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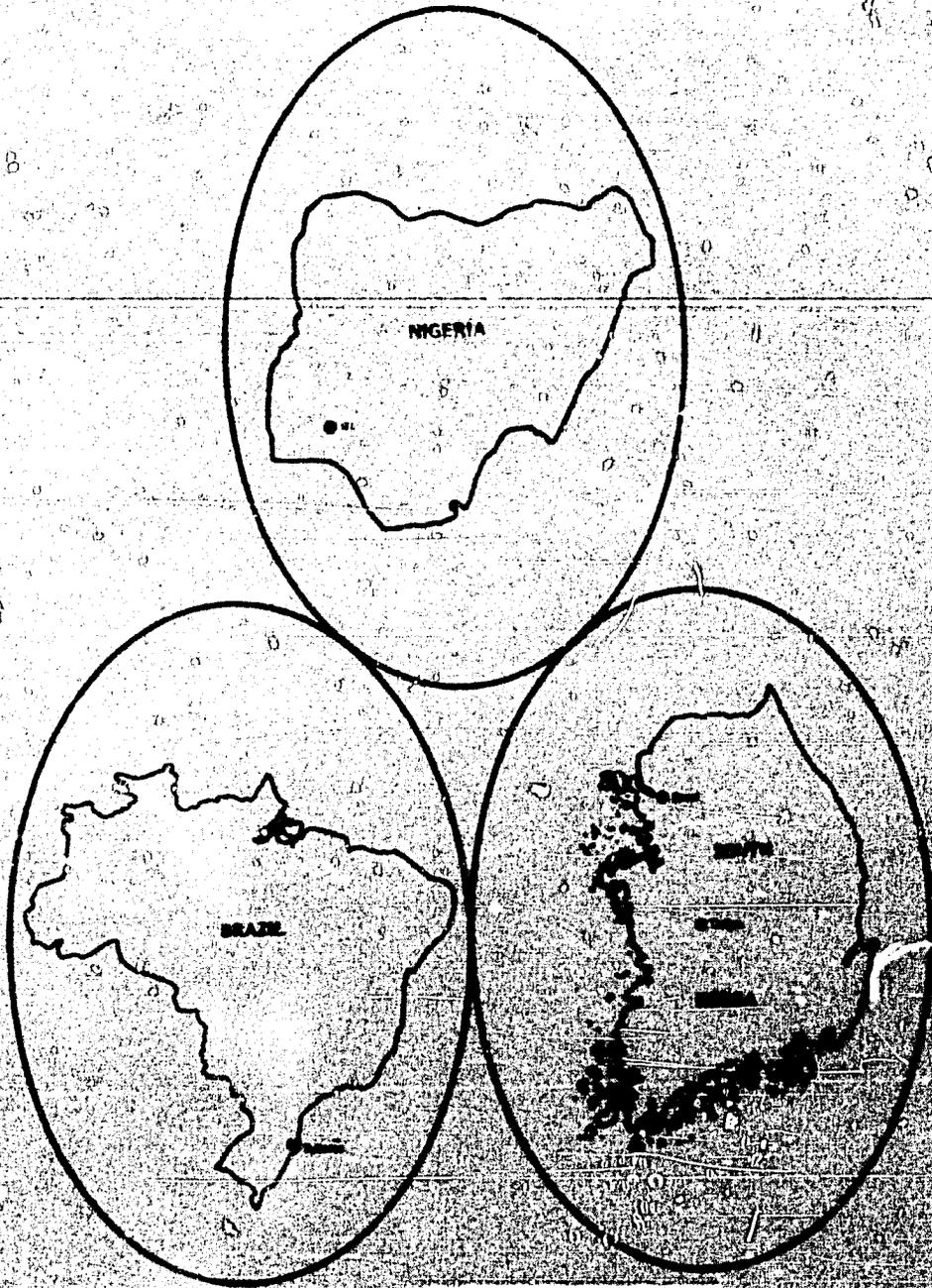
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**SMALL-SCALE INDUSTRY  
GRANT  
YEAR II**

PN-AAH-470



**STIMULATING THE GROWTH OF  
SMALL-SCALE INDUSTRY**

Grant Period: January 10, 1973 to January 5, 1976

A PROGRAM FUNDED BY THE U.S. ARMY AND  
AGRICULTURAL RESEARCH SERVICE

FINAL REPORT  
YEAR II

STIMULATING THE GROWTH OF  
SMALL-SCALE INDUSTRY

by  
Nelson C. Wall

Project A-1600  
Contract No. AID/ta-c-1062

Economic Development Laboratory  
ENGINEERING EXPERIMENT STATION  
Georgia Institute of Technology  
February 1976

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## INTRODUCTION

On January 23, 1974, the Agency for International Development (AID) funded for the first time Contract No. AID/ta-c-1062, through which the Economic Development Laboratory (EDL) of the Engineering Experiment Station at the Georgia Institute of Technology was assigned the responsibility of implementing a specific program of work in the area of stimulating growth of small-scale industry by providing assistance grants to counterpart institutions. The administrative portion of this AID contract was assigned the project number A-1600 by the Georgia Institute of Technology.

A second consecutive year was funded by the sponsor agency on January 31, 1975. This is the final report for Year II of this project, which has been implemented in two different regions of the world and initiated in a third geographic location. The three funded counterpart institutions for Year II were: Soong Jun University, Seoul, Korea; the Fundação Educacional do Sul de Santa Catarina, Tubarão, Brazil; and the University of Ife, Ile-Ife, Nigeria. The basic AID contract eventually may be funded to include up to four counterpart institutions.

In selecting the two original counterparts during Year I and the third counterpart in Year II, the following criteria were followed as indicated by the contract 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 staff.
7. Institution's potential for utilizing grant effectively.
8. Potential multiplier effects.
9. Host government commitments.

The results of the first-year program were published at the end of the grant year. For additional details, refer to Nelson C. Wall's report, Final Report--Stimulating the Growth of Small-Scale Industry (January 10, 1974, to

January 9, 1975), Industrial Development Division, Georgia Institute of Technology, Atlanta, Georgia, January 1975.

At the start of Year II, only two counterparts were funded--Soong Jun University and the Fundação Educacional do Sul de Santa Catarina--but midway through grant Year II, funds became available for a third counterpart. On the basis of the extensive survey that had been conducted prior to selecting the first two counterparts, the grantee recommended to the sponsor that the third counterpart institution be the University of Ife, which entered into the program on June 25, 1975.

All three institutions prepared and presented appropriate proposals which were established as three separate projects: Soong Jun University, B-426; Fundação Educacional do Sul de Santa Catarina, B-427; and University of Ife, B-455. Each counterpart was funded with a \$45,000 grant provided for by Project A-1600.

Due to the fact that the first year of the project in Nigeria (B-455) will not be completed until June 24, 1976, this report will not cover its activities in depth; they will be reported in full at the end of Year III. Some of the immediate results of this project during the second year for the three counterpart institutions are the following:

Project B-426--Soong Jun University (SJU), Korea

1. Conduct of an on-site survey to determine the initial effects (at the end of 21 months) of this program on 19 small-scale industries that had received technical assistance. A total of 576 jobs had been created (a 55% increase in employment) and some companies reported profit and productivity gains ranging from 20% to 200%.

2. Provision of on-site technical assistance to 11 different companies in the Seoul area and 17 in the Taejon area, for a total of 28 technical assistance cases during the year.

3. Establishment of five programs of quality control at the SJU Computer Center and provision of on-site training on quality control methods to interested persons.

4. Establishment of interinstitutional agreements between SJU and the following two Korean agencies:

The Industrial Advancement Administration (IAA) of the Ministry of Commerce and Industry

The National Federation of Medium Industries Cooperatives:

5. Awarding by SJU of a grant to the Director of the Integrated Development Center to study the socioeconomic impact of this program in Yong-In, Kyoungy Province.
6. Design and development of a simple production fixture for a small-scale industry and development of four other appropriate technology devices.
7. Provision of consulting services by the Economic Development Laboratory staff in Korea.
8. Preparation of an audiovisual documentation of the second-year program.
9. Establishment by the College of Engineering at SJU of the Department of Industrial Engineering.
10. Training at Georgia Tech's Economic Development Laboratory of three persons sponsored by SJU.
11. Presentation of training programs, lectures, and seminars in several cities of Korea.
12. Addition of three new professional persons to the ITI staff at SJU.

Project B-427--Fundação Educacional do Sul de Santa Catarina (FESSC), Tubarão, Brazil

1. Generation of 31 new industrial jobs and an increase in sales of 4.1 million cruzeiros in eight of the companies assisted in 1974.
2. Expansion of the Basic Data Center (CDB). The holdings of the CDB were doubled during the year.
3. Strengthening of both the Center for Management and Technical Assistance (CETEG) and the Center for Permanent Education (CEP).
4. Establishment of the Adaptive Technology Center (CATT).
5. Provision of technical assistance services to 37 local small-scale industries in 11 different municipalities of the state of Santa Catarina.
6. Preparation and publication of four feasibility studies and 14 new manufacturing opportunity studies.
7. Training of 46 staff members.
8. Establishment of an audiovisual section and acquisition of appropriate equipment.

9. Preparation of an audiovisual documentation of the second-year program.

10. Presentation of over 10 conferences, seminars, and workshops.

11. Participation in or contribution to a number of economic development meetings and conferences.

12. Preparation and publication of an in-depth study of Santa Catarina for the Ministry of the Interior. The five-volume, 477-page study is being used by the government in preparing its economic development plan for the next five years.

Project B-455--University of Ife (UI), Ile-Ife, Nigeria

As indicated before, this project is only six months old and the final report is not due until later in 1976. Some actions have taken place during this brief initial period:

1. Preparation of the Project Plan for 1975-76 (Year I).
2. Provision of on-site technical assistance by EDL staff.
3. Selection of sites for the first two field offices of the University of Ife (UI).
4. Scheduling of training programs in Atlanta for UI staff members.
5. Preparation of the first- and second-quarter reports.
6. Completion of baseline study for the "area of influence" being served by UI.
7. Scheduling of audiovisual documentation of the Year I activities.

The sections that follow in this Year II final report fully describe the background, objectives, and overall activities of the program. The report also highlights some of the results achieved by the project staff and the conclusions reached by the Project Director and staff.

## PROGRAM PLAN FOR YEAR II

### Background

The Economic Development Laboratory (EDL), formerly the Industrial Development Division of the Engineering Experiment Station at the Georgia Institute of Technology, a nonprofit organization, has been in existence since 1956. This internationally known unit of Georgia Tech now has an interdisciplinary staff of 75 persons and a broad and diversified program of economic development activities. It was created to provide the research and technical services required to accelerate the economic growth of the state of Georgia.

The Laboratory's broad program of industrial and economic development research, service, information, and training covers 10 major fields of activity: area development, community development, market analysis, industrial economics, management and technical assistance to industry, technical information services and technology transfer, manpower resources, basic data collection and dissemination, industrial and economic development training, and international development services. Special studies relating to natural resources, plant location, industrial land use, and industrial development program planning also are conducted.

In the spring of 1964, the then Industrial Development Division (IDD) became interested in the possibility of establishing an international program as a natural extension of its development work in process and previously carried out in port cities and adjacent coastal areas, particularly in Savannah and Brunswick, Georgia. In further investigating this idea, it became apparent that at the time there were few, if any, universities in this country which were actively engaged in training Latin American students in the basic principles and methodologies of industrial development.

Having recognized the need for and potentials of a sound program of industrial development for the emerging nations, especially in Latin America, the Economic Development Laboratory added to its professional staff bilingual personnel with extensive industrial experience in both Latin America and the United States.

The International Development Branch of the Economic Development Laboratory then began to draw on the experience gained by IDD during its earlier years through the broad-gauged industrial development programs operated in Georgia.

In 1972, after a series of successful AID-sponsored projects in Latin America, the Economic Development Laboratory was awarded an AID 211(d) grant.

It was under this grant (Project B-414) that EDL identified the need for stimulating the growth of small-scale industries in less-developed countries (LDC). In an attempt to respond to this identified need, EDL prepared a proposal under the title of "Stimulating Growth of Small-Scale Industry," which was submitted to AID for consideration on October 15, 1973. Early the following year (January 23, 1974), the proposal was accepted and funded by AID, and the administrative portion of the contract became Project A-1600 at the Georgia Institute of Technology.

The EDL staff had identified the general problems associated with the expansion and diversification of existing industries and the creation of new small industries in the following manner:

1. Lack of a system analysis approach to providing research, services, and information to industry.
2. Insufficient funding to expand industrial assistance activities.
3. Continuing need for training of more organizational staff personnel.
4. Lack of knowledge of pragmatic methodologies.
5. A deficient information base related to technical and management problems of small-scale industries.

The Economic Development Laboratory suggested a program that would attempt to cope with these problems. Some of the basic elements suggested in the proposal were:

1. An organization focus with clearly defined aims.
2. A well-trained and motivated staff.
3. An information base.
4. A technical assistance "delivery system."

When this program was funded by AID, Project A-1600 was created to serve as the administrative project, and \$45,000 grants were made to each of the counterpart institutions. Mr. Nelson C. Wall, Head of the International Development Branch, is serving as Project Director on A-1600.

The terms of the grants to counterpart institutions permitted the grantee to utilize half of the grant funds for personnel, travel, materials and

supplies, conferences, etc. The balance of the funds were to be used by the grantee to obtain training and consultation from U.S. technical assistance organizations.

The Georgia Institute of Technology and the Technology and Development Institute, East-West Center, subsequently contracted with the grantees to provide training, consultation, and audiovisual documentation of the projects.

The counterpart institutions currently funded (Year II) for the project may be briefly described as follows:

Soong Jun University. Soong Jun University was formed in 1970 when Soong Sil College united with Taejon College to form a new cooperative venture in the field of Christian education. Soong Sil College, in turn, was formed in Pyeng Yong (North Korea) in 1897 and reopened in Seoul in 1954, after being closed in 1938 during the Japanese occupation. Taejon Presbyterian College was founded in 1956 by the Southern Presbyterian Mission in the city of Taejon.

The main campus is located in Seoul near the large industrial area of Yeong Dung Po, which has a population of about 1.5 million inhabitants. The second campus at Taejon is near a smaller industrial area with a population of about 450,000 persons. In 1974, the government of Korea announced plans for the development of a new "science town" adjacent to the Taejon campus.

Immediately after Dr. Hahn Been Lee became President of Soong Jun University in March 1973, contacts were made by Mr. Ross W. Hammond, Director of the Economic Development Laboratory, with Dr. Lee. As a result of these contacts, both institutions entered into an agreement of mutual cooperation on July 30, 1973.

Fundação Educacional do Sul de Santa Catarina. The Fundação Educacional do Sul de Santa Catarina (FESSC) is an autonomous entity, as established by the Civil Code and national legislation under Decree Laws 200 and 900. It was constituted by Municipal Law Number 443-67 of October 18, 1967. It was recognized as being of utility to the Federal Government by Decree Number 70.680 of June 7, 1972.

FESSC has the following objectives: (1) develop middle and higher education as required by the labor market, which is to be done by formal and informal course work; (2) promote education and research related to the development of the state of Santa Catarina; and (3) engage leadership and population in the process of self-promotion to develop the local and regional areas.

From 1974 to 1975, enrollment in higher education (at present 10 programs) at FESSC increased from 1,200 to 2,000 persons, representing 32 municipalities. In 1975, there were over 3,000 students in nine programs of the middle education level, as part of the integrated professional-educational system of the city. Through its multidisciplinary staff, with 10 full-time technical persons, the Department of Research and Development (DRD) of FESSC by 1975 had been able to carry out 40 research projects and studies at the request of the public sector and private initiative, specifically in the areas of small and medium industries.

Since early 1972, FESSC and Georgia Tech's Economic Development Laboratory (EDL)--formerly the Industrial Development Division--had been jointly studying the possibilities of initiating a joint program of work. As a result of these early deliberations, both institutions officially entered into an agreement on March 11, 1972. 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 the area of South Santa Catarina. The agreement also provided for the cooperative promotion of programs, projects, and activities, with the understanding that other organizations may participate.

FESSC then presented a proposal to the Georgia Institute of Technology entitled "Program of Development for Small and Medium Industries." It was implemented by a grant funded under this contract, which was provided to the Georgia Institute of Technology by the Agency for International Development (AID) for this purpose.

In 1974, the Economic Development Laboratory, in cooperation with FESSC, initiated Year I of a program of small-scale industry development. This program was expanded in 1975 (Year II), again, under funding by the Agency for International Development.

University of Ife. The University of Ife was established by the Government of the Western State of Nigeria in October 1961. It is financed by the Federal Government and the Western State Government on a 40%-60% basis. It admitted its first students in October 1962. The Department of Economics in the Faculty of Social Sciences was one of the earliest departments to be set up in the university. The university's student enrollment has grown from 300 in 1962 to about 5,000 in the 1973-74 session. The Faculty of Social Sciences

has grown in number from 23 in 1962 to about 350 in 1973-74. The Department of Economics has the largest number of students in the Faculty of Social Sciences--215 out of a total of 250. The staff of the Department of Economics has increased from three in 1962 to 20 in the 1973-74 session.

The University of Ife is located in the heart of the agricultural area of the Western State. It is committed to a close identification with, and improvement of, the agricultural, commercial, industrial, and cultural activities of the population around it.

In its research commitments, therefore, the university places a great emphasis on relevant applied research, without sacrificing the necessary theoretical and fundamental research. It is in this spirit that the University of Ife has set up research programs on (1) population and manpower, (2) drugs, (3) customary laws, (4) coal and allied minerals, (5) human resources, (6) Kainji Dam problems, (7) agricultural extension and implementation, and (8) small and medium-scale industries. All these are action-oriented programs and are designed to bring community problems into day-to-day analysis and investigation by University of Ife scholars, on a teamwork basis.

The Industrial Research Unit was set up by the Department of Economics in August 1969, following 18 months of discussion among some staff members of the department. With a grant of N6,000 in 1969-70 from the University of Ife, the unit began to collect data on the small and medium-scale industries in the Western State through the efforts of the staff and the students of the Department of Economics during their vacations and on weekends. Since 1969, the unit has collected data on about 30,000 industrial units which range from the one-man blacksmith or tailor to the more sophisticated electronic industry employing up to 50 persons.

The survey has been undertaken in five of the 12 states in Nigeria--Western State, Mid-Western State, Lagos State (in the south), and Kwara and North-Eastern states (in the north). The unit has, as a result of its modest achievements, attracted grants from the Federal Government, four state governments, the Ford Foundation, and from some commercial banks and individual Nigerians. The unit has published a number of reports and journal articles, and has held seminars and training courses for small industrialists, and government officials who are charged with industrial development.

The unit has three principal objectives:

1. The continuance of information-gathering with a view to performing academic study, analysis, and interpretation of the data collected. The unit proposes to build up a data bank and materials for teaching and research.
2. Establishment of an effective industrial extension service to assist the existing industries to develop, grow, and modernize their operations and to create a linkage between them and the large industries, on a functional basis.
3. The encouragement of community industries through close liaison between the unit and the communities that have raised, or will raise, money to set up community enterprises.

In 1975, the Economic Development Laboratory, together with the University of Ife, initiated Year I of a Program of Small-Scale Industry Development.

#### Objectives

The continuing objectives of this program are best defined in the following manner:

1. To encourage selected developing country organizations to focus on employment generation through programs which accelerate the expansion of existing industry and the creation of new small industries.
2. To demonstrate and document the impact of alternative approaches to the stimulation of small industry.
3. To create in the appropriate governmental, industrial, and financial sectors of small industry an awareness of potentials and ways to maximize these potentials.

The three counterpart projects (B-426, B-427, and B-455) have their own specific objectives which coincide with the overall philosophy of the main objectives of this program. The project administration, under the contracts with the grantees, also established two main areas of involvement for the Economic Development Laboratory staff: (1) training of selected counterpart staff both on-site and in the U.S.A. and (2) provision of on-site consultative services to the different programs. It was further established that the EDL project staff would assist the counterpart personnel in providing managerial, engineering, scientific, and technical assistance to selected small and medium-size industries in the selected host countries. All of the established objectives for Year II were met during this reporting year.

### 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.

All of the established goals for Year II were met plus several additional accomplishments which were listed in the introduction and will be presented in further detail in the balance of this final report.

### Program of Work

The role of the Economic Development Laboratory is to administer the project, providing guidance to the participating institutions in designing and developing their programs, providing advice and counsel as required, suggesting alternative options for their consideration, monitoring the implementation, and in general providing the necessary leadership to assure the desired positive results mentioned in the project goals.

The EDL Project Director then generated for Year II a suggested program for each counterpart institution. These suggested programs were modified by

the Counterpart Project Directors to meet their own needs and objectives. In an attempt to establish criteria which would allow some degree of comparison among all projects, the suggested program had the following major recommended activities:

1. Counterpart Organization Functional Activities

- a. Organization. The counterpart will administratively designate a unit to mount a program of research, service, training, and technical information for the small industry sector. Staff personnel will design the program based on the organization's goals and motivations.
- b. Facilities and Staff. The counterpart will provide adequate office, equipment, and other resources to the designated units to permit its staff to function effectively. Staff personnel who have appropriate backgrounds and who, with appropriate training, can implement the program of assistance will be assigned to the unit.
- c. Technology Transfer. An information collection will be established by the counterpart where it does not exist to permit the staff to conduct research on industrial problems, needs, processes, and products, especially as they related to small-scale industry, and to disseminate technical information.
- d. Delivery System. The counterpart will design and implement a procedure to permit direct contact with small industries and entrepreneurs for the purpose of ascertaining their needs and problems and for the provision of staff assistance and research in the solution of problems, both management and technical in nature. This industrial extension activity will have as its aim the expansion and diversification of existing and new industry.
- e. Education and Training. The counterpart will design and deliver appropriate training programs related to small-scale industry. Educational programs related to industrialization will be encouraged.

2. Independent Continuing Activities. The counterpart will design, in cooperation with the EDL project director, a specific program of continuing

activities which should include, but not be limited to, the following major subject areas:

- a. Research Activities. For example, this could be in the areas of: (1) preparation of case histories; (2) approaches leading to employment generation; (3) analysis, evaluation, and development of new industrialization technique if appropriate, products, and processes. Other research activities also will be considered.
- b. Industrial Extension Activities. This should be a pragmatic type of program related directly to serving the new and existing small-scale industries. Sample activities would be: (1) industrial problem-solving; (2) advice to and consultation with industry; (3) survey of small-scale industry problems and needs.
- c. Training Activities. The counterpart institution should consider the possibility of providing on-site training to persons in industry. This training may be to management, supervisors, or employees, as needed. Some sample subjects to be considered are: (1) market analysis, (2) small industry operation, and (3) industrial processes.
- d. Educational Activities. This is an option, but if the counterpart is an educational institution, it is highly recommended.
- e. Training and Consultation. This task will be the responsibility of the EDL staff. As needed, selected counterpart institution staff will receive appropriate training at the EDL headquarters in Atlanta, Georgia. The training may take various forms as appropriate, including classroom work, on-the-job training, consulting and advisory service, plant tours, and other pertinent topics.

Using the established program guideline, the individual counterpart institutions then developed their corresponding programs for this year. The individual programs are summarized as follows:

B-426--Soong Jun University (SJU). For their second year of activity, the following program was designed:

1. Organization. Several organizations within SJU were concerned with the implementation of this program. These organizations were the Integrated Development Center (IDC), the Industrial Technical Institute (ITI), and the Regional Development Institute (RDI). All programs were to be oriented to serving the small and medium-size industries in the selected municipalities.

2. Staff and Physical Plant. Once the basic needs of the different units had been identified, appropriate office space, equipment, and manpower were allocated to assure basic logistical support to this project. Three new faculty members joined the Industrial Technical Institute staff, one each from the Electrical, Chemical, and Industrial Engineering Departments.

3. Program Areas. The SJU Project Director and his counterpart at EDL jointly designed a viable program to assure the implementation of the following activities during the second program year:

a. Small-Scale Industry Information Center (SSIIC). This center was established during Year I of the program and had the responsibility of collecting and generating the basic data relevant to the project. The initial collection of information would focus on management and technical data appropriate to small-scale industries.

For Year II, it was planned that increased emphasis would be given to the following areas of work:

- (1) Collection, classification, and dissemination of pragmatic, up-to-date information on Korean and international material important to the small-scale industries.
- (2) Promotion of wider cooperation and coordination between small-scale industries, the community, and SJU.
- (3) Additional on-site consultation and assistance from the EDL senior staff as needed.
- (4) Implementation of the guidelines established during Year I for the operation of the SSIIC.

b. Industrial Training and Education. The successful short-term training program for the SJU staff that was carried out during Year I was to be followed by others during the second year. The programs would be offered to small industry managers, engineers, and to entrepreneurs in general.

- (1) Presentation of educational programs (short-term) during the year, with consultants assisting in on-site programs. The following areas were considered:
  - o Management seminar (e.g., bill collection, taxation, sales, promotion, work improvement, quality control)
  - o Training for students who are to be involved in local industry technical assistance services
  - o Entrepreneur promotion (e.g., motivation, proposal preparation, accounting, sales)

(2) Continuation of the audiovisual case history started in Year I.

(3) Additional staff training in accordance with needs.

c. University Training and Education. At the end of Year I, Soong Jun University was starting to get some of the feedback resulting from the activities of the year. An Industrial Engineering Program was designed and was approved by the Ministry of Education in 1974. SJU made plans to offer the new program in Industrial Engineering by the fall of 1975.

The following additional activities were scheduled for the second year:

(1) Continued preparation of classroom material and course work for the Industrial Engineering Department, to be used by the fall of 1975.

(2) Continued review and reform of the university curriculum.

(3) Identification of specific effects on university educational policies and practices as a result of these industry-oriented programs.

d. Industrial Extension and Research Activities. At the end of the first year, policies and methods had been established which permitted SJU to link up with existing small industries in the target areas and numerous technical assistance activities had been carried out. The plans for Year II considered the following activities:

(1) Pragmatic technical assistance by SJU staff members in the following four major areas:

o Mechanical Engineering: Four or five companies at Yeong Dung Po Industrial Complex and three to five small companies in Kyung Ki Province were to be selected for concentrated service. Emphasis was to be given to quality control, simple tool design, and general training.

o Electrical Engineering: Three to five small companies in Kyung Ki Province of the Seoul area would be selected for diagnosis and service. Emphasis was to be given to electrical economy, safety, and general training.

o Chemical: Three small companies would be selected for concentrated effort in the Taejon area.

o Textile: Two small companies in the Taejon area would be selected.

- (2) Managerial technical assistance also would be provided during this year, with emphasis on the following activities:
- o Studies on improving market strategy and financial strategy.
  - o Recommendations for better inventory control for effective productivity.
  - o Studies on better accounting methods available for small industries.
  - o Time and motion studies and methods work.
  - o Feasibility studies for establishing new small industries.
  - o Cost accounting and other control studies for small industry.

B-427--Fundação Educacional do Sul de Santa Catarina (FESSC)

1. Organization. The original organization at FESSC has been modified, and specific responsibilities were established for the new units so that they would start implementing the different assignments identified by the program. The newest unit, the Adaptive Technology Center (CATT), was to receive special attention, with most of the staff training to be focused on the professional staff of the CATT. All programs were to be oriented in such a manner as to serve the small and medium industries in the selected municipalities.

2. Staff and Physical Plant. Based on the identified needs of the different units in the program, appropriate office space and equipment were allocated to assure the necessary logistical support to the project. The acquisition of audiovisual equipment also was considered of the highest priority. Staff needs were still uppermost, and candidates were selected to be considered during the year. The candidates were selected on the basis of interest in the program, capability and motivation to carry out the requested task.

3. Program Areas. The EDL Project Director and his counterpart at FESSC jointly designed a program to support the implementation of the following activities during Year II:

a. Basic Data Center (CDB). This unit had suffered heavy losses during the March 1974 flood and many of the publications had been damaged or destroyed.<sup>1/</sup>

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<sup>1/</sup> For details, refer to Jose Muller's and Nelson C. Wall's report, Final Report--Fundação Educacional do Sul de Santa Catarina (FESSC), Small-Scale Industry Grant (January 10, 1974, to January 9, 1975), Industrial Development Division, Georgia Institute of Technology, Atlanta, Georgia, January 1975.

During Year II, emphasis was to be given to the following areas of work within the CDB:

- (1) Complete cleanup of the damages caused by the flood.
- (2) Collection, classification, and dissemination of pragmatic, up-to-date information on Brazilian and international material relevant to small-scale industries.
- (3) Additional on-site consultation and assistance from the EDL senior staff as needed.
- (4) Implementation of the guidelines established during Year I for the operation of the CDB.

b. Center for Management and Technical Assistance (CETEG). As part of the first-year program, this center was established during the summer of 1974. During Year I, CETEG was able to establish the operational policy for the center and eight small-scale industries were serviced. The March 1974 flood created an emergency which necessitated assignment of all staff members to assist in the reconstruction of the many small-scale industries that had been damaged.

For Year II, the following activities were planned:

- (1) Continue to provide technical assistance to eight small-scale industries originally selected and add up to 10 more during the year.
- (2) Prepare and complete two feasibility studies during the period.
- (3) Train students who are to be involved with CETEG staff in carrying out technical assistance services.
- (4) Prepare management guidelines for small-scale industries.
- (5) Continue the audiovisual case history started in Year I.

c. Center for Permanent Education (CEP). This was the third new center created during Year I. Its purpose is to provide adult continuing education services in Santa Catarina, for which there is a great need. In spite of the damages caused by the flood, this center continued its operation and has been able to establish close links with all the "human resources development" groups of the area, such as:

Fundação Legião Brasileira de Assistência (FLBA)  
Serviço Nacional de Aprendizagem Industrial (SENAI)  
Programa Intensivo de Preparação de Mão de Obra (PIPMO)  
Fundação Gaúcha do Trabalho (EGT)

For Year II, the CEP planned to present about 30 programs to an anticipated audience of 1,000 participants. The programs were to be designed to respond to the educational needs of the indigenous manpower.

d. Adaptive Technology Center (CATT). Although this fourth center was established during Year I, it had been very slow in starting, and just before the end of the first year, the FESSC staff engineer responsible for the center had left FESSC. During Year II, the new manager of the center, Mr. Adalgiso Domingues, would be trained at EDL Atlanta and the center would be reactivated. This unit would have the responsibility of providing technical assistance and adapting "foreign" technologies to the local needs of small-scale industries.

e. Industrial Training and Education. A specific short-term training program had been initiated during the last week of Year I. This program was to be continued into Year II and the three selected member of the FESSC professional staff would complete their training at EDL headquarters in Atlanta during Year II.

FESSC staff, in the meantime, would offer industrial training programs to workers in small-scale industries and the general public as needed. These programs would be presented in the target areas and also at FESSC headquarters in Tubarão.

B-455--University of Ife (UI). As indicated earlier in this report, the University of Ife (UI) entered into the program late in June 1975 and the program of work shown here will not be completed until mid-1976. At the present time, the first two quarters of Year I have been implemented.

1. Organization. The Industrial Research and Development Unit (IRDU) of UI is the counterpart unit responsible for this project. Organizational changes may be considered at a later date, after the program has been in operation for a period of one year. Specific responsibilities for this program were established within the unit.

2. Staff and Physical Plant. Based on the identified needs, appropriate office space and equipment were allocated to the project. Later in the year, two additional extension offices were to be established. Staffing needs are the most pressing, and candidates will be selected during the year to fill the necessary positions.

3. Program Areas. A program was jointly established to support the implementation of the following activities:

a. Small-Scale Industry Information Center. Training on appropriate information center personnel of IRDU will be conducted in Atlanta and on-site as needed. Guidance will be provided in developing the collection, establishing procedures, etc. Basic information available at EDL will be made available to IRDU. This information center will be especially needed as an information backup for the field office personnel.

b. Industrial Extension and Research Activities. Training will be provided in appropriate aspects of industrial extension and research activities to IRDU personnel, both in Atlanta and on-site. On-site consultation will be provided to assist in the expansion and diversification of existing small-scale industries and to help in the creation of new small-scale enterprises.

c. Industrial Training and Education. Specific short training programs will be devised for IRDU faculty to better equip them to deal with the real-world problems of small-scale industry. In particular, training in the preparation of project feasibility studies and market analyses will be provided under the proposal. The training will take various forms as appropriate, including classroom work, on-the-job training, consulting and advising, plant tours, contacts with technical information sources, etc.

d. Technical Assistance. In particular, industrial engineering expertise will be made available to the IRDU staff, as required.

e. Audiovisual Documentation. An audiovisual record of project activities will be made and slides, photographs, and videotapes will be provided to the University of Ife for use in training, seminar presentations, and contract and grant solicitation.

Two of the above counterpart programs are described in full in the following reports:

Yoon Bae Ouh and Nelson C. Wall, Final Report, Year II--Soong Jun University, Small-Scale Industry Grant, Georgia Institute of Technology, Project B-426 Report, Atlanta, Georgia, 1976.

Jose Muller and Nelson C. Wall, Final Report, Year II--Fundação Educacional do Sul de Santa Catarina, Small-Scale Industry Grant, Georgia Institute of Technology, Project B-427 Report, Atlanta, Georgia, 1976.

Use of Grant Funds

Each of the three grantees was funded for a grant year in the amount of \$45,000. Disbursement of these funds are shown as Tables 1, 2, and 3, respectively for the three grants.

Table 1  
DISBURSEMENT OF GRANT FUNDS  
SOONG JUN UNIVERSITY  
Year II

<u>Expenditures</u>	<u>Sources of Funds</u>			<u>Totals</u>
	<u>AID</u>	<u>Ind.-Univ. Foundation<sup>1/</sup></u>	<u>SJU<sup>2/</sup></u>	
Direct salaries, wages	\$13,500	\$5,000	-	\$18,500
Travel				
International \$4,000	4,000	-	-	4,000
Local \$2,750	2,000	750	-	2,750
Materials/supplies	2,000	-	-	2,000
Conferences/seminars	1,000	-	-	1,000
Contracted services (GIT/IDC)				
SJU personnel training	10,500	-	-	10,500
EDL consulting	10,000	-	-	10,000
TDI (E-W Center)				
Av. case work	2,000	-	-	2,000
SJU indirect expenses				
General overhead	-	-	\$ 8,000	8,000
Technical service support	-	-	3,000	3,000
Totals	\$45,000	\$5,750	\$11,000	\$61,750

<sup>1/</sup>The Industry-University Cooperation Foundation is a newly established (1974) organization in Korea designed to promote mutual cooperation from which SJU applied for and received a grant.

<sup>2/</sup>Normal overhead allowance plus depreciation allowance for use of university labs and workshops.

Table 2  
DISBURSEMENT OF GRANT FUNDS  
FUNDAÇÃO EDUCACIONAL DO SUL DE SANTA CATARINA  
Year II

Programmed Activities	Assigned Funds			
	GIT <sup>1/</sup>		Cost Sharing	Total
	FESSC	GIT	FESSC <sup>2/</sup>	
1. CETEG				
Salaries:	1 Senior Mgr.	\$ 9,000		
	1 Prof. Tech.		\$13,000	
	1 Adm. Asst.	1,200		
Research	Local trips	2,000		
Preparation of Profiles, Cons. Asst., Train.	Training trips to USA	4,000		
Tech. Asst. Staff			\$10,000	
2. Basic Data Center				
Salaries	1 Jr. Mgr.	5,800		
Training	Training and trips		10,500	
Materials and Equipment	Vehicle Equipment and mat.	500	3,150	
	Consultants on audio-visuals (TDI-E-W-Ctr.)		2,000	
Inst. of Cons. and Maint. Mat			2,000	
	Overhead 15%		4,350	
Totals		\$22,500	\$22,500	\$67,500

<sup>1/</sup> From AID under Small Industry Grant.

<sup>2/</sup> As contribution to success of the program.

<sup>3/</sup> TDI at the East-West Center will contribute the time of their audio-visual specialist and the needed equipment.

Table 3  
 BUDGETED DISBURSEMENT OF GRANT FUNDS  
 UNIVERSITY OF IFE  
 Year I

<u>Expenditures</u>	<u>Sources of Funds</u>			<u>Total</u>
	<u>AID</u>	<u>Univ. of Ife</u>	<u>Poss. Out-side Grant Fed. Gov. State</u>	
Salary of research and teaching staff of IRDU Ife (equivalent to seven full-time staff at an average of \$3,500 each)		\$24,500	-	\$ 24,500
Office equipment, maintenance at Ife	-	10,000	-	10,000
Salary of extension workers at average of \$3,000 plus secretary	\$10,000	6,000	\$ 2,000	18,000
Field equipment and travel of extension workers	5,000	4,000	1,000	10,000
Vehicles for field staff and other equipment	3,000	3,000	1,000	7,000
Rent of field station	2,000	-	-	2,000
Seminars and training courses	2,500	3,000	1,000	6,500
Training and visiting in U.S.A. for Ife staff	-	5,000	5,000	10,000
Traveling for EDL staff, U.S.A.-Nigeria-U.S.A. and maintenance costs in Nigeria	8,000	-	-	8,000
Training and consulting by Georgia technology	10,500	-	-	10,500
Housing accommodation for EDL visiting staff	2,000	-	-	2,000
Audiovisual--East-West Center	2,000	-	-	2,000
<b>Total</b>	<b>\$45,000</b>	<b>\$55,500</b>	<b>\$10,000</b>	<b>\$110,500</b>

## GENERAL ACTIVITIES DURING PROGRAM YEAR II

Earlier in this report, it was indicated that Project A-1600 was established by the Georgia Institute of Technology as the administration project and all implementation would be performed under the companion projects B-426, B-427, and B-455. In view of this, it was considered necessary by the Project Director to structure the report in such a manner as to allow this section to highlight some of the specific activities of the participating institutions.

### Soong Jun University (SJU)

As reported in the end-of-the-year report for Project B-426, the staff at SJU accomplished many tasks, among which the following are presented in summary form:

1. Small-Scale Industry Information Center (SSIIC). This unit dedicated to the collection and classification of economic development data has not met the original expectations. At present, the SSIIC is scheduled to be re-assigned to the Engineering Library, with hopes that it will become functional and viable to the overall project. During the year, EDL staff specialists were assigned to this unit in an attempt to enhance the total operations of the center, but, unfortunately, it appears that the recommendations made by the EDL staff specialists were not implemented.

2. Industrial Training and Education. A five-week training program was presented at the EDL Headquarters in Atlanta, Georgia, for three persons sponsored by SJU. Of the three participants, two were members of the SJU professional staff and one was a local industrialist. The three participants were:

Prof. Won-Hoe Koo	Head, Chemistry Department, SJU, Taejon
Prof. Young-Ho Lim	Assistant Head, Mechanical Engineering, SJU, Seoul
Mr. Young-Ho Chae	President of the Sam-Ho Machine Industries Company

A related activity was establishment of five programs of quality control for the IBM 1130 at the Computer Center in Seoul. These programs were established by Dr. Kenneth Stephens of the EDL staff while on-site at SJU. The counterpart staff, assisted by Dr. Stephens, also presented a series of seminars, sponsored by the Korean Chamber of Commerce, on quality control.

3. Audiovisual Documentation. The counterpart institution contracted with the East-West Center, Hawaii, for an audiovisual documentary of Year II activities. Mr. Fred Burian of the East-West Center, assisted by Mrs. Edwina Udunka of EDL, went to Korea for one week and accomplished this task. The SJU staff handled all the arrangements for the taping sequence and other logistical matters.

4. University Training and Education. As a result of actions initiated during Year I, the appropriate officials in Korea authorized SJU to establish a Department of Industrial Engineering within the College of Engineering. During the year, the academic staff has been expanded by the addition of one more professional person, Mr. Pyung-Kyu Choi, an industrial engineer.

As a secondary objective, the Year II program attempted to identify specifically the socioeconomic impact that these industry-oriented programs had on the population. As a result of this interest, Dr. Y. B. Ouh, Director of the Integrated Development Center, was funded by SJU to conduct a survey and determine this impact in the Kyoungy Province.

5. Industrial Extension and Research Activities. Without doubt, this was the main activity for Year II. In an all-out effort, the SJU staff was able to provide technical assistance to 28 industries, of which 11 were in Seoul and 17 in Taejon. According to the SJU records, over 139 visits were made to these 28 industries during the year, or an average of about five visits per company, in an attempt to provide the necessary assistance. This is far better than the previous year, when only 18 companies were serviced.

In an attempt to quantify the results of the technical assistance service to small-scale industries, 19 companies that had been serviced were surveyed. They reported increasing employment by 576 jobs (55%) and registering productivity or profit gains ranging from 20% to 200%.

6. Appropriate Technology. The Year II program specifically stressed the area of appropriate technology. In the past two years, SJU staff members have developed four devices which are considered by them to be appropriate to the Korean culture:

- o A low-cost tensile strength tester
- o A sizing or shaving die for truing up metal rod cross sections
- o A low-cost immersion pyrometer
- o A wheeled version of the "chegae" or Korean backpack

Figure 1, on the following page, presented the total Project Plan for Year II.

Fundação Educacional do Sul de Santa Catarina (FESSC)

The corresponding end-of-the-year report for this project (B-427) clearly establishes the many accomplishments of the highly motivated and dedicated staff of the institution. The following summary briefly highlights some of the activities sponsored by the program:

1. Basic Data Center (CDB). Although the CDB was practically destroyed in 1974 as a result of the disastrous flooding of the Tubarão River, the CDB has been reconstructed. During the year, an EDL staff specialist was assigned to assist the CDB, and following his visit, all the recommendations were rapidly implemented. As a result, the CDB has doubled its holdings.

In addition, the joint project staff conducted a survey of information sources in five major cities of Brazil--Tubarão, Porto Alegre, Florianópolis, São Paulo, and Rio de Janeiro. During the year, over 600 documents were received, classified, cataloged, coded, and entered into the FESSC collection. As part of this programmed growth plan, the CDB will be purchasing microfiche readers (external funds) next year.

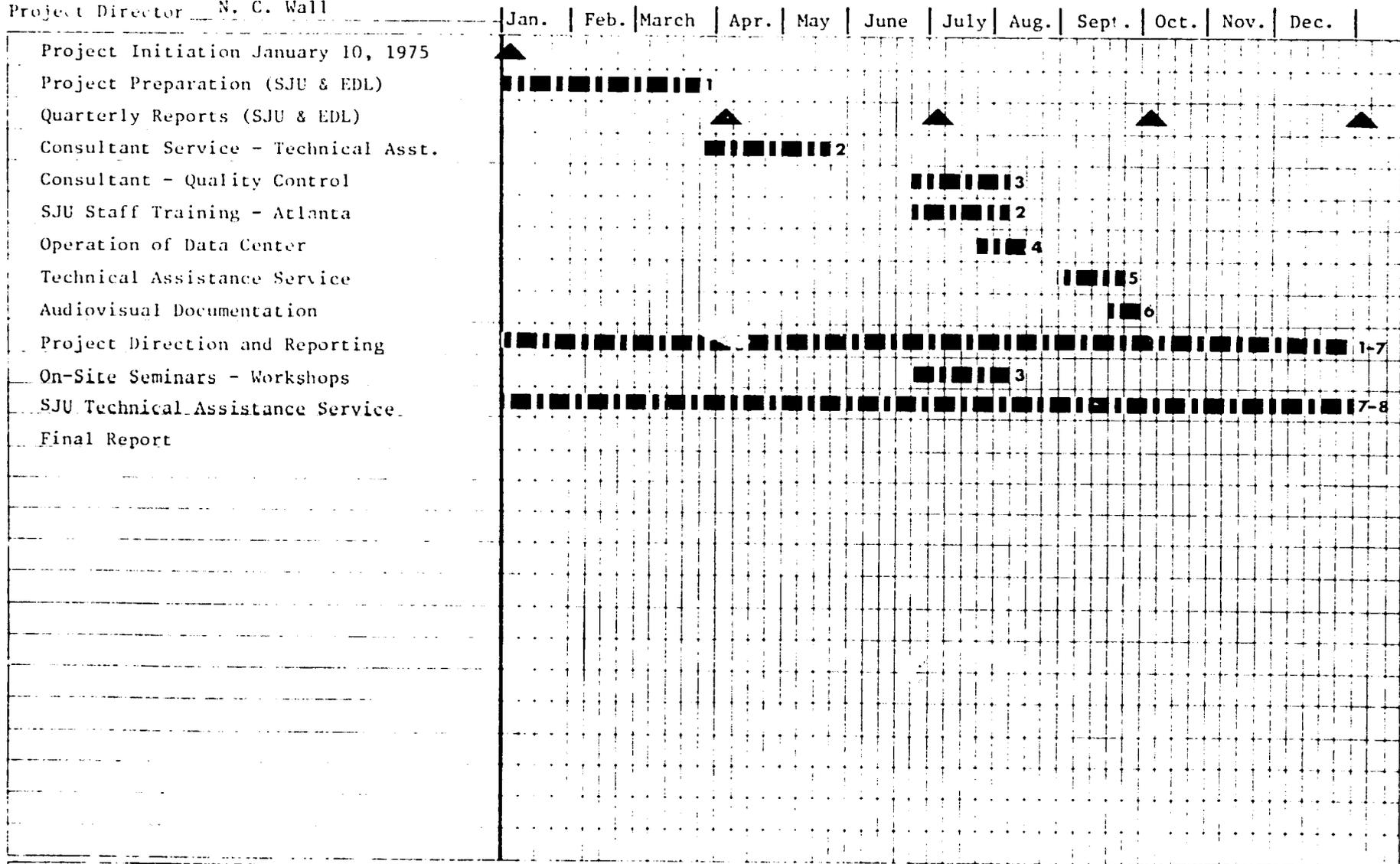
2. Center for Management and Technical Assistance (CETEG). This has been a successful operation since the start of Year I. The professional staff of CETEG has moved quickly into the area of provision of technical assistance to local industries. This year, 37 small-scale industries were serviced by the program in 11 municipalities within the state of Santa Catarina, which has 9,500 square kilometers.

Following the continuous evaluation system established by the Project Director at the start of this program, a survey was conducted of eight industries that were recipients of technical assistance services during Year I. These eight small-scale indigenous industries reported that 31 new jobs had been generated and sales had been increased by 4.1 million cruzeiros (112% gain).

During the program year, the CETEG staff also researched and published four feasibility studies--Industria de Maquina Agricola, Industria de Móveis, Industria de Confecções and Incomal--Industria e Comercio de Madeiras, Ltd. The last study, Incomal, has been implemented by a local investor; the plant was located in Mirim, municipality of Imbituba, creating 47 new jobs.

Project No. B-426  
 Project Title SIG-SJU-Year II  
 Project Director N. C. Wall

FIGURE 1  
**PROJECT PLAN**



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LEGEND	Staff	1	2	3	4	5	6	7	8
		N. C. Wall	B. James	K. Stephens	R. Johnston	L. Eden	Burian-Udunka	Y. Ouh	SJU Staff

The CETEG staff also was able to research, prepare, and publish 14 new manufacturing opportunity studies during the year. The studies, some of which are being considered by entrepreneurs, are on a wide variety of small-scale industries appropriate to southern Brazil.

Four other major documents were published by CETEG, as a result of specific studies conducted by the staff during the year. These published reports were as follows: (a) a study of human resources in the AMSESC area (125 pages); (b) an in-depth look at the economy, social problems, industry, and resources of Santa Catarina (five volumes, 477 pages); (c) a study of the appropriate methodology for the provision of technical assistance to small-scale industries in that area of Brazil (60 pages); and (d) a research project to establish the feasibility of creating a "technology center" in Santa Catarina.

3. Center for Permanent Education (CEP). Expanding the very successful training programs offered by CEP during Year I, the accomplishments this year were far more exciting. A series of in-house training programs were conducted for FESSC staff members, and 46 persons were able to successfully complete the program requirements. The EDL on-site staff participated heavily in these training sessions.

4. Industrial Training and Education. As a separate project under the CEP, special industrial training courses were offered to the local manpower interested in learning or improving a given skill. A total of 31 training programs were offered this year and 512 persons successfully completed the program requirements.

5. Audiovisual Documentation. An objective of the Year II program was the establishment of an audiovisual section within FESSC. This was accomplished, and now FESSC has its own camera and taping equipment for the taping of audiovisual reports. The counterpart contracted with the East-West Center, Hawaii, to tape the Year II audiovisual documentary, and this was also accomplished.

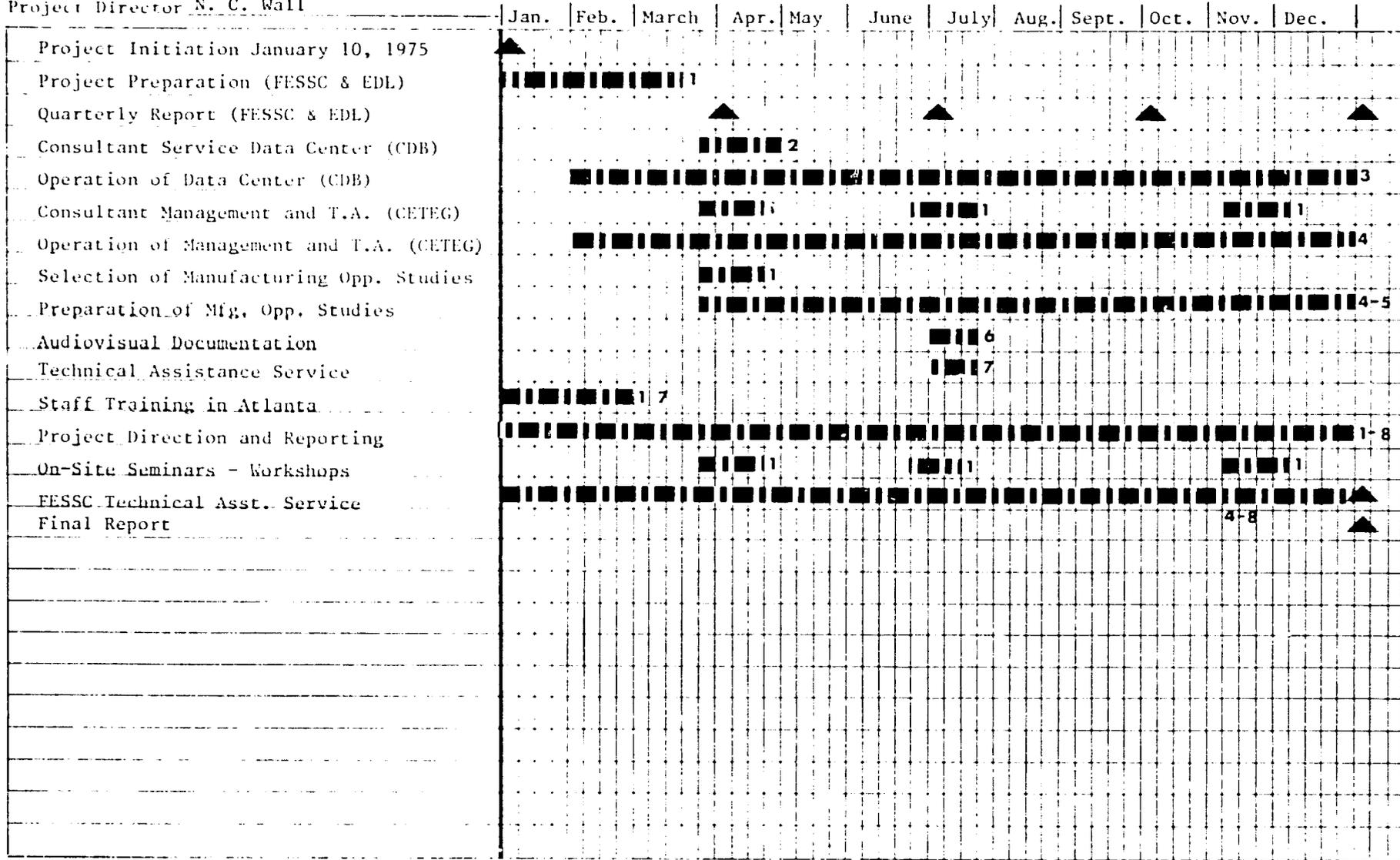
Figure 2, on the following page, is the Project Plan for Year II at FESSC.

#### University of Ife (UI)

Since Project B-455 is only halfway into the first year of implementation at this time, it is not possible to refer to any definite accomplishments

FIGURE 2  
PROJECT PLAN

Project No. B-427  
Project Title SIG-FESSC-Year II  
Project Director N. C. Wall



LEGEND	Staff	1	2	3	4	5	6	7	8
		N. C. Wall	R. Johnston	M. Hemkemeier	H. Dalsasso	Staff	Udunka-Burian	G. Morelos	J. Muller

at this early date. However, the following activities have been completed or initiated:

1. The Project Plan for 1975-76 has been prepared.
2. On-site technical assistance by EDL staff has been initiated.
3. Two sites have been selected for the first two extension service offices.
4. Staff training of UI personnel at EDL headquarter has been scheduled.
5. Baseline study has been completed.
6. Audiovisual documentation has been scheduled.

On the following page, the Project Plan for this year is presented as Figure 3 of the report.

#### Economic Development Laboratory

Each of the three counterpart institutions invested one half of their grant funds to obtain training and consulting assistance from the Economic Development Laboratory of the Georgia Institute of Technology. As part of this contractual activity, they also hired the Technology and Development Institute, East-West Center, Hawaii, to tape the audiovisual documentation of each project.

Under the contract with the Economic Development Laboratory, many staff members were on-site in performing their assigned tasks on these three projects. A brief listing of the individual EDL staff members follows. Some were funded by the corresponding project (B-426, B-427, or B-455); yet others, marked with an asterisk, were funded under an AID 211(d) grant to the Georgia Institute of Technology.

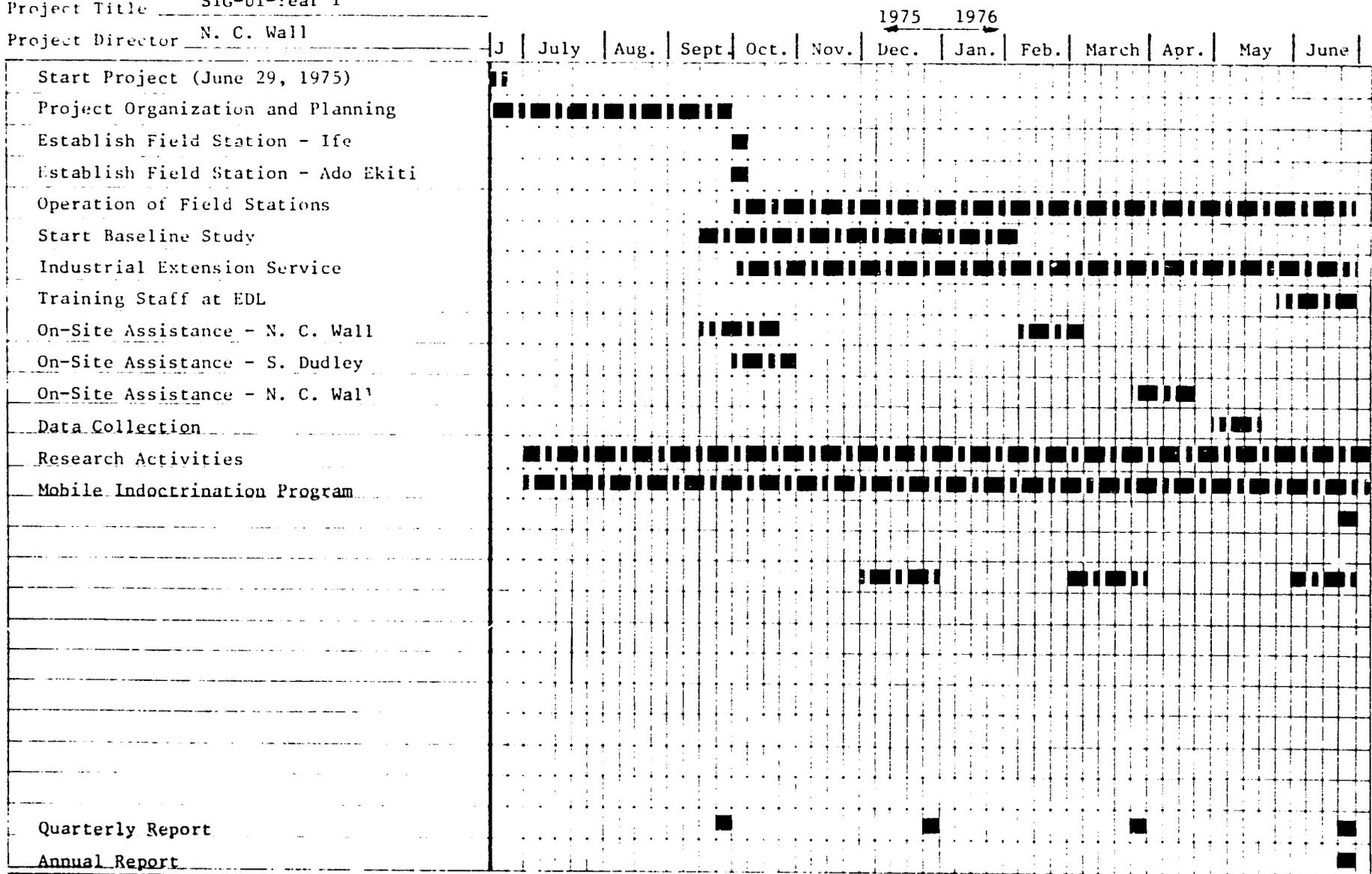
#### Soong Jun University, Korea

##### 1975

January 26-February 2	Dr. Joseph Pettit*
January 26-February 2	Ross W. Hammond*
April 3-April 12	Kay E. Auciello*
June 29-August 2	Dr. Kenneth Stephens
July 22-August 7	Richard Johnston
September 1-September 20	Larry Edens
September 7-October 3	Harvey Diamond*
September 20-September 27	Fred Burian

Project No. B-455  
 Project Title SIG-UI-Year I  
 Project Director N. C. Wall

FIGURE 3  
**PROJECT PLAN**



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**LEGEND**

September 20-September 27	Edwina Udunka*
September 20-September 27	Dr. Thomas Stelson*
September 20-September 27	Ross W. Hammond*

Fundação Educacional do Sul de Santa Catarina, Brazil

1975

March 31-April 18	Nelson C. Wall
March 31-April 25	Richard Johnston
April 6-May 3	Gaston Parets*
June 25-July 18	Nelson C. Wall
July 5-July 14	Edwina Udunka*
July 5-July 14	Fred Burian
July 5-July 25	George Morelos
July 5-July 23	John Kaatz*
November 7-December 3	Nelson Wall

University of Ife

1975

(First six months of activity)

September 23-October 11	Nelson C. Wall
September 27-October 14	Sherman Dudley
November 30-December 6	Martha Ann Deadmore*
November 30-December 6	Frank Kingsland

As in the past year, two audiovisual documents were taped--one each for SJU and FESSC. Copies of the videotapes, as well as a collection of still photographs, are available to the sponsor and/or other interested organizations. This audiovisual material is an integral part of this final report.

## RESULTS AND CONCLUSIONS

The introductory portion of this report identified a few of the many accomplishments that have resulted from this Year II program of work under Projects A-1600, B-426, B-427, and B-455. This section will attempt to briefly summarize the conclusions and outline the results of each individual project.

### Results of Soong Jun University Program (B-426)

1. A survey conducted during the past year of 19 small-scale industries that had received technical assistance since 1974 reported the following findings: (a) a total of 576 new jobs had been generated in these industries and (b) productivity or profit showed a gain varying from 20% to 200%.
2. Soong Jun University provided a grant to Dr. Y. B. Ouh, Director of the Integrated Development Center, to study the socioeconomic effects of this industry-oriented program in the province of Kyoungy.
3. The College of Engineering at SJU has established a Department of Industrial Engineering following the authorization given by the Ministry of Education. This is the ultimate result of actions initiated under this program in 1974.
4. Three persons were sponsored by SJU to come to Atlanta, Georgia, and receive special training at the EDL headquarters at Georgia Tech. Two of the participants were on the SJU professional staff and the third person was a local Korean industrialist.
5. The technical staff of the project designed and assisted in constructing a simple production fixture for one of the small-scale industries participating in this program. Four other devices were designed during the year as part of the "appropriate technology" phase of the program.
6. The audiovisual documentation which was started during the first year was continued and additional cases were recorded during Year II.
7. On-site technical assistance was provided by the EDL staff to both the counterpart institution and to many of the participating small-scale industries. A total of 18 man-weeks were spent by the EDL staff assigned to the project on-site in Korea. During the year, technical assistance also was provided to 28 different companies by the joint staff.

8. A staff specialist from EDL, during his tour of duty, established five computer programs on quality control at the SJU Computer Center. He also conducted a series of lectures on the same subject for interested industrialists and SJU staff personnel.

9. The SJU interinstitutional activities were expanded to include two additional organizations. This action will broaden the linkages of the university with the "real" world.

10. Several training programs, lectures, and seminars were presented during this year by the SJU staff to interested participants.

11. Three professional persons were hired during the year to further augment the ITI and SJU staff. All three persons are engineers and will be participating in this program.

12. Many other persons from the Georgia Tech staff visited SJU under the sponsorship of other AID grants to Georgia Tech. This greatly fortified the existing relationship and interfacing activities between both institutions of higher learning.

#### Results of the Fundação Educacional do Sul de Santa Catarina Program (B-427)

1. In a desire to evaluate the results of the technical service portion of the program, the FESSC staff conducted a survey of eight small-scale industries that had been recipients of this service during 1974. The survey results showed that 31 new industrial employees had been hired by these companies and that their sales volume had gone up 4.1 million cruzeiros (about \$512,000) during the past year. One must remember that many of these companies suffered very heavy losses during the 1974 flood and, in some cases, were closed for several months because of the flood damages.

2. The joint project staff provided on-site technical assistance to 37 small-scale industries distributed over 11 different municipalities of Santa Catarina during the second program year. Many of them received a "continuous" type of technical assistance in which the assistance team constantly monitors the company activities and inputs to management.

3. A new industry employing 47 persons has been established as a direct result of a complete feasibility study conducted by the FESSC staff. Three other such studies were completed this year by the research staff of FESSC, and they are presently being considered by interested investors and entre-

preneurs. All four studies would require a total investment of 4.2 million cruzeiros (about \$525,000) and, if established, would create 98 new jobs. This represents an average cost of \$5,357 per new industrial job in this small-scale industry sector.

4. The FESSC staff also researched, prepared, and published 14 manufacturing opportunity studies during the year. These studies are all for small-scale industries using local resources and with good potential domestic markets for the finished products. Many of these new manufacturing opportunities presently are being considered by local investors and entrepreneurs who are now aware of the highly professional work that FESSC is generating.

5. The Basic Data Center (CDB), which suffered a loss of over 80% of its information collection during the 1974 flood, has been totally rebuilt. The CDB is becoming the "information center" for that area of Brazil. At present, many government agencies and industrial enterprises direct their questions to the CDB, knowing that they will be provided with reliable, current, and viable replies. During the year, the CDB holdings were doubled on the basis of the existing collection prior to the flood. An EDL staff specialist worked on-site during the year to assist the CDB in enhancing its collection and broadening its information sources. All data required by the staff working on feasibility studies and the new manufacturing opportunity studies were provided by the CDB.

6. As part of the continuing upgrading of the FESSC professional staff, three additional members of the staff completed intensive training at the EDL headquarters in Atlanta, Georgia. Upon returning to FESSC, this group began conducting lectures and short courses for the other members of the FESSC staff.

7. In-house training programs were continued through the 1975 at FESSC. Coordinating with the EDL staff on-site, FESSC personnel presented training programs for staff members, and 46 persons successfully completed these programs during Year II.

8. In an effort to provide industrial training to the local manpower, the Center for Permanent Education presented 31 industrial training programs during this year. The programs were oriented to specific needs that had been identified by local industries. A total of 512 persons completed these programs, many of whom were rapidly employed by local small-scale industries.

9. Following the audiovisual document prepared during Year I, the administration of FESSC decided to set up its own audiovisual section. This was accomplished during the year, and staff were trained and necessary equipment was acquired. Later in the year, when the East-West Center/EDL staff team taped the audiovisual document for Year II, the FESSC staff also did its own version of this document, using its own staff and equipment.

10. On-site technical assistance was provided by the EDL staff to the various FESSC projects. The EDL professional staff had 19.5 man-weeks of on-site study during the year. Other members of the EDL staff visited FESSC under the sponsorship of another USAID-funded project.

11. The joint staff also contributed to or participated in some 10 lectures, workshops, and seminars that were presented to small-scale industries and development groups in Santa Catarina.

12. Five major studies were conducted, researched, and published during Year II by the FESSC staff. One of these very comprehensive studies is at present being used by the state government of Santa Catarina as the basis for the new five-year economic development plan for that state. This study was conducted entirely by the FESSC staff under the direction of Econ. Jose Muller, the Counterpart Project Director.

#### Partial Results of the University of Ife Program (B-455)

Since only six months have elapsed since initiation of this program, it is very difficult to determine all of the results. Several accomplishments are outlined below, and further results and impacts may be anticipated from this program later in 1976.

1. The project plan for the first 12 months was completed and is now being implemented. To date, the project is well on schedule and UI staff members are trying to implement the different tasks for which they are responsible.

2. Nearly eight man-weeks of EDL on-site staff assistance have been provided to the UI staff and additional time is scheduled during the balance of the first year.

3. While on-site, the Project Director assisted the UI staff in selecting two locations for their first two extension offices. The project plan calls for both of these offices to be operational by the end of this program year.

4. A schedule has been completed for an UI staff training program at EDL headquarters in Atlanta during the summer of 1976. The UI administration is selecting the participants for this program.

5. First- and second-quarter reports have been completed by the UI staff, as per the scheduled procedure.

6. Assisted by the UI staff, the Project Director was able to conduct a baseline study while on-site during the second quarter of the project year. The baseline study is now being published and will be made available to the sponsor and other interested parties at the end of program Year I.

7. The taping of an audiovisual documentary has been scheduled for the summer of 1976 in an effort to record the first year of activity.

### Conclusions

Continuing the chain of actions initiated during the first year of this project, the administrative project (A-1600) and the three companion projects (B-426, B-427, and B-455) have successfully established three counterpart units in developing countries which are dedicated to the generation and expansion of the small-scale industry sector of their respective nation. The two units which started in 1974 are now actively implementing action-oriented pragmatic industrial programs, and some of the results are presently visible.

These programs have in a direct or indirect manner assisted in generating new industrial jobs, increasing production, augmenting sales, and, in general, "enhancing" a group of small-scale industries in the host countries. As a by-product of this effort, the counterpart institutions are now more capable of providing technical assistance, carrying out research, adapting and transferring appropriate technologies, and conducting industrial training and educational programs.

It is the conclusion of the author that results to date are far greater than originally conceived; however, they are nowhere near the long-range anticipated accomplishments. The three counterpart units are directly involved in serving their local small-scale industry, which was an unheard concept two years back in those particular locations. The counterpart staffs are highly motivated, and most eager to continue providing this type of service to their people and their communities.