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CAPITAL SAVING TECHNOLOGY
IN THE U.S. FOREIGN ASSISTANCE
PROGRAM IN CAMEROON:
A FIELD SURVEY

BY

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Table of Contents

| | <u>Page</u> |
|---|-------------|
| Findings and Recommendations | 1 |
| I. Introduction | 6 |
| A. Objectives | 6 |
| B. Definition | 6 |
| C. Methodology | 7 |
| D. Presentation | 8 |
| II. Current AID Support for Capital Saving Technology | 9 |
| A. Introduction | 9 |
| B. AID's Country Program in Cameroon | 12 |
| C. Other AID Initiatives | 15 |
| III. Observations from Two Field Studies | 17 |
| A. North Cameroon Pilot Community Development | 17 |
| B. Centers for Training Farm Families | 19 |
| IV. CST Project Opportunities | 22 |
| A. Small-Scale Enterprise | 22 |
| B. Community Development | 26 |
| Bibliography | 29 |

List of Tables

| | |
|--|----|
| Table 1. AID-Supported CST Projects in Cameroon | 11 |
| Table 2. Projected Number of Livestock and Poultry to Be Distributed | 14 |
| Table 3. Agricultural Implements Available from CENEEMA | 24 |

Appendices

| | |
|--|--|
| Appendix I List of Persons Interviewed | |
|--|--|

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FINDINGS AND RECOMMENDATIONS

1. Nature and Level of Support.

The AID strategy in Cameroon does not make specific mention of capital saving technology (CST), and no single AID project has the introduction of CST as a major objective. However, several principles of CST have been automatically incorporated into some AID projects which meet stated objectives of the U.S. Foreign assistance program, i.e., the provision of basic services to the world's poor and participation by the poor in needs definition and project implementation. Shared characteristics include:

- small capital investment per beneficiary;
- use of local labor and local resources;
- responsive to needs of local communities, and enhancement of local self-reliance and control;

A review of AID's program in Cameroon reveals that eight projects, valued at \$22 million, have some of these characteristics. By comparison, the total value of AID's foreign assistance package to Cameroon for the years 1975-81 inclusive is estimated to be \$48 million. The major emphasis of all eight projects is on the delivery of services, as opposed to devices, although there is some transfer of goods. The goal of three of the eight projects is to increase productivity and rural incomes of small farmers primarily through low-cost training and extension. Farmers normally provide at least partial payment for any goods they receive (e.g. animal drawn equipment; higher yielding breeds of livestock). The goal of the remaining five projects is on improving the quality of life through village improvement activities. Needs are defined by village development committees; and labor-intensive technology, local resources and local labor are utilized in project implementation. These projects do not create income generating employment opportunities, because villagers donate their time and labor.

Only those projects with obvious CST characteristics could be reviewed for this study. Other AID supported projects, especially those in the design stage, might also be reviewed to identify (1) the kind of technological innovation being promoted by each and its appropriateness to the AID strategy; and (2) opportunities for strengthening these projects by the inclusion of CST, where appropriate. One obvious possibility is to use locally produced farm implements in U.S. financed agricultural projects. This strategy would further promote market development and stimulate indigenous industry. This approach is being tried in Senegal, where some AID projects use farm equipment produced by SISCOA, a local firm.

Recommendation: Review all AID-supported projects in Cameroon to identify opportunities for including CST, where appropriate.

2. Potentials.

Two funding sources have been established by AID specifically to provide support to host country organizations promoting the adoption and dissemination of CST. They are the Africa Regional Improved Rural Technology Project (IRT) and Appropriate Technology International (ATI). Both programs have been tailored to meet the needs and realities of the organizations they are designed to help: application procedures are simple, the review process is relatively quick, and the typical grant is small (the ceiling for IRT is \$50,000, and ATI seldom considers projects over \$100,000). Representatives of both programs visited Cameroon during the past year to explore the project possibilities, but to date none have been financed. Several Cameroonian organizations are reportedly preparing project proposals for IRT funding. ATI has no plans for funding projects in francophone Africa, which includes Cameroon.

Recommendation: Closely monitor the IRT project to identify and resolve any unforeseen bottlenecks and problem areas as they arise; and encourage ATI to expand its program to include francophone Africa.

The most obvious producers of CST (hardware) are small- and medium-scale enterprises. At the present time, there are no U.S. projects in this sector. However, during the past few years, two relevant papers have been prepared for USAID/Cameroon. The first by Steel proposes an AID strategy for increasing urban employment opportunities through small-scale enterprise, and identifies specific projects for possible AID support. (See II.A.). The second by Bielenberg reviews the state-of-the-art of appropriate technology in the northern province, and recommends a program for training prospective manufacturers in the design, testing, and introduction of prototypes. (See IV.A.)

Recommendation: Using these two papers as a point of departure, explore possibilities for initiating a program to assist small-scale enterprises in Cameroon.

Other interesting possibilities exist for small-scale enterprise development in Cameroon. CENEEMA, an agricultural engineering R&D organization located in Yaounde, has developed a wide range of prototypes for agricultural production and food processing. However, it lacks the resources for undertaking an extensive outreach program, whereby the prototype devices are transferred from the laboratory to small-scale manufacturers and ultimately farmers. The next steps include: conducting regional market surveys; identifying entrepreneurs with the capacity to fabricate the tools/machines; and providing some of them with initial technical and financial assistance to test-build the prototypes. (See IV.A.) AID has already financed research, development and dissemination of agricultural implements by the International Rice Research Institute in the Philippines, with a fair degree of success. Direct contact between IRRI and CENEEMA should be encouraged as the latter could learn from IRRI's experiences. AID should also consider providing project support for an outreach program.

Recommendation: Facilitate direct contact between IRRI and CENEEMA, and explore project possibilities for an outreach program.

Conferences and workshops, such as the one being sponsored by the German Foundation for International Development on small-scale mechanization, facilitate dialogue among Third World Countries on technological problems and appropriate solutions. (See IV.B.) Meetings of this kind should be encouraged, and deserve support from AID.

Recommendation: Sponsor conferences/workshops for and by the representatives of the Third World on indigenous technological solutions to shared problems.

Community development offers an important avenue for introducing CST in Cameroon. This approach is consistent with the Government's commitment to "development auto-centre," translated as development by and for the people themselves. Village development committees, viewed as the major vehicles for implementing the Government's strategy, are being established nationwide and offer a means for exposing communities to new ideas and technologies. A number of village level activities lend themselves to the community development approach, notably:

- construction (of schools and clinics)
- water supply
- sanitation
- food storage and processing
- energy production

Several organizations working at the grassroots level are now exploring their role in promoting CST. They include the Department of Community Development, private voluntary organizations, and Peace Corps. CST project proposals developed by these organizations deserve consideration by AID. (See IV.B.)

Recommendation: Provide support to the Department of Community Development, private voluntary organizations, and Peace Corps for undertaking CST projects.

3. Field Observations of Two Projects

Two AID-supported projects -- North Cameroon Pilot Community Development and Centers for Training Farm Families -- were selected for an in-depth review. They are of interest because each illustrates a different process for introducing technological change, i.e. delivering goods and services to the rural poor, and both hold promise as potential models for replication elsewhere.

Of all projects reviewed, the North Cameroon Pilot Community Development Project most appears to meet the criteria for CST. The village development committee is the focal point of this project. Technological change is introduced through this committee, which identifies needs, establishes priorities and organizes work forces. During a visit to the project site in January 1980, well-digging and construction activities were in full swing. Two capital saving technologies have already been identified for testing: a cinva ram press (in use) and a locally fabricated excavation shovel for deepening water ponds. This pilot project, which is being implemented by a private voluntary organization, will yield some important lessons about promoting technological change at the community level.

Recommendation: Upon project completion, undertake an in-depth field review to determine if it provides a replicable model for introducing CST at the community level.

In the Centers for Training Farm Families Project, villagers rather than government-sponsored extension workers are viewed as the principal change agents. Couples are trained in improved farming techniques, including the use of animal drawn equipment, and demonstrate these techniques to their neighbors. Results of an early evaluation are remarkable: graduates from two pilot centers registered a 40% increase in productivity after one year of training; and neighboring farmers experienced smaller but appreciable increases.

USAID/Cameroon would like to support a comprehensive evaluation of this project, but has no available funding. Such an evaluation is highly desirable, given the project's potential replicability.

Recommendation: Identify AID source of funding for evaluation of Centers for Training Farm Families Project.

4. Definitional Issues

The characteristics of capital saving technology, as defined by the House Committee on Appropriations, are similar to those for appropriate technology, a term which has gained worldwide currency. Other terms widely used include "intermediate," "alternative" and "labor-intensive" technology. In the U.S., "light capital" and improved rural technology" have also been used in congressional committee reports and AID projects respectively. The introduction of yet another phrase serves to confuse more than clarify.

Recommendation: Adopt one term, preferably one that has already gained worldwide acceptance; define it; and use it consistently over time in all U.S. foreign assistance programs.

The definition for capital saving technology, as defined by the House Committee on Appropriations, has been expanded by AID to include some services (e.g. health, education, family planning) which are provided to the poor at a relatively low per unit cost. However, the characteristics of CST as defined in the congressional report are only relevant to small-scale enterprise. A set of characteristics for CST services would assist in identifying and evaluating AID support for these activities.

Recommendation: Draw up a set of characteristics for capital saving technology in the service sector.

I. INTRODUCTION

A. Objectives

This field study was prepared at the request of the Africa Bureau of AID and examines the process of capital saving technology (CST) transfer and dissemination in the U.S. foreign assistance program to Cameroon. It is one of several country case studies prepared as part of an agency-wide effort to develop a "comprehensive strategy aimed at accomplishing a quantum leap in the delivery of capital saving technology to the world's poor within five years."¹

B. Definition

Capital saving technology, as defined by the Committee on Appropriations, has the following characteristics:²

- Economize on capital without wasting or displacing labor;
- Require a small capital investment per worker;
- Are modest in scale, simple to install, and durable in operation;
- Are not dependent on a highly centralized infrastructure for production, maintenance, or repair, and are thus manageable by small entrepreneurs;
- Make efficient use of renewable resources and minimize costs by combining factors of production according to their relative prices and scarcities;
- Meet the needs of local communities and enhance the self-reliance and local control of such communities; and
- Create a process of capital self-generation and self-liquidation so as not to become continually dependent on outside sources of financing.

¹ Quoted from the Foreign Assistance and Related Programs Appropriations Bill 1980, Report No. 96-273 of the U.S. House of Representatives.

² Ibid.

AID has expanded this definition to include both hardware and services, such as primary health care and non-formal education.

The phrase "capital saving technology" is new, appearing for the first time in a report of the House Committee on Appropriations, dated June 14, 1979.³ The USAID mission in Cameroon was understandably unfamiliar with this new terminology and questioned its relationship to the older, more familiar concepts of "appropriate" or "intermediate" technology. And although this new phrase implies a narrow definition with an emphasis on minimizing costs, characteristics of CST as stated by the committee are largely the same as those for appropriate technology. But there are notable differences. Lacking in the CST definition is the emphasis on social/cultural and environmental appropriateness which are concerns of appropriate technology. However, intermediate technology is virtually synonymous to capital saving technology, and the two terms will be used interchangeably throughout this report.

C. Methodology

The study was conducted from January 8 to February 20, 1980. Several days were spent in Washington, D.C., reviewing AID documentation and attending briefings. A 17-day field visit commenced January 21. During the first few days in Cameroon, I reviewed AID's program with USAID staff. A total of 8 projects, 5 ongoing and 3 proposed, were found to have CST characteristics. (See Table 1.) Because time available for field work was limited, only two of these, a community development project and a farm family training project, were selected for the case studies. Interviews were held with the individuals involved in implementing these two projects and visits were made to the project sites. Brief and general descriptions of the remaining six projects are included in this report, based primarily upon a review of AID documentation and discussions with USAID staff in Yaounde. Contacts were also made with other organizations in Cameroon, both public and private, involved in the design, development, promotion or dissemination of intermediate technology, to identify both constraints to and opportunities for a more rapid, widescale adoption of intermediate technology.

Time did not permit a review of AID's non CST-activities to identify the kind of technological innovation being promoted by them. It is possible that opportunities exist for incorporating CST elements into some of these projects, and these should be explored.

³In the past, the House Committee on Appropriations used the term "intermediate" technology, which was superseded by the phrase "light capital" technology. Section 107 of the Foreign Assistance Act, as amended, uses the term "intermediate" technology. This amendment resulted in the establishment of an independent, nonprofit organization called "Appropriate Technology International."

D. Presentation

Current AID support for capital saving technology is reviewed in Section II. Two different processes supported by AID for introducing intermediate technology are explored in detail in Section III. In Section IV, the state-of-the-art of the Cameroon small-scale agricultural equipment industry is outlined, and the next steps for diffusing this technology to small producers and consumers are identified. Opportunities for introducing CST through community development are also identified and may be of possible interest to AID.

II. CURRENT AID SUPPORT FOR CAPITAL SAVING TECHNOLOGY

A. Introduction

The bulk of AID's program is in the north, one of the poorest regions in Cameroon. This area is isolated from Douala and Yaounde, the national centers for industry and government respectively. Per capita income and standards of living are generally lower here than in other regions of the country.

The USAID strategy in Cameroon, as stated in the FY 1982 Country Development Strategy Statement, does not specifically mention capital saving technology.⁴ Also, the introduction of CST is not a major purpose of any AID project. The characteristics of CST as defined by the House Committee on Appropriations most easily lend themselves to small and medium scale industry, which receives no AID support at the present time. However, a paper was prepared in 1978 by William Steel for USAID/Yaounde titled "A Strategy for Supporting Small-Scale Enterprises in Cameroon." It includes a preliminary assessment of the present and potential role of small-scale indigenous enterprises in the development of Cameroon; a review of relevant government policies and institutions; suggestions for general strategies for AID involvement; and recommendations of specific projects for possible AID support.

The objective of many AID projects is to expand and improve the Government's capacity to deliver a range of services in the health and agricultural sectors. A number of these activities appear to have some characteristics of CST:

- low AID cost per beneficiary (see Table 1);
- maximum use of local labor and materials;
- use of simple, labor-intensive technologies;
- decentralization of services.

Because most AID projects provide support for social services, they neither generate local capital nor are self-liquidating as would be the case for industrial projects.

⁴ The objectives of the USAID program in the Cameroon, as stated in the FY 1982 Country Development Strategy Statement, are fourfold: (1) to assist in strengthening and diversifying the agricultural sector with special emphasis on increasing small farmer productivity and real income; (2) to make available basic health care services, which are cost-effective, to Cameroon's rural population; (3) to train Cameroonian personnel responsible for planning and implementing rural development programs; and (4) to strengthen the Government's capacity to undertake environmentally-sound development programs.

AID projects found to include some of the above-mentioned characteristics are listed below:

Ongoing Projects

- North Cameroon Pilot Community Development (See Section III.A.)
- Centers for Training Young Farm Families (See Section III.B.)
- North Cameroon Rural Health
- Practical Training in Health Education
- Cameroon Margui-Wandala Water Supply

Proposed Projects (1981)

- Small Farmer Livestock and Poultry
- Small Farmer Fish Production
- Medical System for Cameroon (MEDCAM)

The value of AID's foreign assistance package to Cameroon for the period 1975-1981 is estimated to be \$48 million.⁵ Projects in this package totaling \$22 million fall within the CST category. This figure includes a proposed \$15 million health project called Medical System for Cameroon. (See Table 1.)

The information presented in this section is based primarily upon a review of AID documentation and interviews with USAID staff. Six of the eight projects are described:

- Health: North Cameroon Rural Health
Practical Training in Health Education
Medical System for Cameroon
- Community Development: Margui-Wandala Water Supply
- Food Production: Small Farmer Livestock and Poultry Development
Small Farmer Fish Production

At the request of the AID mission in Yaounde, three additional projects are also mentioned. Two of these -- Low Income Housing and North Cameroon Livestock and Agricultural Development -- contain some CST

⁵ This figure was obtained from the AID Development Assistance Review for 1961-1981, dated July 1979. It does not include PL 480 and Disaster Relief Assistance.

TABLE 1. AID-Supported Projects in Cameroon

| Project No. | Project Title | Total AID Contribution | Estimated # of Beneficiaries | Cost per Person <u>1/</u> (U.S. \$) |
|-------------------|--|------------------------|------------------------------|-------------------------------------|
| Ongoing Projects | | | | |
| 631-0002 | Centers for Training Farm Families | 952,000 | 100 families/yr | - <u>2/</u> |
| 631-0009 | Practical Training in Health Education | 2,040,000 | 45,000 | 45. |
| 631-0010 | North Cameroon Pilot Community Development | 351,000 | 10,000 | 35. |
| 631-0201 | North Cameroon Rural Health | 469,000 | 110,000 | 4.26 |
| 631-0025 | Margui-Wandala Water | 1,360,000 (est.) | 35,000 | 38. |
| Proposed Projects | | | | |
| 631-0015 | Small Farmer Livestock & Poultry | 953,000 (est.) | N/A | N/A |
| 631-0022 | Small Farmer Fish Production | 762,000 (est.) | 6,000 families | 127. |
| 631-0016 | Medical System for Cameroon | 15,000,000 | 600,000 | 25. |

1/ Cost per beneficiary was calculated by dividing the USAID Life of Project (LOP) contribution by the number of estimated beneficiaries. Note that project funding from other sources (eq. Government of Cameroon, Peace Corps, Private Voluntary Organizations) has not been included in this calculation.

2/ Each center will have the capacity to train 25 couples. Four centers, once completed, will train 100 couples/annually.

elements. The third -- Urban Functions in Rural Development in North Cameroon -- is a planning project relevant to a CST strategy. However, the value of these projects has not been included in the \$22 million figure quoted above.

Two funding sources for appropriate technology projects are available in principle to all AID missions in Africa -- the Africa Regional Improved Rural Technology Project and Appropriate Technology International. Both are described in this section, although no projects are currently being funded through either of these mechanisms.

B. AID's Country Program in Cameroon

1. Health. The U.S. has made a major commitment to the Government of Cameroon to assist in delivering low-cost primary health care services to the rural population. The approach is essentially one of community development applied to a public sector program. Aide-soignants, or village level health extension workers,⁶ receive short-term training in health education, and are then responsible for: (1) conveying this information to rural communities and (2) helping villagers organize health committees for the purpose of undertaking community improvement activities.

With a grant from AID, Catholic Relief Services (CRS) has been working with the Catholic diocese since 1975 to expand the availability of health services and health education in North Cameroon. Under the North Cameroon Rural Health Project, 50 health extension agents will be trained to work at the village level, teaching the basics of sanitation, nutrition and hygiene. As of September 1979, 27 agents had completed their training, and 7 more were in process. In addition, 43 mid-level health personnel will receive training, and will work at one of the 14 Catholic dispensaries. It was originally intended that the health extension workers would assist in organizing village committees, which would then undertake a variety of village health improvement activities. However, progress has been slow and somewhat discouraging. It appears that the health committees assemble only when the extension agent visits the village.

As part of the Practical Training in Health Education Project, a total of 120 field level workers and 511 primary school teachers in the districts of Kadey and Mefou will receive basic training in health. An average course runs for two weeks, at an estimated cost of \$500 per person. As in the CRS project, the newly trained field workers assist in organizing village health committees. To date 97 committees have been established, and are undertaking a variety of community health improvement activities, such as digging latrines, protecting water sources, and building enclosures for animals. As of this writing, 1,803 latrines have been dug, and an additional 287 are in the making. Villagers contribute both materials and

⁶ The village-level health extension worker is the lowest person in the hierarchy of the Cameroon Medical System.

manual labor.

It is envisaged that a third health project, Medical System for Cameroon, will contain a number of capital-saving technology components, including training of intermediate and village-level health workers; construction of clinics using local building materials; and the application of appropriate treatments such as oral rehydration. This project will represent a major effort to further strengthening the national health care delivery system, as evidenced by AID's contribution, estimated to be \$15 million for the first 5-year phase. Project design is now underway.

2. Community Development.

In the Margui-Wandala Water Supply Project, local labor and labor-intensive technology will be used to upgrade 36 wells and 56 unprotected springs. Wells will be hand-dug except where rock is encountered. Excavations for spring box systems and concrete mixing will be done by hand with simple tools. Use of mechanized equipment will be kept to a minimum. Villagers have reportedly participated in the selection of sites; have formed self-help groups; and will contribute all unskilled labor and local materials, such as gravel and sand. The estimated cost of well upgrading materials per site is \$1,334 and the cost of each spring box system is estimated to be \$2,627. A variety of imported hand pumps will also be tested, and the most efficient models (two each) will be installed on each well.⁷

The goal of the project is to provide 50 liters of potable water per day per family at year-round water points in the Department of Margui-Wandala, serving an estimated 102,000 people.

3. Food Production.

Two food production projects share the common purpose of developing additional sources of food to small farms. This will in large part be achieved by increasing the supply of necessary inputs, as well as by strengthening the government's extension services.

High yielding breeds of livestock and poultry will be distributed as part of the Small Farmer Livestock and Poultry Development Project. (See Table 2 for projected numbers of animals to be distributed.) Farmers will pay for the animals, either a fee or in kind.⁸ Seventy-five government extension workers and 300 small farmers will receive practical training in small livestock, poultry and dairy management. The potential impact of this type of activity could be considerable, given that almost all Cameroonian families own some livestock, on average 7 goats and/or sheep and $\frac{1}{2}$ head of cattle. At the time of this writing, a critical element

⁷ At the present time, no hand pumps are being manufactured locally.

⁸ For example, the first born female offspring could be offered as payment.

of the project, a detailed plan for distributing the livestock to small farmers had not yet been formulated.

Table 2. Projected Number of Livestock and Poultry to Be Distributed

| <u>Type</u> | <u>Number</u> |
|-------------|---------------|
| Poultry | 355,000 |
| Rabbits | 3,400 |
| Pigs | 2,200 |
| Cattle | 360 |
| Goats | 210 |
| Sheep | 110 |

Source: Operational Program Grant Proposal for Small Farmer Livestock and Poultry Development, dated November 1979.

The capacity of four fish stations will be augmented and the government extension service strengthened as part of the Small Fish Farmer Production Project. This activity is supportive of the government's program to encourage farmers to raise fish, both as a high-protein supplement to local diets and as an additional source of income. Forty-five agents will receive training in fish pond culture, and will provide assistance to an estimated 6,000 families. Thirty Peace Corps Volunteers will assist in project implementation.

4. Other AID Projects.

Two AID projects include some support for CST. Although the CST elements represent only a small part of the total project, they are worth mentioning briefly.

One interesting element of the Low Income Housing Project is to develop a prototype for a low-cost urban house which can be built by local small-scale enterprises. In the North Cameroon Livestock and Agricultural Development Project, 5 sub-surface dams will be constructed using local labor and simple tools, for an average cost of \$4,000 each. Dempster hand pumps, costing \$175 each, will be installed on shallow wells to provide water for livestock. This project will also experiment with animal traction.

A third, recently approved planning project, titled Urban Functions in Rural Development in North Cameroon, will identify and analyze the economic, social, demographic and commercial linkages between the urban and rural

areas in North Cameroon, for the purpose of instituting a planning process and program for strengthening urban-based activities supportive of rural areas. The needs of the rural poor will be identified, as well as appropriate responses for meeting these needs, through the strengthening of urban-based services and institutions.

C. Other AID Initiatives

Two U.S. organizations, Experience, Inc. and Appropriate Technology International, receive AID funding expressly for promoting appropriate technology in developing countries. Their programs are important for several reasons: application procedures are simpler and quicker than for the conventional AID bilateral project; and the typical grant is small, ranging from several thousand dollars to \$100,000. This reflects the realities and needs of appropriate technology organizations, which often have neither the resources to design elaborate projects, nor the need (or capacity) for large amounts of funding.

Representatives from both organizations visited Cameroon during the past year to explore project possibilities, and in the process contacted many of the same organizations. The author of this paper was the third party, representing the U.S. Government, to come to Cameroon to talk about appropriate technology, which undoubtedly has created some confusion on the part of the individuals contacted. More importantly, no appropriate technology projects have been funded by AID. Also, the use of three different terms -- improved rural technology, appropriate technology, and capital saving technology -- for what is basically the same concept is confusing.

1. Africa Regional Improved Rural Technology (IRT), Project No. 698-0407

The purpose of this regional project is to promote the dissemination and use of "light capital," "appropriate," or "intermediate" technologies which have a direct and immediate impact on the rural poor. It is intended to provide a flexible mechanism for financing small-scale activities expeditiously, the maximum amount available for any single activity being \$50,000. The project is being managed by Experience, Inc., a Washington-based consulting firm.

To apply for funding, the person or institution responsible for carrying out the proposed project must prepare a project activity paper, following a prescribed format. Completed proposals are submitted to the USAID mission for initial review. They are then forwarded to Washington, D.C. for the final review and a decision is made within ten days after receipt of the proposal. Guidelines for preparing these activity sheets have already been distributed to a number of interested parties in Cameroon, and several proposals are now in varying stages of preparation. However, based upon interviews with several Cameroonian organizations, it became evident that assistance, either from Experience, Inc., or AID, may sometimes be required to develop a proposal.

2. Appropriate Technology International (ATI)

This is a private, non-profit corporation created in response to a mandate of the U.S. Congress "to promote the development and dissemination of technologies appropriate for developing countries." It provides financial,

technical and/or managerial assistance to local organizations for innovative activities that encourage problem-solving attitudes among the poor. Brief project descriptions, called project briefs, are drafted by representatives of ATI in close collaboration with the host country organization seeking funding. They are reviewed by ATI in Washington and, if approved, a grant agreement is written up in the field, again in cooperation with the recipient. During the first year of operation, projects ranging from \$8,100 to \$250,000 were funded.⁹ Virtually all of ATI's funding is provided under a grant from AID.

Representatives of ATI recently visited Cameroon to establish contacts and explore project possibilities. However, there are no plans at the present time for a program in francophone Africa, including Cameroon.

⁹ATI seldom considers projects over \$100,000.

III. OBSERVATIONS FROM TWO FIELD STUDIES

Two on-going AID projects, each illustrating a different process for introducing technological change to rural areas, are discussed in this section. The first uses community development workers who promote local definition of development needs and introduce technology appropriate to these needs. In the second project, village leaders trained at local centers introduce improved farming methods to their village, especially animal drawn implements.

Information presented here is based upon a review of project documentation, site visits and interviews with project staff. There was not sufficient time to meet with project beneficiaries, and for this reason the observations presented here do not have the benefit of their viewpoint.

A. North Cameroon Pilot Community Development

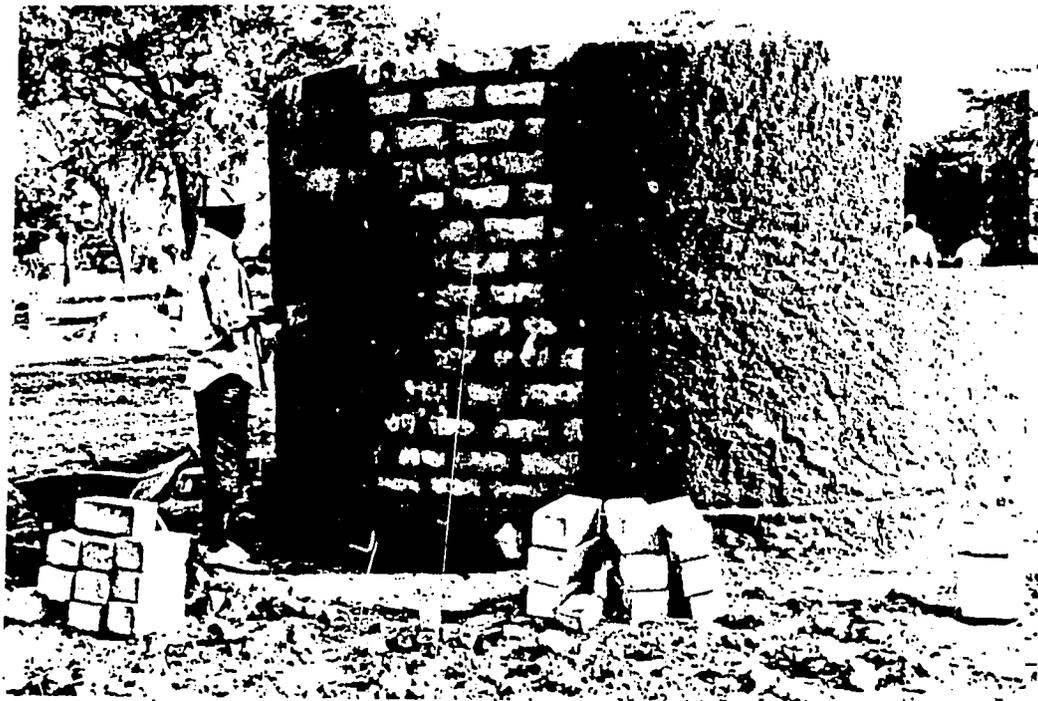
The North Cameroon Pilot Community Development project illustrates the participatory process for introducing intermediate technology to rural areas. Two new technologies have already been identified for testing: the cinva ram press (already in use at one project site) and an animal drawn shovel for deepening watering ponds. Other CST characteristics include the maximum use of local, unskilled labor and local resources. Where specialized skills are needed for undertaking an activity, a short-term training course will be organized and attended by representatives from each pilot village. All activities are designed to have a direct impact on the beneficiaries. This small project (\$351,000) is being implemented by Save-the-Children Community Development Foundation, a private voluntary organization, in close coordination with the Cameroon Department of Community Development. The project will attempt to develop a replicable model for stimulating social and economic development activities at the community level. Five pilot villages in the Kar-Hay sub-division in the northern province have been chosen as sites for project activities in four program areas: water resource development; agriculture, forestry and animal husbandry; formal and non-formal education; and primary health care.

A keystone of this project is active local participation in identification of needs, planning, and project implementation. Village Development Committees have been established in each pilot village, and are responsible for deciding what projects will be undertaken, who in the village will receive any short-term training necessary for implementing the project (for example, how to dig, construct and maintain wells), and who will contribute manual labor. All labor, with the exception of more specialized skills, is contributed by the villagers themselves at no recompense. In January, when the sites of several well projects were visited, laborers were busy at work at two of them and equal progress had been made at the third.

Every effort is being made by project staff to minimize projects costs by using local materials to the maximum extent possible. For example, a local school will be constructed using an earthen block which is a mixture of local soil (15 parts) and cement (1 part), compressed with a cinva ram



Earthen bricks are made with a cinva ram press at the Pilot Community Development Project at Doukoula. The bricks are a mixture of local soil (15 parts) and cement (1 part) and are more durable than traditional mud bricks.



Earthen bricks fabricated with a cinva ram press are used in the construction of this boukarou (a typical Cameroonian structure) at the Pilot Community Development Project in Doukoula.

press. Initial tests on the finished blocks indicate that they are quite durable. Two presses, each costing approximately \$750, have been purchased with project funds and will be loaned to the villagers. If proven successful, these earthen blocks offer a low-cost alternative to the use of more expensive concrete blocks. This construction technique would be within the financial means of most villages, thereby facilitating adoption on a wide scale and obviating the need for outside financial assistance. It is envisaged that the primary health care clinics, to be built in several villages during the project's second year, will be paid for entirely out of village funds.

Some of the technologies required for a project are relatively expensive and beyond the means of most villagers. For example, in the wells construction project, the molds for making the cement lining are about \$1,000 each, because they are fabricated with imported steel. There is need for a cheaper mold that could be made with locally available resources. In another project, watering ponds for livestock will be deepened. They are currently very shallow and dry up as early as December, a full five months before the onset of the rainy season. Instead of a bulldozer, a locally built shovel, pulled by a team of oxen, will be tried. CENEEMA, a local agricultural engineering R&D organization, has built a prototype, and the Centre Technique de Maroua will fabricate four of them, at an estimated cost of \$3,750. The tool is expensive, partially because it is still at the prototype stage, but nevertheless offers a cheaper alternative to using a bulldozer to accomplish the same job. As in other projects, the villagers will contribute their labor and the oxen.

Other technologies being used are simple and inexpensive. For example, the wells, averaging 30 meters in depth, are being dug with a simple pulley and hand shovels.

Project staff includes one project director; a social coordinator responsible for Health/Nutrition/Education projects and all activities involving women; two animatrices and one animateur. The entire staff, with the exception of the project director, are Cameroon citizens. The intent is that one of them will replace the American project manager within the next year or two. It is also hoped that the project will become financially self-supporting about the same time, thereby becoming an entirely local effort.

At this time the project appears to be gaining momentum and discrete project activities are finally underway. However, the start-up process has been a slow one. Actual project activities only began during the past several months. The American director first moved to Doukoula, a central village where project operations are based, in December 1978. Considerable time was spent explaining the project to local authorities and villagers alike, convincing them of its worthiness, earning their trust, and establishing the village development committees -- which are fundamental to the project's success. The project director continues to maintain close contact and good relations with local authorities, carefully explaining to them each and every step of the process so as to avoid misunderstanding and distrust.

One constraint has been the resistance of local authorities to the

introduction of some of the new techniques. For example, they expressed great scepticism about the use of earthen blocks for construction, and insisted that only one of the three schools be built with this technique. The other two will be constructed with the more expensive cement blocks. Only if the earthen block school proves to be durable will the administration be persuaded to change building standards and allow its widescale use.

A major factor for apparent project success is access to resources, both human and financial. The project staff is well-educated, well-paid and serves a relatively small geographical area. The social coordinator, for example, has a graduate degree from a U.S. university. This is in contrast to the average community development agent who receives a minimum of training and less money, and who serves large areas with many communities. Also, although the AID-financed project represents a small financial input when judged by U.S. (and AID) standards, it takes on a different look when viewed from a Cameroonian context. The Government Community Development operating budget for a typical arrondissement in the north is about \$500/year, and covers all expenses including such essential items as gasoline, mobylettes and training aids.¹⁰ In contrast, the North Cameroon Pilot Community Development project has \$351,000 at its disposal over a two year period.

Two conclusions can be drawn from this. First, a certain level of readily available resources are required to back up community projects. Even when villagers identify their own needs, design their own projects, and contribute their labor to carry out project activities, there is often a need for technical assistance and resources not available locally (e.g., vehicles). Secondly, it is highly unlikely that the Government of Cameroon can provide the same level of resources being furnished under the AID-financed pilot project. Although from the standpoint of process the model being tested in Kar-Hay may be a good one, there is a need to find a cheaper way to implement it without jeopardizing project success.

B. Centers for Training Farm Families

AID support for this project began in 1977, when an Operational Program Grant was awarded to the International Union for Child Welfare for the following activities: construction of one coordinating center and four new training centers; provision of technical staff for the regional center; and provision of commodity support. Although AID's contribution to this project appears to be "capital-intensive," this project has been included here for two reasons. First, the objective of the project is to introduce and promote the adoption of improved technologies to the rural poor (e.g., animal drawn equipment). Secondly, while the U.S. is financing the initial investment costs, it is expected that the Government will cover

¹⁰This figure was quoted by Alan Miller, Director of Save the Children/Community Development Project in Cameroon.

all training and operating costs after the infrastructure is in place.¹¹ This is important for two reasons: it reflects the high level of Government commitment to this project; and it assumes that the project will become independent of external sources of financing, thereby partially meeting one of the characteristics of CST. Operational costs for the two pilot training centers, established prior to AID involvement, are reportedly being paid for entirely by the Government.

The objective of this project is to increase agricultural productivity and rural incomes by introducing farmers to improved agricultural techniques and the use of animal drawn equipment. It began in 1969, when the Geneva-based Federation Genevoise de Cooperation (established with the assistance of the IUCW) and the Swiss Government provided support for the establishment of a training center at Goyang. Since then, three additional centers have been built and the government would like to expand this number to twelve in order to reach all eligible farmers in the northern province.

It is envisaged that graduates of the program will become innovators and change agents in their respective communities. Because the success of the project depends heavily upon the students themselves, exacting selective criteria have been established for recruitment. Students must:

- be married;
- own land;
- be in good standing with the community.¹²

During the early years of the training project, unmarried males were recruited. However, bachelors in North Cameroon do not own land and have little standing in the village. It was found that after being trained, some of the unmarried graduates left their villages for the bright lights of the city; others sold their farm equipment to pay for dowry expenses. It was therefore decided to recruit only married couples, preferably with children.¹³

Upon graduation, each couple returns to their village, taking with them a package of animal traction equipment. This includes a pair of oxen selected from a local herd; a yoke; and a plough with interchangeable parts (called a multicultureur), manufactured by Tropic in Douala. The couple repays 50% of the cost of this package with the Government picking up the other half. Normally each couple earns enough income from sales of crops grown during their nine months at the center to pay for the equipment, thereby returning home debt-free.

¹¹Each center's normal recurring operating expenses are reportedly borne by the Government, and included in the Ministry of Agriculture's annual budget. However, according to the IUCW, external operational support is required for at least five years after the establishment of a new center. Some of this support is currently being provided by Private Agencies Collaborating Together, Inc. (PACT), with funding from AID.

¹²Literacy is not a requirement.

¹³Only one wife is permitted to accompany each husband.

As a result of this program, the number of villagers in the northern province exposed to animal traction technology is growing each year and it can be expected that this will stimulate market demand. Also there is reportedly widespread dissatisfaction with the Tropic models, which are prone to breakage. There appear to be real opportunities for the development of small-scale farm equipment enterprise in the north.

Measures have been taken to assist graduates in applying the new techniques on their own land. At least four couples are recruited from each village, and provide each other mutual reinforcement when they return home. Each center also only accepts trainees living within an average radius of 30 kilometers. This permits center staff to regularly visit couples for two years following graduation and assist them with any problems which arise as they apply the new techniques.

The expense of training each couple is relatively high. According to Gabriel Serande, Director of the Dadjamka Center, the average cost for training one couple is approximately \$2,600, or \$1,300 per person. This reflects a high level of commitment on the part of the Government of Cameroon, which is paying (or will pay) for these costs. The cost of training may be justified in the long run if the project is indeed successful in meeting its objectives of increasing production and net disposable incomes, and improving the general nutritional well-being of villagers. The target is a 50% increase in productivity and a 40% increase in net disposable income among graduates. It is also hoped that neighboring farmers will adopt some of the new techniques after seeing them demonstrated by the trainees, thereby increasing their productivity, although increases would probably be much lower, on the order of 10%.

One weakness of the project has been the women's program. In the northern province, both men and women work in the fields, and during the nine month training period the wives are also taught the improved agricultural techniques.¹⁴ However, it was envisaged that the wives would also receive supplemental training in the areas of hygiene, sanitation, nutrition and home-making. To date, few specialized courses have been offered to the women, in part because the major focus of training has been on increasing agricultural productivity, and also because of a shortage of staff. This situation is changing however, as reflected by the recent addition of a Dutch volunteer to the Coordinating Center's staff, who is expressly responsible for expanding and strengthening the women's program.

Pending availability of funds, AID will finance an evaluation of this project in the near future (Spring/Summer 1980) to determine the extent to which stated objectives are being met. The actual increase in agricultural productivity and income being realized by graduates will be measured. The project's spread effect, i.e. the extent to which other villagers are adopting the new techniques, will also be examined.

¹⁴ Reportedly there is some resentment on the part of the wives regarding the package of equipment provided to each couple upon graduation. Although the oxen and tools are jointly purchased, in fact it is the husband who assumes control over them after the couple returns to the community.

IV. CST PROJECT OPPORTUNITIES

There are numerous opportunities for supporting CST in Cameroon, both within the context of small-scale enterprise and community development. The small-scale agricultural equipment industry in Cameroon is an obvious candidate, and is described in this section along with some project ideas. A range of possibilities for introducing CST at the village level are also identified.

A. Small-Scale Enterprise

1. Recommendations for an Appropriate Technology Program in the North

Although AID is not currently supporting the nascent, underdeveloped agricultural equipment industry in Cameroon, there are numerous opportunities here for promoting the dissemination and adoption of capital saving technology. Some of these have been documented in a paper commissioned by AID in October, 1978, titled "A Preliminary Study of the Applications of Appropriate Technology in the North Province of Cameroon."¹⁵ It was written by an American technician and entrepreneur, Carl Bielenberg, who worked several years with CENEEMA and has since set up his own workshop in Bafoussam in West Cameroon. Mr. Bielenberg is highly respected both within AID and by his colleagues throughout Cameroon for his insights, experience, and expertise.

The existing need for simple agricultural tools and machines in the north justifies a program for supporting local production of appropriate devices, according to Mr. Bielenberg. He recommends a range of project activities:

- Train local technicians to manufacture, test, modify, and evaluate prototypes that meet local needs, and assist them to find jobs in private workshops. (This is partially being done by the Centre Technique de Maroua, described later in this section).
- Provide to existing workshops raw materials and reliable transport.
- Undertake market surveys of equipment already successfully introduced into local markets to determine how and why these technologies were disseminated and adopted.
- Where necessary, establish a credit fund for small producers and consumers.
- Promote the exchange of information with CENEEMA and other agricultural equipment R&D organizations, both in Cameroon and abroad.

In his paper, Bielenberg documents current applications of locally produced equipment and identifies some of the technical, economic and social constraints to broader introduction and use. He also reviews and evaluates existing technical schools as prospective sites for training entrepreneurs in the manufacture of simple tools and equipment.

According to Bielenberg, the most promising organization to implement this program is the Centre Technique de Maroua.

2. Centre Technique de Maroua

This school is developing a cadre of technicians capable of fabricating and repairing a wide range of products appropriate to the north, including household items, improved forged tools and construction equipment. Operated by the Union of Baptist Churches in Cameroon, it offers practical training courses in general and auto mechanics, and welding. All products maximize the use of locally available materials.

According to Bielenberg, the center is the institution most actively involved in the development of relevant prototype devices in the north, and is a strong force in encouraging the development and diversification of local industry.¹⁶ For these reasons, and because of its central location in the north, the Centre Technique de Maroua can make a significant contribution to programs designed to strengthen and expand local industry. Also, the center's practical training program is a model which could be replicated elsewhere in Cameroon.

3. CENEEMA

This is an agricultural engineering R&D organization situated in N'Kolbisson on the outskirts of Yaounde. Established jointly in 1974 by the Government of Cameroon and the Federal Republic of Germany, CENEEMA (1) develops prototypes which can be constructed with local materials and (2) tests imported models and adapts them to Cameroonian conditions. Experimental work has been conducted on a range of products, from simple hand tools to more expensive, mechanized agricultural equipment. A product and price listing is reprinted in Table 3.

The major problem facing CENEEMA, according to the Cameroonian co-director, Mr. Ela Evina, is outreach: moving the technology from CENEEMA's workshop into the hands of small manufacturers and ultimately the farmers. In an effort to bridge this gap, they are providing financial and technical assistance to a nearby entrepreneur.¹⁷ However, they lack funds and staff to expand this effort to include entrepreneurs in other regions of Cameroon.

Mr. Evina identified what he believes are the next steps in disseminating the prototypes:

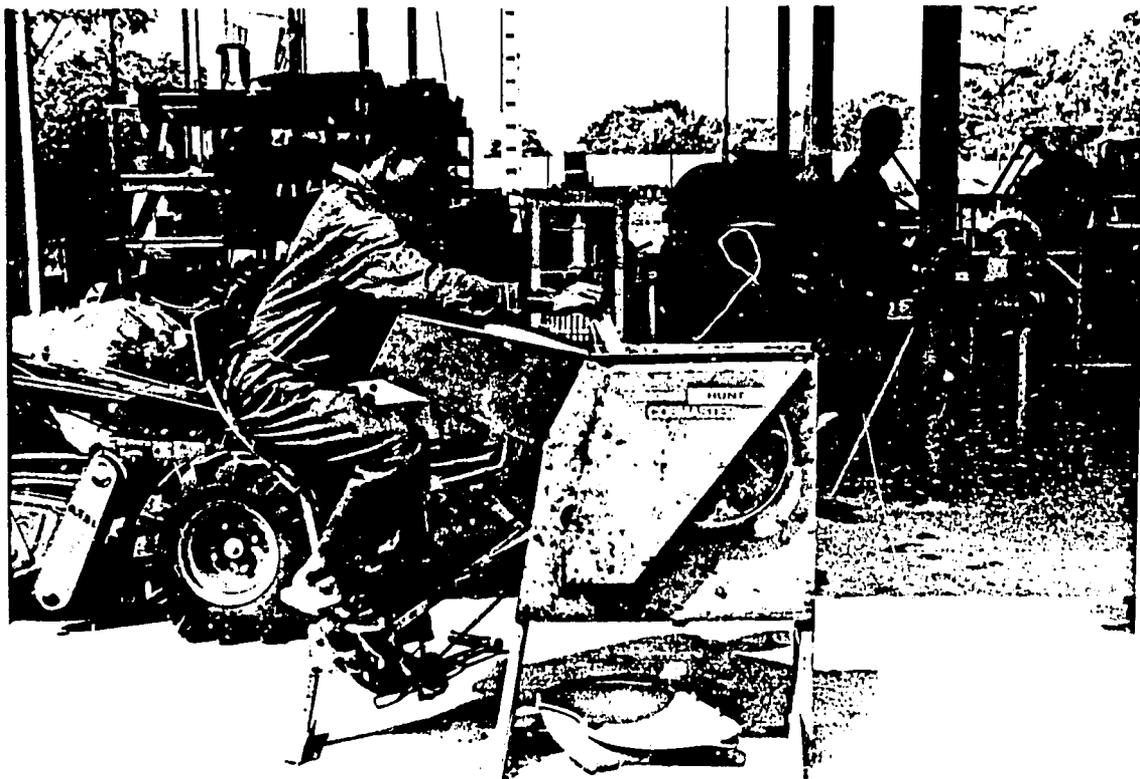
- Identify entrepreneurs throughout the country who could fabricate the tools/machines.

¹⁶Carl Bielenberg, "A Preliminary Survey of the Applications of Appropriate Technology in the North Province of Cameroon."

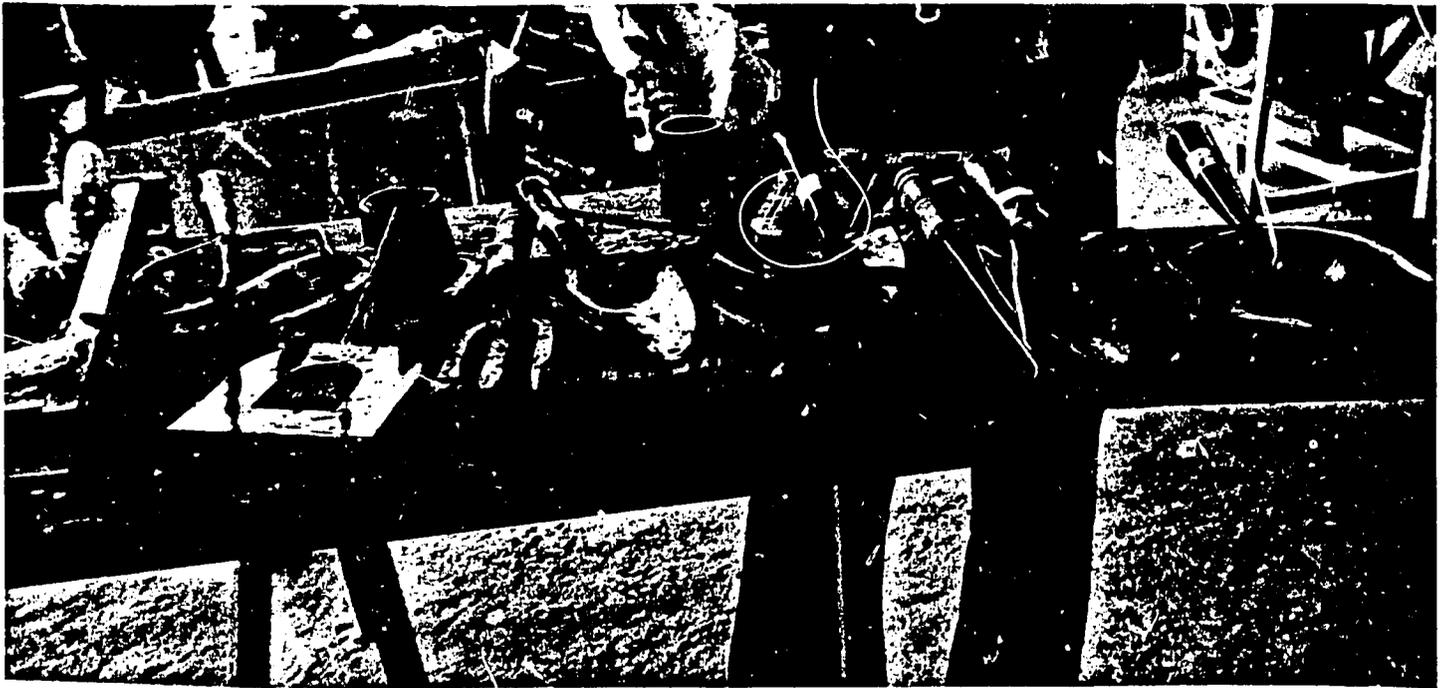
¹⁷This entrepreneur works at CENEEMA on a part-time basis and spends the remainder of his time at his workshop, which is within walking distance. CENEEMA gave him an initial investment loan of \$7,000 to be repaid after a grace period.



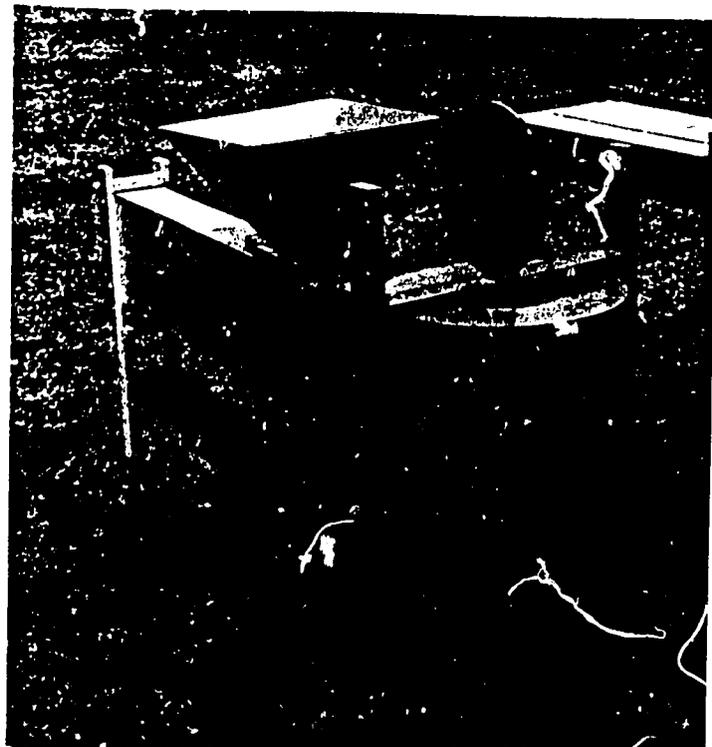
Metal hand corn shellers at CENEEMA. Different sizes and shapes accommodate different sizes of ears.



CENEEMA is testing this British model of a bicycle-powered corn sheller/winner for possible production in Cameroon.



Metal hand tools fabricated at CENEEMA.



Prototype of a winnower for corn or peanuts built by CENEEMA. It is made from wood.

Table 3. Agricultural Implements Available From CENEEMA

| ITEM | PRICE (CFAF) | PRICE (\$) |
|---|--------------|------------|
| A. <u>AGRICULTURAL HAND TOOLS</u> | | <u>1/</u> |
| Garden Weeder | 350 | 1.75 |
| Garden Hoe | 450 | 2.25 |
| West Indies Hoe | 500 | 2.50 |
| Dibber (Shovel) I | 300 | 1.50 |
| Dibber (Shovel) II | 400 | 2.00 |
| Hoe I | 450 | 2.25 |
| Hoe II | 550 | 2.75 |
| Cacao knife I | 300 | 1.50 |
| Cacao knife II | 375 | 1.87 |
| Dung fork (hay fork) | 450 | 2.25 |
| Drag for root crops | 500 | 2.50 |
| Watering can | 2,750 | 13.75 |
| Sickle | 800 | 4.00 |
| Weeding hoe | 1,700 | 8.50 |
| B. <u>MACHINERY</u> | | |
| Peanut-groundnut sheller | 30,000 | 150.00 |
| Winnower | 22,000 | 110.00 |
| Winnower with sieves | 57,000 | 285.00 |
| Rice thresher (drive with pedal) | 20,000 | 100.00 |
| Rice thresher (drive with bicycle-wooden frame) | 25,000 | 125.00 |
| Rice thresher (drive with bicycle-steel frame) | 29,000 | 145.00 |
| Seed drill for 3 rows (with brush wheels) | 25,000 | 125.00 |
| Seed drill for 3 rows (with force feed rollers) | 30,000 | 150.00 |
| Jab planter | 9,000 | 45.00 |
| Corn sheller - Type A | 100 | .50 |
| Corn sheller - Type B | 150 | .75 |
| Corn sheller - Type C | 200 | 1.00 |
| Corn sheller - Type D | 300 | 1.50 |
| Direct dryer for rice | n/a | n/a |
| Corn mill (drive with engine) | 55,000 | 275.00 |
| Cassava grater (drive with engine) | 45,000 | 225.00 |
| Cassava grater (drive with bicycle) | 45,000 | 225.00 |
| Palm oil press | 65,000 | 325.00 |
| Palm kernel crusher | 55,000 | 275.00 |
| Block making machine | 70,000 | 350.00 |
| C. <u>EQUIPMENT FOR POULTRY AND FOR RAISING OF OTHER SMALL ANIMALS</u> | | |
| Poultry drinking bowl (waterer) - 3.5 litres | 1,225 | 6.12 |
| Poultry drinking bowl (waterer) - 5.5 litres | 1,300 | 6.50 |
| Poultry drinking bowl (waterer) - 8.0 litres | 1,425 | 7.12 |
| Poultry drinking bowl (waterer) - 15.0 litres | 3,450 | 17.25 |
| Poultry feeder - 11.0 litres | 1,350 | 6.75 |
| Poultry feeder - 14.0 litres | 1,550 | 7.75 |
| Poultry feeder - 18.0 litres | 1,750 | 8.75 |
| Brooder (chick-brooder house) | 9,750 | 48.75 |
| D. <u>HOUSEHOLD MACHINES</u> | | |
| Coal and wood stove (4 and 5 pots) I | 65,000 | 325.00 |
| Coal and wood stove (4 and 5 pots) II | 80,000 | 400.00 |

1/ Exchange rate is 200 CFAF = \$1

- Determine the minimum necessary equipment for fabricating the prototypes. This will vary depending upon the sophistication and complexity of the tool or machine.
- Determine needs and potential market demand, by region. This will vary greatly in the Cameroon, given its ecological diversity.
- Identify sources of credit for both producers and consumers.

Mr. Evina also shared some of his views about why the equipment has not been more widely adopted. First, few people are aware of its existence. Although CENEEMA has established three field stations in Bambui, Nangaeboko and Garoua, lack of personnel and funds have precluded them from holding demonstrations in market towns and villages. A second and related problem is the resistance of some villagers to change. Mr. Evina believes this is particularly true with people who are isolated, uneducated and unfamiliar with the new devices and techniques. This can in part be overcome by demonstrations. And third, lack of credit may pose a serious constraint to interested buyers. Obtaining a loan from FONADER, the government agricultural credit agency, is reportedly quite complicated and, of course, small farmers with little or no equity are very poor risks and stand little chance for getting a loan application approved. However, FONADER is reportedly making an effort to decentralize its program. They are also willing to set up special loan programs with other organizations, such as SODECOTON and IUCW. A similar program with CENEEMA should be explored.

In June 1980, CENEEMA in cooperation with the German Foundation for International Development and the Cameroon National Organization for Scientific and Technical Research (ONAREST), will hold an international conference on "Mechanization at small-scale farm level in the humid tropics of West and Central Africa." Scientists, administrators, and manufacturers from throughout Africa have been invited to participate. Similar meetings that facilitate dialogue among Third World Countries on technological problems and appropriate solutions should be encouraged and deserve support from AID.

4. Tropic.

The Société des Forges Tropicales, commonly known as Tropic, manufactures a variety of tools for agricultural, forestry and industrial use. At the present time they are producing two major categories of agricultural equipment: hand tools; and more specialized equipment including animal traction and wagons. Experimental work is underway to develop a third product line: tractors. Interestingly, there is no direct contact between Tropic and CENEEMA, although the latter has on occasion tested and modified Tropic implements.

Tropic was established in 1964 and is a subsidiary of Bastos, a multinational corporation with majority French ownership. The entire line of equipment is fabricated at the company's factory in Douala, which employs about 250 people. Tropic has a virtual monopoly on the agricultural equipment market in Cameroon. Most of their output is sold in bulk to large parastatal organizations such as SODECOTON, SEMRY, FONADER, or

the Centers for Training Farm Families, and then resold to farmers, frequently at a subsidized price.

The implications of Tropic's existence for the development of local small-scale farm enterprises is unclear. The distribution of their hand tools and animal traction equipment through government agricultural production programs has exposed many people to these devices as well as develop a market for them. However, Tropic's monopoly on the industry, as well as substantial government subsidies, may dampen the growth of a competitive local industry. Although many users have expressed dissatisfaction with the Tropic equipment, it is not possible to determine if local entrepreneurs could fabricate higher quality models at a competitive price.

5. Technoserve.

Technoserve, a U.S. non-profit organization, is currently exploring project possibilities in Cameroon. They offer technical, managerial and financial assistance to locally owned self-help enterprises in the following areas: livestock; processing of agricultural products; and savings and credit. In Africa, Technoserve has programs underway in Kenya and Ghana.

B. CST for Community Development

A number of organizations working at the community level are developing project proposals for promoting CST in Cameroon. Information about these organizations and their respective project ideas is presented below. They are candidates for AID support.

There is a growing need to coordinate the proliferation of CST-type project activities in Cameroon. If AID decides to provide support to these efforts, it should encourage the Government to establish a coordinating committee whereby information can be shared and duplication avoided.

1. Village Grain Storage.

In mid-1976, the Development Commission of the Federation of Evangelical Churches and Missions in Cameroon (FEMEC) undertook an investigation of current grain storage practices in Cameroon and designed a grain storage program. The team concluded that the success of the program would rest upon the identification and promotion of tested, proven, and effective techniques. Therefore, it was proposed to construct and test a range of inexpensive storage units, either for individual or group use, and to calculate the cost-benefit ratios for each. Recommendations on the best units for each region would then be made. To date, no sources of funding have been found for this program.

Information and photographs on the different traditional storage systems being used in Cameroon were compiled during this investigation, which was funded by the World Council of Churches and the Rockefeller Brothers Fund.¹⁸

¹⁸ Information on both the preliminary study and the proposed program can be obtained from Mr. Kolewang, Chief of the Grain Storage Programme, FEMEC.

2. Labor Saving Technology for Women.

The Women's Service in the Department of Community Development is seeking support for introducing labor saving technology to village women. With some seed money from the Embassy Self-Help Fund, a woman's collective has recently purchased three groundnut hullers from C^oNEEMA. The Women's Service would like to assist other groups to identify sources of funding, obtain the equipment and learn how to operate and maintain it. A proposal is now being drafted for submission under the AID Africa Regional Improved Rural Technology Project.

3. Training Village Blacksmiths.

There is a growing need for local blacksmiths capable of maintaining and repairing simple agricultural tools. The International Union for Child Welfare and the Centers for Training Farm Families are drafting a joint proposal to provide short-term training to ten village blacksmiths annually at one of the existing centers. Upon completion of the course, each graduate would receive a subsidized package of materials and equipment. This proposal may be submitted to AID for funding under the AID Africa Regional Improved Rural Technology Project.

4. Peace Corps.

Peace Corps/Cameroon is considering the possible role volunteers can play in introducing appropriate technology. Volunteers typically live and work in villages and have ongoing, personal contact with potential beneficiaries. For these reasons, they are ideally situated to work with villagers to identify both needs and technological solutions, and to construct prototypes using available resources. A Peace Corps volunteer who recently attended a regional appropriate technology meeting in Mali is formulating a tentative program which includes the following elements:

- Train in-service and new volunteers in promising applications of appropriate technology in Cameroon;
- Provide volunteers with information on appropriate technology;
- Establish an appropriate technology resource library at Peace Corps headquarters in Yaounde;
- Provide volunteers with seed money to enable them to construct and test prototypes for village use.

If Peace Corps decides to move ahead with this program, they could benefit from some AID support, particularly for establishing a "seed money fund" for volunteers.

5. UNICEF Appropriate Technology Proposal.¹⁹

At the request of the Ministry of Social Affairs of the Government of Cameroon, UNICEF has recently drafted a preliminary proposal for a study which would identify possibilities for promoting appropriate technology in Cameroon, with a focus on the potential impact of appropriate technology on the lives of women and children (and ultimately the family.) The request was made following the publication of a UNICEF study on village technologies for women and children in West and Central Africa.²⁰ A meeting was held in February, 1980 in Yaounde to discuss the proposal and was attended by representatives of UNICEF, Ministry of Social Affairs, the Women's Service of the Department of Community Development, Pan African Institute for Development (PAID), CENEEMA, and the Provincial Delegate for National Education. Agreement was reached on the major guidelines of the three month study, which will include the following:

- Review of how appropriate technology is currently promoted, and recommendations for strengthening the diffusion process.
- Summary of how and why a particular technological solution is chosen, and the development of objective criteria for the evaluation of these choices.
- Recommendations for strengthening two aspects of diffusion: sensitization and training; and production of local technologies.
- Review of existing credit systems and recommendations for making credit more accessible to both consumers and producers in rural areas.
- Proposals for incorporating appropriate technology into non-formal education and primary health care.

6. PVO Coordinating Committee.

Fifteen private voluntary organizations (PVOs), both international and local,²¹ have organized a Coordinating Committee of Resources and Activities for Community Development. This committee can potentially play an active role in stimulating the exchange of ideas as well as providing a resource to organizations/individuals interested in testing prototypes. They have recently received a small grant from PACT, and have established a secretariat.

¹⁹ This information was obtained from a report on the UNICEF meeting of 6 February 1980, prepared by Miriam Bergman of the Women's Service, Department of Community Development.

²⁰ Philip Langley, Marie Ngom and Philippe David, Technologies Villageoises en Afrique de l'Ouest et du Centre en Faveur de la Femme et de l'Enfant, Study prepared by UNICEF/Abidjan and ENDA/Dakar.

²¹ To qualify for membership, local PVOs must work in more than one locality.

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APPENDIX 1

List of Persons Interviewed, January 17 - February 5, 1980

Paris, France

Didier Chabrol and Henri Ocde, G.R.E.T.

Daniel Thery, Centre International de Recherche sur l'Environnement
et le Développement

Internacional Union for Child Welfare, Centers for Training Farm Families

Chris Henny, Coordinator, Maroua
Moise Njoh-Sam, Director, Ecole Technique de Agriculture
Gabriel Serande, Director, Dadjamka
Mr. Egger, Builder, Guetele

Save the Children Foundation Community Development Project, Doukoula

Alan Miller, Director
Richard Embry, Project Manager
Suzanne Bibi Messi, Social Coordinator

Centre Technique de Maroua

Carl Hines, Mechanic

CENEEMA

Mr. Ela Evina, Co-Director
Mr. Schurig, Co-Director
Mr. Mofor, Director of Construction

Department of Community Development, Ministry of Agriculture

Andrew Ndonyi, Director
Agatha Nji, Chief of Women's Service
Miriam Bergman, PCV
David Karoff, PCV

USAID/Yaounde

James E. Williams, Director
Fritz E. Gilbert, Deputy Director
John B. Woods, Program Officer
Janet Schulman, Program Office
Eilene Oldwine, Public Health Advisor
Douglas Palmer, Project Manager, Practical Training in Health Education
Rudy Thomas, Education and Human Resources
Richard H. Goldman, Agriculture and Rural Development

Peace Corps/Yaounde

Constance Freeman, Director

FEMEC, Yaounde

Kolewang Metuge, Head, Grain Storage Program, Development Department

CARE/Yaounde

Ellis Franklin, Director

Tropic/Douala

D. Crochetet, Technical Director