial Extension Personnel	1610
	1:00 pm - 2:00 pm	Hammond, R.	An Approach to Furnishing Industrial Extension Service to SS Industry	1610
	2:00 pm - 3:00 pm	Kaatz, J.	Sources of Credit for SS Industry in the LDC	1610
11/9	9:00 am - 10:00 am	Davis, L. H.	Industrial Extension at FESSC	1610
	10:00 am - 11:00 am	Potts, P.	Water Pump Manufacturing in Central America by Small-Scale Industry	1610
	2:00 pm - 4:00 pm	Moh, K.	Solar Stills and Solar Energy at Georgia Tech - tour of facilities	
11/10	9:00 am - 10:00 am	Johnston, R.	Role of Information in Industrial Extension	1610
	10:00 am - 11:00 am	Auciello, K.	Use of DIALOG in Industrial Extension Market Research	1610
	1:00 pm - 3:00 pm	Auciello, K.	Laboratory - Using DIALOG	
11/11	8:00 am - 4:00 pm	Johnston, R.	Drive to University of Georgia - meet Dr. Lancaster at 11:00 am	U. Ga.
		Lancaster, J.	Program Building in Extension Service	102 Barrow Hall
11/14	9:00 am - 12:00 noon	Junk, R.	Drive to Augusta Branch Office	Atlanta
	12:00 noon - 5:00 pm		Observe technical assistance work - Augusta Foundry	Augusta
11/15	All day		Observe technical assistance work	Augusta
11/16	All day		Observe technical assistance work	Augusta
11/17	All day		Observe technical assistance work	Augusta
11/18	9:00 am - 12:00 noon		Observe technical assistance work	Augusta
	12:00 noon - 5:00 pm		Return to Atlanta	Atlanta
11/21	All day	Johnston, R.	Visits to brass foundries	Atlanta
11/22	All day	Johnston, R.	Visits to brass foundries	Atlanta
11/23	All day	Johnston, R.	Visits to brass foundries	Peachtree City
11/24	THANKSGIVING HOLIDAY			
11/25	Individual research - to be determined			