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SMALL ENTERPRISE DEVELOPMENT IN THE KWILU-KWANGO SUBREGIONS OF BANDUNDU, ZAIRE

for

Le Centre de Planification Nutritionelle

(CEPLANUT)

and

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Submitted by:

May Rihani

Kathleen Stack

Partnership for Productivity,

International

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I. EXECUTIVE SUMMARY

*The Kwilu-Kwango has already one economic base, agriculture; which is insufficient to provide an adequate source of income to the majority of the population; therefore, there is a need to stimulate and expand a second economic base.

*The Kwilu-Kwango has enough resources to allow small enterprises to become a second economic base. Those resources are the following.

A number of rich and diversified natural resources which provide raw materials, such as water, wood, palm trees and fiber exist to a large extent in the Kwilu and to a lesser extent in the Kwango.

There is a large and widespread demand for many products which at present are made outside the region but could be produced locally from the existing raw materials.

Production techniques needed require a minimum initial investment, and skills needed either exist or could be taught easily.

Small scale enterprises to produce these products prove to be financially viable.

*For successful start-up and establishment of small businesses certain constraints need to be taken into account.

Widespread corruption causes taxes, bribes and fines to be an inhibiting factor in the start-up of small scale activities.

An absence of management and business skills coupled with clan rights to products and profit hinders the process of small businesses.

High costs of transport contribute to serious bottle-necks including supplying and stocking of materials and equipment necessary for production.

*These constraints could be overcome and the seven products proposed in this report: soap, fish ponds, palm oil, sacks, carpentry, tanning and soil-cement building blocks, could be produced.

*In order to implement these activities effectively, an organizational infrastructure will be needed to provide technical assistance in business planning, management and bookkeeping; appropriate technologies; training; and to facilitate and ease obstacles hindering the process of successful small enterprises.

II. INTRODUCTION

A. Background of the Study

This study grew out of a real concern by many individuals at USAID/ZAIRE, the Center for Nutrition Planning, and those involved in health and development activities in the area of Bandundu, about the high percentage of malnutrition in the region. It is believed that a major factor contributing to the complex problem of malnutrition is the lack of an adequate source of cash income causing people to sell most of their agricultural produce to pay for school fees, medicines, legal and illegal taxes, clothing, salt, soap, and other household needs. This creates localized food shortages and, consequently, people do not eat enough food, nor the variety necessary to fulfill good nutrition requirements.

The goal of this study is to identify and research possible non-farm rural income generating projects for small farmers in the Bandundu region of Zaire, to help combat this problem.

The terms of reference are the following:

1. Develop a list of 5 to 10 items that can be manufactured within the households of rural Bandundu or by small groups of villagers. Items should be produced from local materials. The products produced should not require the use of highly technical, imported tools for their manufacture. They should be readily transportable and marketable in the urban centers of Bandundu, and should contribute to the general economic development of the region.

2. Prepare information regarding materials, production, markets, and contribution of the product to the socio-economic development of Bandundu based on the conditions, resources, opportunities and constraints encountered.

This study is based on data collected in parts of the Kwilu and Kwango subregions of Bandundu; therefore, all information and recommendations are specific to the Kwilu-Kwango area.

The study will identify the trends influencing small business development in the Kwilu-Kwango subregions from an economic perspective. These trends form the basis for the choice of production activities identified to have the greatest potential for increasing revenue for low income people in the Kwilu-Kwango region given existing socio-economic conditions.

Proposed products will be assessed individually through analyses of existing markets, availability of raw materials, supplies, and equipment, required production techniques and skills, and financial feasibility.

The constraints to the establishment of small-scale enterprise will be discussed, as well as long range potentials for productivity in the Kwilu-Kwango sub-regions.

The places visited during the study were Kinshasa, and the sub-regions of Kwilu and Kwango in the Bandundu region. Three zones of the Kwilu were studied: Kikwit, Bulungu, and Gungu; and one zone in the Kwango: Feshi.

Meetings were held with private and government development organizations in the cities, towns, and villages of Kwilu-Kwango where they are working. Others interviewed included vocational school staffs, teachers, and students, labor union officials, the director and various employees of a

large palm oil processing plant, women's groups, medium and small business people, rural extension agents, vendors, artisans, craftsmen and fish farmers.

B. Overview of the Kwilu-Kwango Subregions

The Kwilu-Kwango is a region of large forests and savannahs traversed by numerous rivers and streams. The topography of the Kwilu sub-region varies from forest to savannah, and from a very hilly landscape to plains, while the Kwango has a larger number of vast stretches of savannah plateaus, and fewer forest regions. Generally, the Kwilu is richer in natural resources such as trees, fibrous plants, and good soil, than the Kwango.

The economy is largely agriculturally based. According to Louise Fresco's 1981 FAO Report, 86% of the rural population sampled (excluding the cities of Kikwit and Bandundu) in the Kwilu sub-region, consider themselves agriculturalists. Women make up 93% of this figure. Four percent mentioned having a regular job, either as an artisan or commerçant, all of whom were men.[1] The largest city in the Kwilu-Kwango, Kikwit, has a population of approximately 155,000 people of whom only 7.8% were wage earners in 1980.[2]

Small cultivators in the Kwilu-Kwango produce mainly manioc, maize, rice, peanuts, and squash. Secondary crops include voandzou, millet, yams, sweet potatoes, and hot peppers. Small cultivators sell most of their produce

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1) Fresco, Louise, "Le Milieu Rural et son Developpement au Kwilu", UNDP-FAO Study, Kikwit, June 1981, p.8.

2) Reid, Elizabeth "Socio-Economic Base-Line Survey for the Kwilu Road Building Component of the Agricultural Marketing Development Project." USAID, Kinshasa, May 1982, p. 33.

of malnutrition. Soaring prices and the high rate of inflation are likely to continue. at very low farm-gate prices to commerçants. They then purchase goods and services for prices disproportionately high compared with income received for farm produce. The recent devaluation of the Zaire, (September 1983) from 6 Zaires to the dollar, to 30 Zaires to the dollar has greatly increased this inequity in price structures making it extremely difficult for a farmer to purchase basic needs, including food, a condition which augments the problem

Weak infrastructure aggravates this problem as most roads are very poor and transportation between producers and markets is difficult. There is little electricity in Kwilu-Kwango save a few hours a day in the city of Kikwit, with the exception of projects, missions, and large commerçants with private generators. The major energy source for most of the population is wood gathered locally. Basic education and health services reach most rural areas. It is estimated that 68%[3] of adults in the Kwilu subregion attended at least three years of primary school. Education receives high priority in the Kwilu as demonstrated by the fact that between 3 and 11%[4] of the family

3) Fresco, op. cit., p. 13.

4) Fresco, op. cit., p. 47.

budget was spent on school fees in 1981. However, the educational system in general does not provide agricultural or technical skills necessary to improve the existing economic situation.

C. Relation of Small Business to the Improvement of Agricultural and Economic Productivity Leading to Improved Nutrition

Small business development means assisting individuals or groups of people to establish or improve small scale enterprises. This is done with management assistance through a process of training in planning, marketing, and accounting; technical assistance to provide appropriate technologies that are more productive; vocational education to upgrade income earning skills; and training in the appropriate use of credit and/or banking services.

The establishment and upgrading of viable small scale economic activities will have an important effect on the overall economy: more and better production activities lead to a greater quantity and quality of available goods. When small-businesses produce goods locally which would normally be imported from outside the region, they reduce the costs of thosegoods through decentralizing production. Accessibility to goods at reduced cost and of improved quality will decrease the inequity between farm-gate prices and prices of manufactured and other goods. In addition, some of the goods likely to be produced will be those necessary to the agricultural production process; therefore, production will be facilitated through easier access to inputs and lower prices.

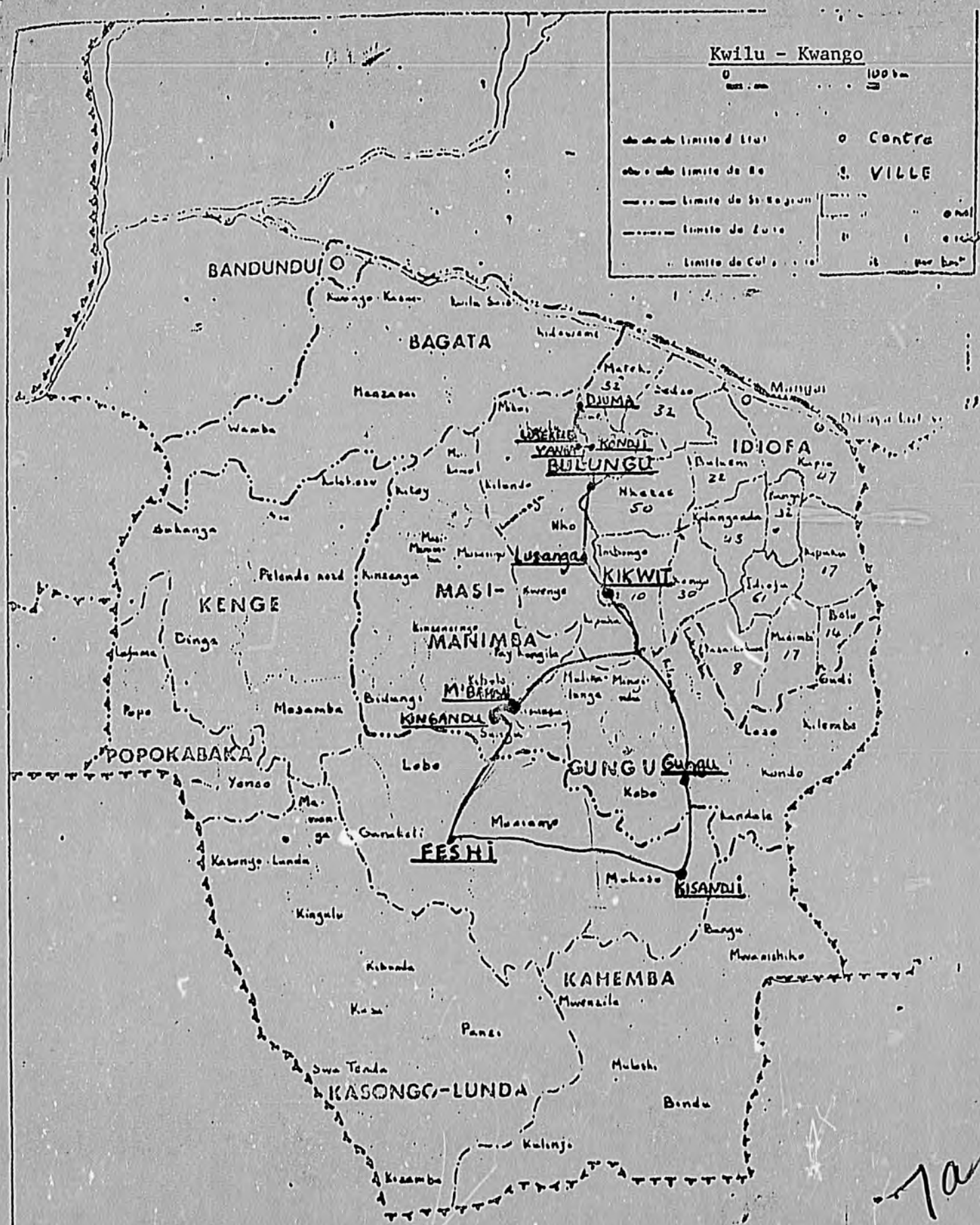
In general, increase in small business productivity also means more employment and a subsequent increase in revenue, thus increasing individual

purchase power. Both an increase in purchase power and easier access to products of lower cost, lead to improved economic status which may result in improved nutrition.

However, increased revenue and agricultural production inputs alone are not sufficient to decrease malnutrition. To improve the overall socio-economic situation, there must be a well-integratd holistic approach to development planning and projects. In the Kwilu-Kwango there are a number of development projects, being implemented by a variety of bilateral, multi-lateral and private voluntary organizations which include infrastructure building, agricultural production, diversification and marketing, health and nutrition education, and animal husbandry. There is a small, but insufficient effort to establish more appropriate educational systems through vocational and agricultural training. There is very little, if any effort to assist the development of small enterprises in the region.

Small business development is an essential component of the development process and is of critical importance in the rural economy as a whole as it adds value toward stimulating agricultural production. Small business also stabilizes the rural economy by providing employment which helps stem rural to urban migration. When small business or any other component is weak or absent the development process cannot be fully effective. This study demonstrates how the promotion of appropriate small business activities within the context of the overall development process, will contribute to the socio-economic development of the Kwilu-Kwango in general and, possibly, in the long term, to a decrease in malnutrition.

Consultants' Field Area of Study



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III Status and Trends of Socio-Economic Components Related to Small Enterprises in the Kwilu - Kwango

Small enterprises contribute to the development of a diversified, self-reliant and self-sustaining local economy. Small business can be, like agricultural production, one of the vital economic bases of a region; and is fully interrelated to other socio-economic activities. Components such as raw materials, transportation systems, marketing systems and others have a direct and immediate value and corrolation in stimulating and supporting the development of private enterprises in the region.

One aspect of small business is processing local produce and/or manufacturing local raw materials that leads to adding value to the product and creating more sources of income and more jobs. This local productivity adds value to the economic dynamics of the region.

To understand the status of small business in Kwilu-Kwango an examination of the different components of economic productivity is required.

A. Raw Materials

A variety of natural resources and raw materials such as water, wood, fiber and palm trees, exists in most of the Kwilu region and in some parts of the Kwango region. Nearly all natural resources such as palm oil and fiber are transported to Kinshasa, and sold at extremely low prices to big manufacturing firms. For example, palm oil is processed and manufactured into soap and margarine, fiber is manufactured into sacks, bags, ropes and mats. The new products are transported back to the Kwilu-Kwango and sold at

high-prices. Due to the centralization of production in Kinshasa, the population of Kwilu-Kwango is paying for the product, the cost of transporation twice, the Kinshasa labor, and for the Kinshasa overhead and management costs. By decentralizing and manufacturing locally for Kwilu-Kwango the population will be saving on the transporation costs, and paying less for labor and management, as well as creating new sources of income in their own region.

B. Transporation System

The Bandundu is a very large and not heavily populated region in which rural and intercity or intertown road infrastructure has not been maintained. The exceptional cases of maintenance are not the result of the work of the Office des Routes but rather the work of the private sector such as: missions, commerçants and large firms. The Office des Routes in Bandundu gives the following data for the Kwilu as a whole, that is, for the zones of Idiofa, Bulungu and Gungu: the network consists of 1,231 km. of national roads and 1,179 km. of regional roads, all of them except 193 km. are made out of earth.[5].

Because of long distances and the quality of the road network, road access and road transportation is costly. Small farmers and small entrepreneurs' access to bulk transport is extremely difficult given the low traffic volume and the costs per ton mile. A study done by Reid in May 1982 calculated that the cost per kilometer for a 10 ton German 4-wheel drive truck is at 7 Zaires.[6] Given the devaluation of the Zaire the cost per kilometer

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5) Reid, op, cit., p. 107.

6) Ibid. p. 104.

for that same truck in November 1983 might be 30 to 35 Zaires. Haulage capacity and frequency of services in the Kwango is even smaller than the already minimal capacity in the Kwilu; and given the longer distances and the bad quality of the roads in some parts of the Kwango: Gungu and Kisandji, for example, transportation costs in this sub-region become an even more acute problem. An added dimension to the problem of the costs of transportation, is the high frequency of taxing and fining by government agents on the road.

Field work shows that there seems to be a direct tie or corrolation between the condition of the roads, the distances, and the access to the produce on one hand; and the price of the produce on the other.

C. Skills

The educational system in Zaire gives priority to traditional, regular, formal education systems over vocational or technical ones. In the Kwilu-Kwango region there is only a small number of vocational or technical schools. The majority of these schools focus on mechanics or commercial studies. Only a very small number of vocational schools teach carpentery, and none teach masonry or black-smithing. The Kwilu-Kwango region used to have, before independence, a number of vocational schools for masons and carpenters. With independence, many of these schools closed down and the policy of "regrouping" vocational and technical schools decreased the level of decentralisation that existed. By decreasing the level of decentralisation of vocational schools and given the difficulty and the cost of transportation,

student access to those schools decreased tremendously. More importantly, because of the closing of the masonry and blacksmithing schools, those two types of skills are fading from the Kwilu-Kwango region; hence, the few masons and blacksmiths that exist, are old and use techniques dating from before independence. The very few young masons and blacksmiths that exist are usually trained on the job in the different workshops/ateliers of the various missions. With regard to schools training mechanics, the problem is reversed. The number of these schools and the number of mechanics that graduate from these schools is greater than the need of the region, the absorptive capacity of the region is much smaller than the number of mechanics being produced yearly. This phenomenon contributes to the migration of the young men of the region to Kinshasa or other urban centers with the hope of finding a job. Even though the number of schools teaching carpentry has decreased since independence, there are still a number of them in the region. The curriculum used at these schools indicates that only technical skills are being taught; management and long term planning are totally neglected. As a director of one of the vocational schools put it: "We are teaching our students a skill that gives them only one option, finding a job. It does not give them the option to start their own private enterprise. That is perhaps why so many are unemployed or underemployed and end up migrating. We might have to change our way of teaching them if we want them to take more initiative."

Other skills are found in Kwilu-Kwango through either experimentation such as soap-making and tanning, or through non-formal education and training programs offered by the different missions and Peace Corps such as raising

small animals and setting-up fish ponds. Again no management skills are being taught through these non-formal education programs. The lack of long term planning and management techniques, as well as poor bookkeeping skills, are apparent obstacles for the sustained success of an enterprise, and until technical assistance is given in the areas of bookkeeping, administration management and planning, small enterprises will not be able to be launched and sustained in a successful manner.

D. Production

The major economic base of the Kwilu-Kwango region has been and still is agricultural production. In the studies done by Fresco and Reid on the Kwilu region the data from 1960 to 1981 highlights a change in the pattern of production from food crops exclusively for self-subsistence, to production mainly for the commercial market. In the main markets of the cities, towns and villages of Kwilu Kwango a diversity of agricultural production is found. For the purpose of this study there is a focus on the non-agricultural products of the region. The non-agricultural products that are found in the markets of Kikwit, Vanga, Djuma, Gungu, Feshi and other towns and villages of the region are not made in Kwilu-Kwango. In an informal survey carried out in the markets mentioned above the same question was asked of the commerçants of the main market place of each town: "what are the items that you are selling that are made in the region?" The answer, most of the time was none. When asked where the products they are selling were made, the majority of the time the answer was Kinshasa. The existing products in the markets of the regional towns other than the agricultural ones are: salt, sugar, soap, home utensils, canned food, textile and cloths, tools, equipment etc. Some of the products

that are sold the most, soap for example, are manufactured in Kinshasa with the palm oil that is produced in the Kwilu and sold to Kinshasa, then resold, processed, to the towns and villages of the region.

E. Marketing

A fairly complex system of marketing exists between Kwilu-Kwango and Kinshasa. There are three or four major points of marketing between a village and Kinshasa. For example, soap sold in Vanga most likely was bought first in Kinshasa by a wholesale commerçant from Kikwit, the major city in Kwilu. The second purchasing transaction was done in Kikwit by a merchant from Bulungu, a fairly big town between Kikwit and Vanga, and the third purchase made in Bulungu by the Vanga village merchant. Thus, the soap displayed in the Vanga market came from Kinshasa via Kikwit via Bulungo to Vanga. This is a regular channel for most, if not all, non agricultural products sold in the region. The centers of marketing are: from the production place in the big city, Kinshasa, for the majority of the products, to the major city in the region, Kikwit, to the major town in the region, Bulungu and finally to the village. Only in certain cases is the major town capable of skipping the phase of the regional city by going directly to the capitol. The channel through which agricultural products get marketed is the same one but in reversed order:

Sales of agricultural produce, manioc, for example:

Village farm gate	to →	Commerçant in same village	to →	Commerçant in town or city	to →	Commerçant in capitol
‖		‖		‖		‖
a woman small cultivator in Vanga		a woman or man in Vanga		a woman or man in Bulungu or Kikwit		a man in Kinshasa

Sales of non agricultural products, soap, for example:

Production firm gate in capitol	to →	Wholesale Commerçant in capitol	to →	Wholesale Commerçant in Regional Major City	to →	Commerçant in Town	to →	Commerça in Village
‖		‖		‖		‖		‖
a woman broker		a woman or man in Kinshasa		a man in Kikwit		a man in Bulungu		a man in Vanga

It is useful to note that the soap sold in Vanga is made out of palm nuts possibly sold from Vanga to the PLZ in Lusanga (Plantation of Lever Brothers in Zaire) that processed it into palm oil and sold it to MARSAVCO Kinshasa which in turn processed it and made it into soap and sold it back to Vanga through the three or four steps of purchasing described above.

The reasons for the breakdown of the channel of distribution, marketing and purchasing to three or four major points between Kinshasa and the village are varied, among them figures the cost of transportation per kilometer, the bad conditions of the roads and the infrequency of commercial vehicle traffic.

Within each of the major marketing centers, there are several sub-centers of distribution and marketing. Each big city or town in Kwilu-Kwango has a number of marketing places: the production place: home, atelier; the markets: big, small, daily, weekly; and the boutiques or shops: permanent or mobile.

The data collected on the pricing system indicates that there is a direct corrolation between the price of the product, the distance away from the production place, and the number of transactions. For example the price of a bar of soap, brand "Le Coq" made in Kinshasa, increases in price with the increase of distances and the increase in the number of transactions.

Prices Of One Bar Of Soap, Brand Le Coq

Kinshasa Grand Marche 6,50 Z	Kikwit Grand Marche 7,50 Z	Bulungu Marche 8,00 Z	Vanga Marche 9.00Z
Kinshasa Grand Marche 6.50 Z	Kikwit Grand Marche 7.50Z	Kikwit Boutique/ permanent Center of city 8.00 Z	Kikwit Boutique/mobile outskirts of city 9.00 Z

There is a very serious problem of obtaining supplies and stocks of various kinds of products on a regular supplying and stocking basis in rural areas resulting in difficult accessability in the rural areas. To be able to cut down on prices, some missions are cutting down the number of transactions that can take place between Kinshasa and their village. In Kingandu for example the Centre de Developement Rural of the Catholic Mission buys in bulk, from

Kinshasa, all kinds of products that the villagers of Kingandu and neighboring villages purchase. In the mission they built a large depot where they store these products and sell them daily at lower prices. The mission's depot had large quantities of soap, burlap bags, machetes, hoes, coupes-coupes, axes, plows, buckets, metal basins, sugar, salt, seeds, cloth and a diversity of agricultural products. Villagers were lining up daily to buy their basic needs at lower prices. Distribution centers of these kinds are needed to facilitate the problem of accessibility of villagers to various products in small quantities.

F. Management

The many interviews with small commerçants, as well as with carpenters, shoemakers, tailors and fish-pond owners, indicate that long term planning is not a notion understood by owners of these enterprises. The enterprises are run on a day to day basis. Bookkeeping is mainly done by memory and the owners are incapable of keeping up with the expansion and complexities of a growing enterprise. Another weak operational area in most of the existing small businesses is management. More important than the absence or weakness of some skills, is the clan pressure exercised by clan members over the individual who is showing some success. Discussions with Zairians highlighted the issue that the belongings of the individual are also the belongings of the family, the relatives and sometimes the neighbors. This traditional practice results in the fact that when an individual produces soap, fish or chairs; the members of the clan, can and will have access to the item of production without having to pay for it. The owner of a small enterprise does not have full control over the items he or she produces; he or she cannot count on the

full amount produced as a source of income. The clan members can come to the production place, home or atelier and request a certain proportion and consider the acquisition of the products a right; hence there is no control over what is produced.

The data gathered shows that even though group production or enterprises owned jointly by several individuals is extremely rare; a few experiments in "pre-cooperatives" or rather groups of people working together, are underway. Though it is too early to evaluate these experiences, the fact that they exist is an indicator of a certain potential.

G. Division of Labor

Women are overworked and men are not working. This sentence kept being repeated. In the Bandundu region women are the back-bone of agricultural production. Women plant, cultivate, weed, harvest, gather and sell; men clear the forests and do some gathering (palm nuts). According to Fresco's 1981 FAO[7] study, the sum total of the hours of agricultural field work done yearly by a typical Kwilu household are 1.562 hours and they are divided as follows:

Women	Work in the fields	1.106 hours
Men	Work in the fields	180 hours
Children	Work in the fields	276 hours

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7) Fresco, op. cit., p. 23.

Other than the agricultural field work women are responsible for gathering and transporting wood, carrying water, child care, and all household work. In the market place women and men are vendors. Women sell agriculturalproduce and men sell meat and most of which is imported from Kinshasa.

It was noticed that many new agricultural programs and rural integrated development programs, as well as technical institutes, are offering their courses or extending their new technologies basically to men. Few of these programs reach women and when they do, it is almost exclusively through men extension agents. It was also noticed that new techniques for cash cropsare being introduced almost uniquely to men, and that the technical assistance received by women is very limited. The most probable result of these tendencies would be that women will remain unskilled providers of food crops, while the men with access to imputs and training will enter directly into the cash economy.

Both women and men need the new technologies that would help them improve and diversify the quality and quantity of what they are producing. Both women and men need new avenues of income generation that would help their household obtain all the basic needs. If the existing trend of integrating basically men in the cash economy continues, a certain unbalance of the economy might take place.

H. Storing

The importance of storage to the economy of a region in general and to small business in particular is often underestimated. The amount of agricultural production available for consumption, sales and processing depends heavily on the adequacy of the storage facilities existing in the region. According to Reid's Socio-Economic Study of the Kwilu: "the losses in 1981 in the harvested crop due to inadequate storage, pests and a slow

buying system, was estimated at 10 percent for peanuts and rice, 50 percent for maize and 30 percent for manioc cossettes."[8] It is also estimated by agricultural extension agents that the losses of some vegetables, such as tomatoes, is as high as 50% due to the non-existance of cooling areas. The losses of fruit production such as mango can be even higher than 50% during the harvest season, also due to the non existance of cooling areas. A large number of small businesses depends on the adequacy of storing the raw material and or the supply needed to start the manufacturing process. This becomes an even more vital issue when the small business is food processing, such as fish salting, smoking or drying, grain milling, or food canning.

I. Credit

In Kwilu-Kwango access to credit is nearly non-existant for small cultivators, and small businesses. The conditions accompanying credit availability and the repayment of the loans are made in such a way that only well established farmers or business people have access to it.

Few marketing associations or cooperatives exist. The data about most of the farmers cooperatives reflects the fact that their members are predominantly men. Such farmers associations do not extend credit to the women cultivating the food crops.

The UNTZA, Union des Travailleurs Zairois, and AFECOZA, the Association des Femmes Commerçantes au Zaire seem to be experimenting with the provision of loans to members that are taking some inititative to start economic productive activities.

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8) Reid, op. cit., p. 68-69.

Other channels of moving money do exist, such as the Likelembas and the Muzikis. A Likelemba for example is an association that has as its objective to provide financial assistance to its members. A great number of women, even at the village level are Likelemba members and obtain "credit" in this fashion.

Start-up costs of a small enterprise are sometimes provided by the maternal uncle, or certain members of the clan. More research would be required to understand better credit channels and mechanisms. The Companie de Developpement Agro-Industrielle de Kikwit (CODAIK) is planning on bringing into the Kwilu region, three consultants; one on credit, one on agriculture and one on animal husbandry for a period of nearly five months to study credit mechanisms. The results of the credit study are expected in June 1984. It is recommended that a technical assistance program for ameliorating and launching small enterprise examine the complexities of the credit issues in Zaire.

21

Best Available Document

SAMPLE PRICES AND SALARIES

Product	Price in Z	Measure Weight	Town-Village	Produced or Bulk Purchased at
Soap "Le Coq"	7.50 to 9	one bar	Kikwit	Kinshasa
Soap "Le Coq"	8.00	one bar	Mutango	Kinshasa
Soap "Le Coq"	9.00	one bar	[illegible]	Kinshasa
Jaribu Soap	20 to 30	one bar	Kikwit	Kinshasa
Salt	2.50	a small tea glass	Kikwit	Kinshasa or Bas Zaire
Salt	3.00	a regular glass	Kikwit	Kinshasa or Bas Zaire
Sugar	30.00	a kilo	Kikwit	Kinshasa
Salted Fish	1 or 2	bite size	Kikwit-Vanga-Gungu	Kinshasa
Salted Fish	5.00	a small piece	Kikwit-Vanga-Gungu	Kinshasa
Smoked Fish	1200.00	big [illegible]	Kikwit	Kinshasa
Sacks	32.00	one	Gungu-Kikwit	Kinshasa
Palm Oil	10.00	beer bottle	Kikwit	Feshi
Palm Oil	110.00	a bucket	Kikwit	Feshi
Olive Oil	30.00	small bottle	Kikwit	Kinshasa
Olive Oil	230.00	7 rolling of beer	Kikwit	Kinshasa
Eggs	5.00	one	Kikwit	Sacre Coeur Mission
Fish Net Thread	.50	meter	Kikwit	Kinshasa
Strong Plastic Bag	4.00	one	Kikwit	Kinshasa
Transparent Plastic Bag	2.00	one	Kikwit	Kinshasa
Bamboo Chair	30.00	one	Kikwit	Kikwit
Wooden Chair	90 to 150	one	Kikwit Vanga	Kikwit-Vanga
School Desk	300	1 seats 2 students	Vanga	Vanga

Monthly Salaries*: Primary School Teacher, 4 [illegible] normal, 300 Z
Primary School Teacher, 6th, 450 Z
Nurse or Health Extension Agent 1st, 300 Z
Nurse or Health Extension Agent 2nd, 450 Z

Transportation: Round trip by bus; Kikwit, Kinshasa, Kikwit
Used to be 300 Z in 1980-[illegible]
Became 450 Z in 1982
And is now 480 Z in Nov. 1983.

* Allowances for transportation and medical expenses not include.

IV. Recommended Products

A. Criteria for Recommending the Products

Seven products or activities which would be the basis for the establishment of seven small-scale economically viable enterprises in the Kwilu-Kwango are suggested in this report. They are soap, fish ponds, palm oil, sacks, carpentry, tanning, and soil-cement blocks. This list is by no means a comprehensive list of small-scale income-generating activities which could be carried out successfully in the region. They are those which became most vividly apparent to the researchers during the month of study for the reasons described below.

Regional characteristics and variations between the Kwilu and Kwango subregions play a role in both the choice of the product and the area suggested for its development. The Kwilu, with its vast stretches of forests has an advantage over the Kwango which is poorer in natural resources, although it has great potential for cattle raising.

Three of the products are defined here as farm-related because they either increase food production such as fish ponds, and palm oil and/or contribute directly to improvement of the agricultural related economy, as do sacks.

The methodology, which served as a framework for analysis of each product, could be used to determine the economic viability of additional products if more research is desired.

The first and foremost reason for product choice is demand. For all but one product, market demand is high, well-established and exceeds

production. A majority of people not only want, but need this type of product and purchase it with frequency and regularity. The market, therefore, exists everywhere and requirements for transporting the locally produced product become insignificant.

The second consideration is the existance and accessability of raw materials, supplies, and equipment. For all the products, the major ingredient in production is available locally. That which is not available is either easy to fabricate or financially feasible to transport. All seven products require natural resources of the Kwilu-Kwango. Five of them depend either directly or indirectly on the forest: carpentry, palm oil, sacks, soap and tanning.

Transportation requirements are a third factor. These requirements are minimal for both obtaining raw materials, supplies, and equipment, and getting the product to market. Decentralization of both production and distribution is necessary for all the activities, to reduce transportation roadblocks.

The fourth consideration in choosing the product is the production technique. The technique is simple and requires only materials and equipment which are affordable and easy to handle and/or operate. Techniques build on experimentation and the introduction of appropriate technologies, and do not require expensive energy sources.The production techniques are also simple enough to facilitate possibilities of replication. The skills, if they do not exist already, are basic enough so that training is no obstacle.

Financial feasibility is a fifth condition for product choice. Production activity is profit making for the producer and reduces the cost the

consumer otherwise has to pay for the product if it is not produced locally. The product is more accessible to the small-scale buyer with limited purchase power, through decentralization of production.

The seven products proposed do not each necessarily meet all the above criteria, nor do they necessarily fulfill each condition completely. However, in general, they respond well enough to most or all of the criteria to make them economically viable small-scale business activities.

B. Products

SOAP

1. General Description of the Product

All purpose soap, in bars, is factory produced on a large scale in a few major cities of Zaire. Evidence shows that bar soap, which is made through a simple process of combining fat or oil with caustic soda or lime, could easily be produced on a small scale by individuals in the Kwilu-Kwango.

2. Market Analysis

a. Characteristics of Target Market and Analysis of Demand

Soap is one of the most widely purchased and highly valued items in Zaire. The entire population, both urban and rural, and men, women, and children alike, buy soap regularly. This includes even the lowest income households. Fresco's 1981 FAO Report states that, in the Kwilu, soap is the fourth most frequently purchased item. Ten percent of the family income is spent on soap, after food (35%), salt (18%), and clothes (26%).[9]

The importance of soap to the Zairian family cannot be exaggerated. A Zairian sociologist met during this study observed that if Zairians had a choice between eating and washing, they would rather wash. Research confirmed this attitude time and time again.

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9) Fresco, op. cit., p. 46.

Soap bars are found in a wide range of sizes; some bars are even cut into very small pieces which sell for as little as 1 Zaire a piece to permit even those with limited purchase power to obtain soap. This phenomenon is astrong indication of demand, since limited purchase power often has the effect of eliminating an item from the market altogether.

There are four basic categories of Zairian made bar soap. Two are not packaged: "Munganga" the red bar soap most used for the face and for babies; "Coq" a yellow-beige all-purpose bar soap. The two types of packaged soap fall into the categories of general body soaps or antiseptic soap. The packaged soap comes in many varieties and sizes. There is a substantial amount of imported soap, but demand appears to be less for it than for the Zairian soap. One shop in Kikwit sold eight different kinds of soap.

The cost of factory-made soap varies greatly from the capitol, Kinshasa, to remote rural villages. The lowest prices are found in Kinshasa where "Coq" soap sells for 6.50 Z. In Kikwit, the cost of "Coq" ranges from 7.5 Z's in the central market to 9 Z's at a small "boutique" on the outskirts of town. The highest price noted was 10 Z's in the rural town of Djuma, 163 k's from Kikwit. The lowest cost soap found was that made by a local Kikwit entrepreneur in his home. His all-purpose soap, the equivalent of "Coq" in size and color, cost 5 Z's a bar. The highest priced soap was a Kinshasa factory produced MARSAVCO brand antiseptic soap, Jaribu, selling for 35 Z's a bar.

The high demand for soap is bound to continue, particularly if local purchase power is increased and small scale soap businesses start up in the Kwilu-Kwango giving consumers access to locally made, lower cost soap.

b. Competition

All soap sold in the Kwilu-Kwango, not including imported European made soap, is produced by MARSAVCO, a large company in Kinshasa, and transported by truck to the Bandundu region.

The Kinshasa made soap follows the network of three major points of marketing: Kinshasa to big cities, i.e., Kikwit or Bulungu; cities to towns, i.e., Kikwit to Bulungu, Gungu or Feshi; and towns to the village, i.e., Bulungu to Vanga. Usually those who bring items such as soap into the region, are the same commerçants who are buying up agricultural produce, such as manioc, and selling it in Kinshasa. The price of soap increases with distance and transaction points in the marketing network. If and when soap is widely produced locally, the cost of transport from Kinshasa to the various market centers will be eliminated. The cost of transporting palm oil, the major ingredient of Zairian soap, from the Kwilu-Kwango to Kinshasa for processing, will be eliminated as well. In addition, labor costs are less in the Kwilu-Kwango than in Kinshasa.

c. Distribution

The local soap maker, Kwalatu, sells his soap only in the Kikwit central market at present. Once soap becomes widely produced locally, distribution will be facilitated by decentralization which means decreased distances between the production unit and the market. The small entrepreneur in Kikwit can sell his product in the three major market sub-centers in

Kikwit: home/workshop, the markets, and shops or stores. Village production will require distribution to surrounding villages. This will still mean a decrease in transportation costs compared with the present system of importing soap from Kinshasa, given distances and fuel costs.

Small soap producers may employ a few people to sell soap for them in the markets, or from village to village.

d. Promotion

There is such a high demand for all kinds of soap that the only promotion necessary is the existence of the product in the local market and nearby villages at a quality similar to Kinshasa and at a slightly lower price during introduction of the product to new markets.

3. Raw Materials/Supplies/Equipment

The ingredients for soap making are palm oil, caustic soda, and water. Palm oil is produced locally and available for 2.100 Z's/200 liter size barrel. Caustic soda must be purchased from Kinshasa and costs 8.000 Z's/200kg barrel. It is imported by a Kinshasa firm called HOECHST-Zaire. Wood is needed to heat the solution, and can be obtained easily locally at minimal or no cost. The only equipment needed is a wooden mold, table, and a cutter. The mold and cutter are made with some metal. All three items may be fabricated by a local carpenter. Cost depends on size which will vary with individual production levels; however, an average investment for these materials might be around 750 Z's.

The prices of caustic soda and palm oil are subject to inflation. Caustic soda will have to be ordered from Kinshasa and transported to the region through commerçants. It could become more attainable if soap making

becomes popular in the region, creating a demand which will encourage commerçants to open up distribution channels in regional cities and towns. There are other methods of making soap which substitute potash for caustic soda and could be used.

4. Skills and Production Technique

Soap making is labor intensive and can be done by one person. The Kikwit soap maker, Kwalatu, would serve as a model to anyone wishing to learn the soap making process. The method involves heating and mixing the water, palm oil and caustic soda, pouring it into the mold to sit for twenty-four hours, and cutting the finished block into small bars. The entire procedure can be completed in two days. In the Kwilu-Kwango there is for the most part, no existing soap making skill, with the exception of a few isolated cases of experimentation by both men and women. Launching a number of small soap making enterprises would require simple technical training in how to make the soap and, more importantly in the long run, training in business planning, management, and accounting. This training should be made available to both men and women. It should be responsive to specific needs, and may be intensive and short term with continuous and regular follow-up.

Once training is given soap making can become a part-time or full-time operation. The initial phase might be part-time to reduce risk, devote time to experimentation and diversification, and to adapt and integrate new skills.

5. Financial Feasibility

The following describes the business of Kwalatu, the Kikwit soap maker.

INITIAL INVESTMENT		COST (Zaires)
Mold		500
Table		150
Soap Cutter		100
Display stand in central market		50
		1.100
MONTHLY EXPENSES		
Materials:	1/7 barrel caustic soda	1.143
	1 barrel palm oil	2.100
Labor:	2 people X 30 days X 10 Z*	600
Fees & Tax:	Commercial registration fee	25
	Kikwit market 2 Z/day	60
		3.928
MONTHLY INCOME		
1700 Bars of Soap X 5 Z		8.500
	TOTAL PROFIT	4.572

*Based on average local pay scale for skilled laborers.

In one month Kwalatu can sell approximately 1,700 bars of soap. This is with no promotion or distribution outside the central market in Kikwit. His net profit after expenses for materials, labor, and fees comes to 4,572 Z's per month. This figure becomes more impressive when one takes into account the salaries of schoolteachers and nurses which range from 300 to 450 Z's per month. The initial investment cost is not taken into account as the equipment will not need replacing within five years and maintenance and repair is not necessary. The investment cost by itself on a per month basis is too small to be significant

One cost which is not mentioned is the expense Kwalatu incurs on trips he must take to Kinshasa to purchase caustic soda and transport it to Kikwit.

In all probability he travels about three or four times a year at most. The cost of a round trip ticket from Kikwit to Kinshasa is 980 Z's, not including the cost of transportation of the caustic soda, which is high. Despite this the soap making business is clearly a highly profitable one.

6. Specific Recommendations

The soap making procedure is simple, requires only a small initial investment, demands few supplies, and can be very profitable. These factors, combined with the high demand, make soap making an activity which could be started in both urban and rural areas in the Kwilu-Kwango with a high probability of success.

Management and business training requirements should not be overlooked, however. One woman experiementing with soap production in Kikwit went bankrupt due to a lack of understanding of business planning. She hired too many employees and attempted production at too large a scale from the start. The devaluation and subsequent rise in price of caustic soda took her by surprise and she could not meet her expenses. This type of problem is easily overcome with business skills training.

Resource people with experience in soap making who should be consulted are:

Kikwit: Citoyen Kwalatu
Mon Probleme Boutique
Avenue Mobutu

Citoyenne Gashama Lwamba
Union Nationale des Travailleurs (UNTZ)

Bukavu in Kivu Region:
Kapalati Tula
Agronome et Polytechnicien Rural

7. Case Study

The Soap Maker

Citizen Kwalatu was not always a soap maker. He entered the world of commerce after his discouragement with a job as tax collector in Kinshasa where he did not receive the salary due him for nearly six months.

Certain he would do better on his own, he set out with 400 Zaires in his pocket. He purchased a few simple items such as soap, cigarettes and matches, and sold them on the street for a small profit. With this profit, he was able to add new merchandise to his store each time he replenished his stock. Soon he became a small success. These achievements created problems for Kwalatu, as financial success does for many in Zaire. His brothers considered they had equal rights to Kwalatu's income and tried to usurp his earnings. Realizing that if he remained close to family members, he would be unable to set aside sufficient funds to reinvest in the continued growth of his business, Kwalatu decided to move to Kikwit in February 1982.

Kwalatu rented space in a building in Kikwit not far from the Grand Marche (central market) and now employs a nephew to run his "boutique" which sells everything from imported baby clothes to sardines.

When asked why he decided to become a soap maker, Kwalatu, who is 25 years old and has an eighth grade education proudly says, "I never wanted to limit myself". He recalls how he noticed the great demand for soap from his first days as a small merchant in Kinshasa. At that time he did some research and learned the process of soap making, filing his new found

knowledge in his memory for the day when he would have enough capital to invest in his own soap making business.

Today Kwalatu, without hesitation, rattles prices and figures off the top of his head to demonstrate the profitability of his venture which far surpasses that of his small store. The initial investment was small. Kwalatu asked a local carpenter to build him a large rectangular box lined with metal sheets to serve as a mold. The carpenter also made him a wooden table with a tray like surface above which is attached a wooden bar. Metal wires are fixed harp-like between bar and tray to facilitate cutting of the finished soap. Kwalatu's stove is made out of two old engine blocks sturdy enough to hold the metal barrel used for boiling the soap ingredients.

Kwalatu produces 1,700 bars of soap in two days with one 200 liter barrel of palm oil and one-seventh of a barrel of caustic soda. By the time Kwalatu uses up an entire barrel of caustic soda and seven barrels of palm oil, he has produced 11,900 bars of soap. At first he would send a boy to sell the soap door to door. Now, he has two boys working for him seven days a week selling soap at a stand in the central market of Kikwit. Kwalatu's soap sells very well. The equivalent Kinshasa factory made soap "Le Coq" sells for 7.50 Zaire while Kwalatu's sells for only 5 Zaires. His market boys told us that some days they sell as many as 100 bars of soap.

Kwalatu's business is sure to become more and more profitable. This is evidenced by his continuing efforts to improve his product. We left Kwalatu with three new recipes* for soap making and a few days later, on an unannounced visit, found him seriously studying them.

* Recipes from Kapalati Tula, Peace Corps Training Center, Bukavu.

His reputation is spreading, too. At the Lever Palm Oil Processing Factory in Lusanga, about an hour's drive from Kikwit, we asked administrators if they knew of any local soap makers from the Kwilu region. One told us the only one he knew was a young man named Kwalatu from Kikwit.

FISH PONDS

1. General Description

The Kwilu-Kwango is rich in rivers, rivulets, and springs. A tradition of fishing has always existed, but fish culture started after World War II by the Belgians to increase the availability of protein in the country. In Bandundu a law was introduced requiring every adult male to have a fish pond. With the Belgians, the concept of controlling the water in a pond and feeding fish was introduced. Fish ponds were neglected after independence until, in 1975, the Peace Corps initiated in the Bandundu area a technical assistance program for fish pond culture. The program started with five volunteers and now has fourteen working in the area. The volunteers give technical assistance on how to build ponds and how to cultivate fish but no planning, management and bookkeeping training is provided. The present Peace Corps-AID program does not envisage any new posts to assist fish pond cultivaters, and plans to phase out from the region of Bandundu over a period of several years.

The Projet Pisciculture Familiale (PPF) is an organization through which the government of Zaire expects to institutionalize the Peace Corps-AID program through training local extension agents. At present Projet Pisciculture Familiale is not yet ready to undertake the responsibility of being a support mechanism for fish pond owners.

Analysis of the information obtained on fish pond culture underlines the need for continuing this kind of technical assistance in order to sustain and solidify what exists already in terms of fish pond production, and more

importantly, to introduce this new technique to many other areas coupled with management, administrative and bookkeeping training.

2. Market Analysis

a. Characteristics of target market and analysis of demand

Fish is consumed by the different sectors of the population when available. It is an important source of protein in a region where malnourishment, specifically, Kwashiorkor, is prevalant. The demand for the product seems to be very high as evidenced by attendance at harvest time. When fish ponds are harvested once every six months, the harvest, which can be more than 100 kilos is completely sold within a few hours at the fish pond site. Owners of fish ponds do not even need to transport their production to the market. During field work, four projects with fish ponds were visited in Kikwit, Nzinda, Lusanga and Kondji; they all used the Tilapia Nilotica variety of fish; they all agreed on the fact that the demand far exceeds the production. The fact that the fish is fully sold out at the production site and does not need to reach the market to be sold emphasizes the existing great demand. Harvest days at different sites get to be known through word of mouth and on the day the site is inondated with purchasers waiting for their fresh fish.

b. Competition

There is only one other source of fresh fish in the Kwilu-Kwango region and this is the Kwilu river fish; but the high acidity of the river does not allow the existence of great quantities. Hence, competition is not a major factor. Despite two sources of fresh fish, demand exceeds the supply, and shortage of fresh fish continues to be an issue in the region. A

difference in price exists between the two kinds of fish, one kilo of fresh river fish sells at 50 Z in the Kwilu, while a kilo of fresh pond fish sells at 30 to 35 Z. Also, it should be noted that dryed, salted fish and smoked fish are found in the markets of the different cities, towns and villages of the region including the remotest villages. Salted fish comes from Kinshasa and is sold in small pieces at different prices. A very small piece, bite-size, sells at 1 Z, and a small piece half-hand size sells at 5 Z. Everyone buys fish. With less purchase power a lesser quantity is bought, but fish is rarely cancelled from the priority items of household purchases. Smoked fish is also sold in the markets. Often it comes from Yolo near the Kasai, and is sold either in small pieces or in bundles or in big containers (basins); a basin of smoked fish sells at 1.200 Z in the Kikwit market.

c. Distribution

While all varieties of non-fresh fish are transported through the marketing network by the major mode of transportation relying heavily on the trucks of the big commerçants, fresh fish does not need any distribution given the fact that it is sold at the fish pond site. The volume of demand is so great that it does not give fresh fish a chance to be sent to the market. All fresh fish is sold at "pond-gate".

d. Promotion

The promotion has already been done as people like fresh fish and buy it when there is an opportunity to do so. What needs to be promoted is the amount of fish pond production per are. With the right technical assistance the management production can increase from the regular 2.5 kilos to 15, 20, and 40 kilos.

3. Raw Materials/Supply/Equipment

Fish ponds are hand dug areas close to water sources where young small fish are cultivated for production. The raw material needed is earth, water, bamboo pipes and fish. Water sources are wide spread in the Kwilu-Kwango. Some sources are not fully appropriate as they are very acidic but these are not widely spread. Bamboo pipes are easily found, and fish fingerlings to start a pond of one are can be bought at 30 Z. The size of an average pond is 2 or 2.5 ares; so the average amount of fingerlings needed to start a pond costs 60 to 75 Z. The initial investment for equipment can vary from 85 Z to 1650 Z or more, depending on how many people are working on building the pond and the span of time necessary to finish the preparation of the pond. The equipment for initial investment can be as low as one good shovel for 85 Z, and can go as high as 1655 Z to buy a wheelbarrow at 1400 Z and three shovels at 255 Z; and possibly more, if workers are hired.

4. Skills and Production Techniques

The skills required to build a fish pond could be learned through demonstrations of pond building activities. The ponds should be built with a proper slope and bamboo pipes should be placed in an appropriate way to ensure the inflow and outflow of water. An average size pond of 2 to 2.5 ares can take as little as one month to build with one person working nearly full time, to as much as six months, with one person working half-days on and off. Once the pond is ready and the fingerlings are in it the process of cultivating the fish takes six months. The most important concept that technical assistance needs to transfer is that fish need to be fed properly in order to increase the production. During the six months of cultivation the fish need to be fed

twice a day. Fish food and compost can consist of free leaves from the forest, such as acacia leaves, free animal manure, papaya leaves from the village, manioc from women's fields and termites whenever found. The above menu would increase the fish production from 2.5 kilos per are to 15 to 20 kilos per are. A regular size fish pond of 2 ares with no technical assistance produces an average of 5 kilos every six months. That same pond of 2 ares with technical assistance can produce 30 to 40 kilos every six months based on feeding the fish the above mentioned food, most of it free, in the right quantities. The production of the same 2 ares pond could be raised to 80 kilos if rice bran is added to food and compost. Also excellent is brewery dresh, a brewery exists in Bandundu city. A hard-working farmer in the Kwilu increased production to 30 and then 40 kilos an are just out of compost and leaves from the forest. The harvesting of the ponds could be done either by using the traditional baskets that are found in most households or by using a net. One meter of net costs 15 Z.

During the six months of cultivating fish, there is a serious problem of theft. The fish pond owner or owners need to monitor their ponds carefully. It seems the closer to the harvest period, the greater the number of thefts. The cooperatives of fish pond owners of the Union des Travailleurs au Zaire and other fish pond owners hire a watchman to protect their ponds from theft.

5. Financial Feasability

It is clear that fish ponds are not just fully profitable but that their increase would have a positive impact on the nutrition situation of the region. Fish pond culture is labor intensive but not investment intensive.

The initial investment other than the labor could be around 150 Z for the fingerlings and the shovel and in six months the fish pond cultivator can start earning from only one fish pond 1.200 Z for 40 kilos of fresh fish. According to Peace Corps, the Union National des Travailleurs Zairois, the Kondji fishermen, and other sources, it is extremely rare for a fish pond cultivator to own only one pond, the average is 3 ponds of an average size of 2 to 2.5 ares each. It would be a good indicator to calculate the benefits of a fish pond cultivator before and after technical assistance.

Initial Investment	Total in Z's
Fingerlings for 3 ponds of 7 ares 30 X 7 =	210 Z
3 shovels at 85 Z each	255 Z

Income after six months without technical assistance
Each are will produce 2.5 kilos
7 x 2.5 = 17.5 kilos
A kilo of fresh pond fish sells at 30 Z
17.5 x 30 = 525 — 525 Z

Given the fact that initial investment is only for one time, we can consider that a regular fish pond owner can sell his fish and make 525 Z a month. The same owner after receiving technical assistance would make:

Income after six months with technical assistance feeding the fish compost and leaves from the forest
Each are will produce 20 kilos 7 x 20 = 140

A kilo of fresh pond fish sells at 30 Z 140 x 30 = 4.200 Z

Feeding the fish compost, leaves and rice bran
Each are will produce 40 kilos 7 x 40 = 280 x 30 = 8.400 Z

Special Recommendations

There exists an immense number of fish ponds in the Kwilu-Kwango region, the vast majority of them are producing at the lowest level with no technical assistance whatsoever. Having fish ponds producing at a rate of 2.5 kilo per are instead of 20, 30, or 40 kilos per are is a waste of potential. The Peace Corps regional coordinator for fish culture said: "the potential of the area has not been tapped yet". The 15 volunteers working in the whole Bandundu region touch actively 700 ponds only; around Kikwit alone there are 3.000 fish ponds; the number of fish ponds of the whole Bandundu must be enormous. It is important to note that on the average, whenever Peace Corps technical assistance ended after five or six years of active support the production per are dropped directly from 20 kilos to 12 kilos; the indicators are that this represents a general rule and that the drop in production will continue. Many reasons exist for this serious drop of production. One factor useful to consider is the fact that no planning, management, administration and bookkeeping techniques and skills were given to the locals during the technical assistance period.

Fish Pond culture has a great potential for the region. The following are issues to be considered. The Kwilu-Kwango is still in a great need for technical assistance in fish culture. No doubt the Peace Corps program is positive, but it is totally insufficient to transfer technical skills without transferring planning and management skills. With a limited number of extension agents, the choice of areas should be based on where it will make a greater difference. An equally important element is a long term commitment; six years of supervision and monitoring might not be enough given the

socio-economic context of the Bandundu area. To sum up, fish pond culture can be a highly beneficial small enterprise in the Kwilu-Kwango. There is a basic need for more technical assistance in improving the skills of cultivating fish and of planning and managing a fish culture operation. If both aspects of assistance are not given together, the success of the operation cannot be sustained and solidified. During field work many fish pond owners requested technical assistance to improve their production. Kondji for example is a village that has a higher percentage of men in it than other neighboring villages. During inquiry, it was learned that the men of Kondji do not migrate to the urban centers as much as other men and young men do because they all own fish ponds. Fish pond enterprises will increase food production, specifically protein, will increase income, and will decrease migration.

PALM OIL

1. General Description of the Product

Palm oil is made by extracting oil from the nut of the palm tree. Palm trees are an important resource available in the Kwilu-Kwango.

Palm oil is produced by large agro-industries and by individuals in their households. Small-scale production could be increased and upgraded through technical assistance, and management and business training.

2. Market Analysis

a. Characteristics of Target Market and Analysis of Demand

The demand for palm oil is widespread, from the modern sector for export to domestic industry for manufacturing to village and urban women for cooking. Palm oil is the main ingredient in soap and margarine. It is also needed for the leather tanning process and used for treating copper, a major Zairian mineral resource mined in other parts of the country.

In Djuma and Bulungu, small commerçants bring barrels for small scale village producers to fill with oil which the commerçants then buy, claiming this procedure is less expensive for them than buying factory-produced oil. Apart from the commerçants, palm oil is an item which is purchased on a daily basis by women, an essential ingredient in food preparation. All of the small-scale producers interviewed stated that the demand for palm oil far exceeds their capacity to produce it.

Despite the huge demand, the level of industrial production has dropped. Records at one factory show decreased production since 1960 due to a

decrease in the number of men willing to enroll as palm cutters. There were half as many cutters in 1982 as there were in 1960 for a number of complex reasons.*

Palm oil is sold at the place of production in barrels of 200 liters and 45 liters. A 200 liter barrel sells for 2.100 Z's, however, prices were fluctuating during research, and in some places a barrel sold for 3.000 Z's. Commerçants sell barrels at shops in cities and towns, and vendors most often sell smaller quantities in the market places of cities, towns, and villages. Kikwit market palm oil is widely sold in used beer bottles for 10 Z a bottle and metal pails for 110 Z's a pail; a barrel there cost 3,765 Z's according to market women interviewed.

b. Competition

There appears to be little competition between palm oil and other oils. There is a very small demand for imported olive oil which sells in small quantities at the Kikwit market for three times the price of palm oil. A seller purchases her olive oil in a shop in Kikwit which, in turn had purchased imported oil from Kinshasa. There was very little peanut oil and no soya oil.

Competition arises as an issue between factory production and small-scale home-production. Twenty years ago small scale production was not competitive. One reason is that more men were willing to be employed as palm cutters and hence the supply of nuts was sufficient to allow factories to

* Interview with Director of PLZ, Lusanga.

operate at maximum production levels. Today, though, full-time palm cutters are more difficult to come by as the work is hard, dangerous, and does not pay well. The director of a palm oil factory felt that many men would prefer to begin cultivating, finding it more economically viable, than to suffer the high risk and low pay of palm cutting as a full time job. Another explanation is that many of the young who might once have become professional palm cutters now become diamond traders instead, or migrate to the cities in search of work; or because of higher education, can become primary school teachers. Nevertheless men are willing to do palm-cutting as a part time activity to supply small scale oil producers who are likely to be extended family members. It is clear that as a full time occupation, palm cutting has less and less appeal.

Another reason small palm oil production is more competitive today is that small producers are able to make oil for sale as well as home consumption whereas, in colonial times, it was illegal to produce palm oil for commercialization.

Palm oil prices are government regulated. Thus price is not a big issue in competition. The way small-scale production is competititve is that it makes oil accessible to individuals who have limited purchase power and are only able to buy oil in small amounts. Many complain that despite mass production nearby, they are unable to obtain palm oil because factories refuse to sell in small quantities, and most cannot afford to buy a whole barrel at once.

c. Distribution

Widespread small-scale production of palm oil will facilitate distribution since the market for oil exists at the production site. All

women must have oil every day for their cooking needs; therefore, there is no need to transport the item far from the production unit for sale. Buyers will save on transportation costs, and more people will have access to a greater quantity of oil.

Factory produced oil is distributed in large quantity only, mainly to large firms for use in manufacturing. For example, the Lever Palm Oil factory (PLZ), which is 45% owned by the Government of Zaire according to the director, is the major supplier of palm oil to MARSAVCO-Zaire, a subsidiary of the Lever Company, which makes soap and margarine.

Large commerçants with trucks may purchase oil directly from the factory or local producers, and distribute the oil through regular market networks.

d. Promotion

As the demand for palm oil exists already, the only promotion necessary is increased local production to permit greater accessability of the product to the buyer.

3. Raw Materials/Supplies/Equipment

Raw material, supply and equipment needs depend on the level of sophistication of the production technique used. The most important element of production is the palm nut. Although palm trees now abound in most of the Kwilu-Kwango, production might decrease if no new trees are planted.

There are differing perceptions of people in Kwilu-Kwango regarding ownership of palm trees. A director of a palm oil factory insisted that his company owned all the palm trees in the region. A group of prominent people in the village of Vanga stated that the planter is the owner, and anything

which grows naturally belongs to everyone. Research suggests that big companies own large areas of plantations which have been designated by the government of Zaire. People living on concessions on the plantations have the right to make oil from the nut of local palm trees for their own consumption. "Clans", on the other hand, have communal use of traditionally designated areas where food is grown, hunted or gathered. On these communal lands, the planter is considered the owner of the tree.

To obtain palm nuts a palm nut cutter uses a strap to steady him while in the tree, and a machete. Both are made locally, the strap out of bamboo strips, and the machete by a local blacksmith with wood and scrap metal.

All supplies and equipment for the simplest method of oil production are available locally. They are wood, water, a "Kibouka", or mortar, a pestle, a ladle, a wooden stake (which can be made out of a tree branch), a basin or other container for the palm nuts, and a piece of burlap sack. The mortar, pestle and ladle are made by a local carpenter. The basin is a household item which has usually been around for years. The recent price in Kinshasa for a basin was 120 Z's.

4. Skills and Production Technique

Production technique varies depending on the destination of the oil. Soap and cooking oil are made from the outer shell and fibrous part of the nut. The Core of the nut is the source of oil for margarine production.

Four different levels of sophistication of production technique were observed during research. At the small-scale production level the core is not produced into oil, but often sold to large companies in Kinshasa.

The simplest technique uses no electricity or machinery of any kind. The palm nuts are simply boiled, then pounded. The pounded nuts are then put in a burlap cloth which is attached to a stake at one end. The cloth is closed at the opposite end with a strong stick which, when twisted, squeezes or "presses" the oil from the pounded nuts. The "makanii" or what is in the cloth after pressing, is boiled again, and when the remaining oil comes to the surface it is skimmed off with a ladle. According to a priest in Kikwit who has tried this process, it takes about 15 to 20 days to fill a 200 liter barrel with oil.

A slightly more sophisticated technique uses a small palm press which costs between 1500 and 1800 Z's. This machine is fabricated by projects experimenting on improved farm tools and labor intensive machinery such as USAID's North Shaba Project. The palm oil press is sold by some palm oil factories. The above techniques are labor intensive thus, start up and operation are inexpensive. Both can be done by one or two people. These are the procedures recommended in this study.

The next level requires a generator for boiling a large amount of nuts, and operating a mixing and pressing mechanism. The equipment is more complicated and expensive in this process, requiring fuel, maintenance, and repairs. It is essentially a mini-factory, and too sophisticated for the purposes of this study. The highest level of production is the factory.

Two types of technical skill are involved in the production of palm oil: first, the cutting of the palm nut from the tree; and, second the actual making of the palm oil.

Almost all young men of the village learn how to cut palm nuts at a very young age, thus the skill exists. Although practice of the skill is on the decline for the industrial sector, palm cutters are still available on the local level for small-scale production.

The technical skill for the actual production of palm oil on the first two levels exists and oils is made by both men and women. The simplest level of production could be improved easily by introducing the labor saving palm oil press. Small palm oil makers do not, however, use business techniques such as planning, marketing, accounting, or management, which could increase revenue from the operation. An emphasis on business training is necessary to transform oil producing on this scale from an "artisanal" activity to a more lucrative small enterprise.

5. Financial Feasibility

Small-scale palm oil production is an established profit making activity. The initial investment for materials is low, as supplies and equipment are likely to be existing household items. The mortar and pestle would be purchased in the village, specifically for oil production, at 35 Z's. The addition of the palm oil press would increase initial investment as it costs between 1500 and 1800 Z's, but would save time and increase production in the long run.

To produce one 200 liter barrel of oil, twelve cases of palm nuts at 45 Z's per case are necessary. Thus, the total cost of the nuts is 540 Z's.

Wood fuel for boiling the palm nuts may be collected in rural areas. If purchased, the cost is affordable. In Kikwit a priest from the Sacre Coeur mission sells a truckload of wood for 210 Z's, while commerçants sell the same

amount for 500 to 550 Z's. The last reported price of a barrel of palm oil was 3000 Z's. Thus, the profit will be a minimum of 1.910 per barrel and likely to be much more as most people collect wood for free.

MONTHLY EXPENSES

Palm Nuts		
45 cases X 12 Z's	=	540 Z's
Wood		
1 truckload		550 Z's
		1090 Z's

MONTHLY INCOME

1 Barrel oil	3000 Z's

MONTHLY PROFIT

3.000 - 1.090	=	1910 Z's

With assistance in techniques and business the small-scale palm oil operation will become increasingly lucrative.

6. Specific Recommendations

Experimentation to find more efficient methods of pounding and pressing the oil would be useful to reduce time required in the process. Frere Felicien Ganzozi of the Sacre Coeur Mission in Kikwit has already begun testing methods of producing oil more efficiently without electricity and should be consulted.

Technical assistance can also be obtained from Peace Corps Zaire and by writing to the African Training and Research Center on Women of the Economic Council of Africa AFTRCW/ECA, which is under the umbrella of the UN, to learn more about experimentation in palm oil processing techniques.

Note: the husk of the inner core of the palm nut has been used in some countries for road surfacing.* This material is now not utilized in Zaire and could become very valuable. More research should be done.

Palm oil production is an existing activity which can be improved upon through assistance in appropriate technology and training in business and management. Through extension activities there could be more and better small-scale palm oil businesses.

One absolute requirement for palm oil production on any scale is reforestation of palm and other local trees.

* Bill Pruitt, Peace Corps Zaire Director.

SACKS

1. General Description

Burlap sacks are produced in Kinshasa by Tissakin for usage by farmers and commerçants. These sacks are made out of fibrous plants such as punga-punga and urena. Punga-punga is a plant growing spontaneously and extensively in the rain forest areas of Bandundu where it is harvested by the local population. The punga-punga stalks grow to a height of 2 to 3 meters. The stalks are then assembled into bundles to be retted and sold. Urena on the other hand can grow spontaneously but better quality urena could be cultivated if specifically planted. The quality of the sacks made depends on the blend between punga-punga and urena. Sacks are also being made out of punga-punga only; those are a rougher quality than the ones made out of both punga and urena. These burlap sacks either made out of a blend of punga-punga and urena, or made out of punga-punga only, could be produced at a small scale village level.

2. Market Analysis

a. Characteristics of Target Markets and Analysis of Demand

The economy of the Kwilu-Kwango is largely agriculturally based. Studies indicate that 86% of the rural population of the Kwilu region consider themselves agriculturalists. The main cultures grown by the farmers are: manioc, maize, peanuts, rice and squash and the secondary cultures are voandzou, millet, yams, sweet potatoes and peppers. To collect, store and/or sell the agricultural produce the cultivators of Kwilu-Kwango need sacks. Two of the major items that the commerçants of the region buy in Kinshasa and Bas

Zaire, and transport to Bandundu are salt and sugar; both need to be transported by sacks. The need for sacks is parallel with the need to allow agricultural production to be distributed within the Kwilu-Kwango, as well as outside the region. Also, the need for sacks is tied to the need to bring some basic food items into the region. The scarcity of these sacks is affecting the marketing of food crops, and has made the price of sacks, (35 Z for a new sack in Kikwit, November '83) an increasingly significant element in the cost of marketing. Many large commerçants provide fiber to Tissakin in return for a guaranteed number of sacks. Sacks are the major means contributing to the mobility of food crops from farm gate to home, from village to village and from village to town, as well as from village to capitol. According to a report by Agri-Business Consultants[10] "If the various local maize production schemes, including AID's North Shaba project, are successful in eliminating all maize import requirements, the 2 1/2 million bags presently brought into Zaire as containers for the imported maize and sold on the local second-hand market will disappear, and another 2 1/2 million bags will be required to pack the locally produced maize, thus creating additional demand for 5 million bags for this one crop alone, and possibly for another 2 to 3 million bags for other promoted crops such as manioc."

All farmers and all commerçants need to buy sacks; all mission, non-governmental agencies and parastatals need to buy sacks. The mission in

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10) Agri-Business Consultants: A Fiber Development Program for Zaire, USAID, Kinshasa, June 1982, p. 3.

Djuma, for example, buys nearly four hundred sacks a month, and CODAIC : Kikwit would potentially buy 1.000 sacks a month.

Presently, the sacks that are sold in Kwilu-Kwango are burlap sack made out of Punga-punga or made out of a blend of punga and urena. Among th areas where Punga-punga is found in big quantities in the Kwilu, are Djuma north of Idiofa and the outskirts of Kikwit. Some areas of the Kwilu, such as .Djuma, are making use of their wild Punga-punga; some others are not exploiting it at all. The villages of Djuma and the neighboring areas pick and gather the Punga-punga and sell it to the Centre de Developemment Rural of the mission. A kilo of Punga-punga is presently sold (November 1983) at 2.80Z. The Centre de Developemment Rural transports the Punga-punga to Kinshasa and sells it to Tissakin. Tissakin processes the fiber and manufactures it into sacks, which are sent back to Djuma and other areas of the Bandundu to be sold, to meet the demands of the farmers. Those sacks could be made locally in the different areas of the Kwilu that have Punga-punga in great quantities such as Djuma, Idiofa and Kikwit and in the long run in areas that are appropriate for the cultivation of Punga-punga. Small scale village level enterprises of spinning the Punga-punga into threads and weaving it into sacks could be set-up in a few of those areas to start producing and selling within their own localities. The production of sacks would require three basic things: the raw material, a skill, and a market. Two of the three basics exist in the region, the Punga-punga and the demand. The skill could be taught.

b. Competition

The small entrepreneurs of sack production would have to compete with Tissakin production. One Tissakin sack made out of Punga-punga only, standard size, 100 cm. length by 75 cm. width, weighs less than one kilo and sells in Djuma at 32 Z. The farmer of Djuma who is paying 32 Z for one sack, and the farmer in Kikwit who is paying 35 Z for one sack, are paying for: less than 2.80 Z of Punga-punga (the price at which one kilo of Punga-punga is sold,, transportation between their towns and Kinshasa twice, the salaries and overhead of Tissakin production, plus large benefits to the producers and the middlemen. The villagers of Djuma, Idiofa, and the outskirts of Kikwit can save a large percentage of the 32 Z or 35 Z, which they are paying per sack by producing themselves. If and when the sacks will be produced locally the farmers would be saving per sack, by cancelling the need to pay transportation twice, and by paying lower salaries and overhead for small businesses of their region rather than salaries and overhead of big industries in Kinshasa, and possibly by reducing the number of commerçants and middle men.

c. Distribution

During the first phases of small local production the transportation and distribution needs are going to be minimal. The assumption is that small production units would be established in the areas where Punga-punga grows already, so the need to transport the fiber would not exist. The fiber would still need to be collected from the forest and brought to the nearest production place. Presently, in Djuma, the fiber is collected and brought to a collection place. Due to the great demands for sacks, by everyone, in the different areas of Kwilu-Kwango, the first phases of

production would only begin to satisfy the local needs of the village or town and the neighboring areas where the sacks are produced. The Centre de Developement Rural in Djuma sold, during the first eight months of 1983, 452 tons of Punga-punga to Tissakin. This indicates the great amount of Punga-punga that exists in the area and the absence of the need to bring it from elsewhere and transport it into Djuma. The same Center buys 400 sacks from Tissakin monthly; this indicates the absorptive capacity in the region for selling sacks, hence the absence of the need, at least for the first phase of production, for distributing over large areas and long distances.

d. Promotion

Due to the high demand for sacks and their scarcity, the only promotion needed at the initial stage, would be the existance of the sacks in the local village and town market as well as neighboring markets, at a quality similar to the ones made in Kinshasa and possibly at a slightly lower price. It would be beneficial if the local sack producers could reach an agreement with the missions and/or the non-governmental organization of their area, on buying in bulk from them, on a regular basis. The missions and non-governmental agencies are buying in bulk now from Kinshasa; it would be more beneficial to buy from the local producer. CODAIC, in Kikwit, seems to be interested in buying 1.000 sacks per month from local producers.

3. Raw Materials/Supplies/Equipment

The basic raw material needed for the production of the standard sacks used in Kwilu-Kwango is Punga-punga, which grows in the area. Another fiber, urena, could also be used to make finer burlap. Urena also grows in some areas of the Kwilu, but not in great quantities. Urena like Punga-punga could

be cultivated. The equipment needed to make the sacks would be a spinning tool or a simple spinning machine, and an appropriate hand-loom. This equipment does not require electrical energy and would not require complex maintenance. It would represent a one time initial investment.

4. Skills and Production Techniques

Sack making is labor intensive and the skills of spinning and weaving would need to be introduced to the Bandundu. These skills even though new to the region, are not new to Zaire. The "Promotion de L'Artisant" program in the Bukavu has been training artisans in producing rope, mats, brushes and door mats from fiber; Father Henri Farcy is in charge of the program. The Bukavu program could serve as a case study to learn about how the spinning and weaving techniques were introduced to Bukavu. The techniques of both spinning and weaving fiber are simple and could be introduced through short term intensive practical learning workshops. An equally important skill would be to train those who will become the producers in planning, management and bookkeeping methods. An existing skill in the Kwilu is sack mending. Many small cultivaters and farmers mend sacks for second hand usage and sell them at a lower price than new sacks.

5. Financial Feasability

As evidenced, the potential profitability of sack making is high. One kilo of Punga-punga raw, unprocessed costs 2.80 Z, less than one kilo of Punga-punga processed into a sack costs 32 Z. The 29.20 Z per sack includes the round-trip transportation expenses, labor and overhead for the capitol's big business, and commerçants' transactions. The rural people of Djuma or other areas in the Kwilu-Kwango can produce those sacks and render them into a

source of income and profit. Punga-punga could be obtained from the forest for free, but even if the producer has to buy it, the profit he/she will be making would remain high. After the initial investment for the spinning and weaving machines; it is estimated that the producers monthly expenses, income and profits will be:

MONTHLY EXPENSES FOR SACKS MADE ONLY FROM PUNGA-PUNGA

100 Kilos of Punga-punga X 2.80 Z =	280 Z
2 Z a day for selling in the market 2 X 30 =	60 Z
	340 Z

MONTHLY INCOME

110 to 120 sacks given the fact that the sack is less than one kilo	
110 X 32 Z =	3.520

MONTHLY PROFIT

3.520 Z - 340 Z =	3.180 Z

The profit is based on the assumption that the producer would be able to sell 110 sacks a month either by bulk or in the market. The profit also includes the producer's labor. In the event that the small producers decide to sell the sacks at a slightly lower price than Tissakin, during the initial stage, such as 30 Z, they would still be making a high profit of 2.960 Z comparing this with the 300 Z that a primary school teacher makes in Kwilu-Kwango, it becomes even more evident how great a source of income Punga-punga can become.

6. Specific Recommendations

Sack making at a small village level should be encouraged in the areas where Punga-punga grows. Both Punga-punga and urena need to be cultivated. Both men and women could be trained in spinning, weaving and sack making. During the initial stages of production, sack making could be a part-time activity, with the expansion of the production it can become a full time job. Other Punga-punga products such as ropes, mats, and door mats could be added to the sack making. Rope is needed by every household; women use it to tie wood in bundles to carry it home, and men need it for their cattle. Punga-punga mats are bought by missions and homes in the area.

Finally the increase in the production of sacks, and specifically the decentralization of this production, other than becoming a source of income to small producers in the region, will facilitate access of the small farmers to the sacks. The shortage of sacks in the region otherwise leads farmers to utilize for their produce, any kind of sack or bag that is not standardized. This leads to problems in measurements. Producing the standard size sacks of 100 cm. by 75 cm. and making them accessible to the small farmers will result in: a new source of income in the region, possibly a slightly lower price for a basically needed item for an agriculturally based region.

CARPENTRY

1. General Description of Product

The Kwilu is a region of large forests; the Kwango region, while forested in parts, has far fewer trees than the Kwilu. The richness of the forest provides two of the major resources of the region: wood and palm oil. Wood is depended upon as one of the two basic elements of building traditional dwellings. Most of the basic household furniture such as beds and chairs is made out of wood. All basic school furniture, such as desks, is made out of wood. Local village and town carpenters' workshops are a basic need in the region.

2. Market Analysis

a. Characteristics of Target Market and Analysis of Demand

During field work four carpentry workshops were visited two in Kikwit, one in Vanga, and one in Feshi. All four highlighted the fact that they are innondated with demands and that they have to turn down new requests daily. Both, the carpentry workshop of the Sacre Coeur mission in Kikwit and the workshop of the Vanga mission are fairly big and employ a number of carpenters but are incapable of meeting all the demands. Their clients vary from hospitals to low-income individuals including schools, private firms, and individuals of different economic backgrounds. The requests include: doors, windows, beds, chairs, tables, benches, stools for women, farm implements such as wheelbarrows, wooden boards of various sizes and various other items. Due to the large number of waiting requests, Sacre Coeur workshop in Kikwit gives priority to large orders and is obliged to turn down the small ones. Some of those who are turned down try to find an individual carpenter to fulfill their

requests. They are not always successful due to the small number of carpenters in the region. Many villages do not have their own local carpenter. Frere Felicien Ganzozi, a Zairian in charge of carpentry at the Sacre Coeur mission believes that the Kwilu region can absorb a large number of small carpenters. According to Frere Felicien "Le bois ca ne chaume pas", "Wood cannot be without work". Many schools in the villages of the Kwilu-Kwango are without benches. When asked for the reason, the answer often is not because they cannot afford it, but because there are not enough carpenters to cope with the demand. This is the case of a school not far from Vanga, that has been waiting for its benches from Vanga mission's carpentry workshop but the carpenters are so overloaded with work they have not been able to fill the school's request.

b. Competition

Small carpenters would have to compete with the woodworking shops of the missions, but the competitors themselves are the ones that are seeing the need for more small carpenters and encouraging their existance due to the existing load of work, and the continuously increasing number of requests. The Vanga mission which has ten woodworkers, estimates that if it hired twenty new woodworkers it could only begin coping with the demand of a few of the neighboring villages. The Sacre Coeur mission believes that it can generate work for more than ten new carpenters if and when they start their own businesses. The Sacre Coeur mission has its own saw mill which facilitates the access to lumber for the carpenters of Kikwit. Due to the overwhelming demand, the competition does not seem to be a vital factor.

c. Distribution

Small carpenters would have to buy their lumber from either the saw mills of the region or from individual sawyers. Both exist in the region. Among the most well known saw mills of the Kwilu are the Sacre Coeur of Kikwit, the Lusanga saw mill and the Ndana one in the Bagata Zone. Wherever there is a wood sawyer in the same village or a neighboring village, this will facilitate transportation matters for the new carpenter's business. With regard to the wood-products, no distribution problems are foreseen, at least for the first phase; this is due to the fact that the demand is emanating from the villages themselves, especially those that do not have their own local carpenters at present.

d. Promotion

There would hardly be a need for promotion given the fact that the products of the small carpenters would be answering the basic needs of individuals and institutions at the village level. Doors and windows are needed by anyone who builds a dwelling; beds are bought as the first item of furniture within the household; stools are the request of all women; and many schools are still waiting for their benches.

3. Raw Materials/Supplies/Equipment

To start a carpentry workshop the raw material needed is wood. The supplies needed are glue and nails and the following pieces of equipment are a must: hammers, a plane, a saw, a crankshaft, a screwdriver, a chisel and wooden tables. The workshop is another basic need. Being in a region of large forests, and having a number of saw mills and individual wood cutters in the region, the small carpenters would have easy access to wood. It is

important, though, to point out that if the Kwilu is going to continue to cut its trees for wood usage without reforesting the region, a serious problem of ecology and economy will be created. The need for reforestation is great, specifically because two of the most vital resources of the region are wood and palm oil. Carpenters can obtain glue and nails from Kikwit, the major city of the region. In the long run with the increase in number of carpenters there would be an increase in demand for glue and nails which might result in supplying them in the commercial centers of smaller cities and towns. The equipment is a one time investment that is not very large and the need for maintenance of such basic carpentry equipment is minimal.

4. Skills and Production Technrques

The Kwilu-Kwango region, before independence, had a number of carpentry schools, but with independence vocational schools lost value and many had to close because of the "regroupement" policy. The few that still exist teach carpentry skills without any training in planning, management and bookkeeping. A few of those who graduate from the carpentry schools are hired by the existing missions carpentry workshops, but many are unemployed or underemployed or migrate to the capitol and other urban centers because they cannot find a job and they do not know how to start their own small businesses. The training of the existing vocational schools is not geared to prepare its students for starting their own businesses or taking any initiative. The vocational schools, like the formal traditional highschools are preparing students only for wage employment. The absorptive capacity of employing all those who graduate from schools is extremely low in

Kwilu-Kwango. If other avenues of work are not opened, the problem will grow and the economic situation will worsen.

The production techniques are not new to the region; at the level of the small village carpenter, they would be labor intensive and simpler in approach and techniques than the mission carpentries.

Assisting the establishment of carpentry workshops would be building on an existing skill in the region, and would result in preventing the loss of that skill as well as diminishing the migration of young vocationally capable resources.

5. Financial Feasability

Given the high demand on wood products and given the fact of the easy accessability to wood, and the reasonable price of lumber, the small woodworking shops, once launched, have a high potential for profitability. One cubic meter of good quality furniture wood could be bought at 3.000 Z to 4.000 Z, from the different saw mills in the region. Wood could also be bought in smaller quantities from local sawyers. It was estimated that the finished wooden board produced from that cubic meter would sell at 5.600 Z and that the furniture produced can sell at 7.000 Z to 10.000 Z. This equation alone underlines the profitability of woodworking.

6. Specific Recommendations

Even though wood is available in most of the Kwilu and parts of the Kwango in big quantities, it is vital, for the wood industry and the palm industry of the region, to implement large schemes of reforestation. The number of small village level carpenters is extremely low at present; this number needs to be increased in order to satisfy the needs of the population

in basic household furniture, and schools in basic furniture. The increase in the number of small village level carpenters would diminish the number of skilled people who graduate from the vocational schools and migrate to the urban centers. Small village level carpenters need to be given technical assistance in business planning, specifically during the start-up phase, and of management and bookkeeping skills during the first phase of establishing their businesses. Small carpenters, once established, can be assured of a steady flow of demand hence a steady flow of income.

TANNING

1. General Description

Tanning is the transformation of a raw animal skin into non-perishable leather. The process of tanning is for either light leather such as: goat, sheep, rabbit and antelope or for heavy leather such as cattle. There is more than one way to tan animal hide. Some appropriate methodology can be used for the Kwilu-Kwango region basing the process on raw materials, most of which are available in the region, such as: the bark of certain trees, animal hides, water, palm oil, basins, lime and acid.

By transforming animal hides into leather, an economic value would be added to the skin. Currently the skin is rarely utilized for tanning but rather eaten after a long, long, process of boiling. According to the nutritionists we met in the region, the animal skin that the population eats out of habit, has little nutritional value. Tanning the skin rather than eating it would result in saving on wood and creating leather which in turn could be used to make shoes, bags, belts and other leather goods.

2. Market Analysis

a. Characteristics of Target Market and Analysis of Demand

The shoe-makers of the Kwilu-Kwango are at present buying their leather from Kinshasa, because of the absence of tanneries. In an interview in Kikwit a shoe-maker highlighted the fact that access to leather is becoming the major problem of leather workers and shoe-makers in the region. He and his colleague have been waiting for two months to receive the leather. To accelerate the process of obtaining the leather would mean another trip to

Kinshasa which is too costly. The demands for new shoes and for repairs keep coming in, but both shoe-makers can not meet those demands. Over the period of two months a shoe-maker receives around a hundred requests for either making shoes or reparations that also require some leather. Once leather is made in the region and access to it is facilitated, a number of leather goods could be made also and "maroquineries" would exist which will increase the demand for leather. Traditionally the goat skin used to be treated and used for drums, chairs and rugs. With the increase of the number of cattle in the Kwilu-Kwango, specifically in the Bulungu and Feshi zones, the availability of animal skin will be increasing. According to Mullers[11], in a survey done in 1983, the number of cattle herds privately owned (not including the missions and big business) in the southern part only of Kingandu, Feshi zone, is 1.399. Ten years ago, the privately owned cattle in this same region of Kingandu amounted to 439 herds. In ten years the number of herds tripled; these herds are predominantly small, three to ten animals, and individually owned. This phenomenon is representative of the increase of the importance of cattle in the southern region of the Kwilu-Kwango. In Kisandji and in Kingandu, people believe that the economic future of the southern part of the region is in animal husbandry. The following is a result of the census CODAIC[12] carried out on the number of cattle existing in the Kwilu region.

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11) MULLERS, Pere Hagen, Raport Gros Betails des Particuliers, M. C. Kingandu, Aout 1983, p.2.

12) WANTZ, Jean: from his unpublished working paper, CODAIC, Nov. 1983.

At present there are 92.558 heads of cattle in the Kwilu region alone. If we add to this, the fact that a large number of heads of cattle exist in the Kwango and another large number of goats, rabbits, pigs and other small animals exist in the two regions, it highlights the existing potential of animal skin and the potential demand for leather.

NUMBER OF HERDS OF CATTLE IN THE KWILU

TYPE OF CATTLE OWNER	Bulungu Zone	Masi Manimba Zone	Bagata Zone	Idiofa Zone	Gungu Zone	Total	%
Government and Parastatal	12	62	49	-	917	1040	1.1
Collectivites	75	64	-	65	36	240	0.3
Private Firms	260	913	4582	-	479	6234	6.7
Religious Missions	3109	2120	6451	714	2268	14662	15.8
Non-Governmental Agencies	1782	527	-	3225	1065	6599	7.2
Individuals	31703	14202	5220	2670	9988	63783	68.9
TOTAL	36941	17888	16302	6674	14753	92558	
	40%	19%	18%	7%	16%		

b. Competition

The competition for leather goods would be minimal, due to the fact the only few small experimental activities in tanning and making goods out of leather exist in the region. What might be considered as a possible source of competition would be items made out of plastic such as shoes, or imported leather items. Medium size plastic shoes sell for 65 Z in Kikwit and 80 Z in Vanga. Imported leather shoes sold for 500 Z up to 650 Z in Kinshasa. A Catholic priest in Shaba, makes leather sandals; his reputation has reached Kikwit and it seems he is inondated with demands including a number of them from Kinshasa. Leather sandals, though more expensive than plastic shoes, still have a high demand if available.

c. Distribution

Given the fact that cattle and/or small animals are found in most of the villages and towns of Kwilu-Kwango, access to animal skin will exist within the villages and towns. Once the hide is processed and tanned, the leather as a product would be bought by leather craftsmen and shoemakers at the level of the villages and town. . The leather products would have to use the same channels of distribution that regular goods use: from the production place to the village market place, and from the village to the town or regional city.

d. Promotion

Most probably leather sandals would not need promotion, but the other leather goods such as belts, bags, chair seats, rugs, and other leather products, would need to be distributed and displayed through a wide network of

markets and boutiques to allow them a certain degree of visibility so that the population of the region would be aware of their continuous availability.

3. Raw Materials/Supplies/Equipment

To make leather several things must be available: tannin, animal hides, water, basins, palm oil, lime and acid. Tannin is a substance containing tanic acid and can be found in the bark of certain trees, such as acacia trees that are found in the Kwilu-Kwango. The animal skin can either be fresh or dried. Water quality and quantity are important; it takes a large quantity of water to complete the tanning process. Location near a steady flow of water, good source, or a river is suggested. Sources and rivers are found in large numbers in the Kwilu and to a large extent in the Kwango. Basins in which the tanning process takes place should be of clay, wood, or cement. Size of the basin depends on the quantity of skin to be treated. Lime is necessary and may be found in the region; it is used to white wash houses. Acid which can be produced locally, from dog manure, is needed. Finally palm oil is also needed. As evidenced, once the animal skin is available the other items of raw material, supply and equipment can be found in the region. The cost of the supply is not very high. Tannin could be obtained from the forests by cutting the bark of the acacia trees. The basins would require a few wooden boards that could be ordered at the local carpenter. Lime and palm oil need to be bought.

4. Skills and Production Techniques

Even though there are no tanneries now in the Kwilu-Kwango, the skill of tanning is not new to the region. A few schools of leather products, and a few tanneries existed before independence, among them: the Lusanga school of

leather, and the tannery of the Jesuits in Djuma where they had a shoe-making factory. At present, a few isolated experiments in tanning and leather products exist; among them in the zone of Feshi, there are: a tanner in Malundu, 25 km. from Kisandji, and a tanner in Pai, 35 km. from Kingundu, and in the zone of Bandundu tanning exists in Ito, near Bandundu city. The research done by Father Didier de Failly[13] on appropriate technologies in Zaire indicates that the other experiments in tanning in the rest of the country are: Tannerie de Moba, Shaba; Tannerie Nyakariba, Kivu; Tannerie Kasika, Bukavu, Kivu; CECOPANE, Luhoto, Kivu. De Failly also indicates that the promotor of tanning in Kasika published an article on the natural tannins. At the Center of the Handicapped in Kananga, Peace Corps and the Dutch Embassy collaborate in implementing a tanning project. Peace Corps also has two volunteers, one in Bukavu, Kivu, and one in Mbanza Nzundu, Bas-Zaire, who are involved in tanning. As evidenced, the skills do exist in the country; the need would be to evaluate those skills, up-grade them, and replicate them in the Kwilu-Kwango region.

The production techniques for tanning require a lot of labor. No highly technical procedures or imported tools are needed. According to two Peace Corps trainers[14] the process of tanning begins with rehydrating the hides by soaking them in a solution of water and wood ash for three days.

13) de FAILLY, Father Didier, Technologies Appropriees au Zaire, CEPAS, p. 14.

14) KAPALATI and PONGRUCE, Don: Tanning Techniques, Peace Corps, Kinshasa, June 1982.

Then liming is done by putting the hides in a solution of water and lime and stirring twice daily for 6 to 9 days (the solution needs to be changed after each 3 days).

After liming the hair needs to be scraped with a knife or machete. The deliming process comes next by washing the hide very well in water. To complete the deliming, the hide is put into an acid solution for one to two hours. The tanning itself is a process of immersing the skin in basins of tannin juice for 12 to 18 days, with a continuous process of removing the hides and wringing them out twice daily. After the hides have been through the tanning juices and are completely tanned, they need to be well washed in clear water. Once well washed the hides need to be oiled with a compound made from palm oil, animal fat and soap. After oiling is drying.

To sum up, tanning is labor intensive and based on material that is fully found and produced locally.

5. Financial Feasability

An arithmetical financial feasability exercise is not fully possible at this stage given the fact that the major item of material needed for the tanning operation, the skin of the animal, has presently no or very little economic value. Most of the other items of supply such as water and tannin also do not have a cash value but would require a lot of labor to obtain them and use them in the process of tanning. Given that the process transforms raw material with no or little cash value into a product with economic value, it appears that the operation has a potential for high profitability.

6. Specific Recommendations

Tanning depends heavily on the existance of animal husbandry and the availability of the skin, as well as on skills and experiences in the procedure. The two zones that meet these criteria would be Feshi and Bulungu. Both have a great number of cattle and small animals, and in Feshi the number is increasing rapidly. Both also have skilled people who used to practice tanning or are still practicing it in an experimental way such as the tanners of Malundu and Pai. During the launching phase of leather making in the Kwilu-Kwango it would be appropriate to focus on the zones of Feshi and Bulungu. Another vital aspect to take into consideration is the possibility of the existance of slaughter houses in the region. CODAIC is examining the possibility of establishing abattoirs in Kwilu-Kwango in the near future. If and when the abattoirs are established, it would be important to locate the new tanneries near the new abbatoirs. With regards to the process of production, it would be useful, as was suggested by CODAIC, to start by making the people aware of the value of the hide and its possible added economic value once they take care of it, clean it and dry it. The supply and the demand are so interrelated with respect to tanning that by creating tanneries we might be creating the demand for the hide which would in turn decrease and eventually reduce significantly the local practice of eating the skin, and encourage people to clean it and sell it to the tanners.

SOIL-CEMENT BUILDING BLOCKS

1. General Description of Product

A missionary in Vanga has recently begun experimentation in the construction of a stronger, less expensive building block. It is made with local soil and a small quantity of cement in a portable block making press called a CINVA-RAM imported from Columbia.

2. Market Analysis

a. Characteristics of Target Market and Analysis of Demand

Presently, those who can afford building blocks are wealthy entrepreneurs, the government, and private voluntary organizations (including the missions). Concrete blocks are most widely used for the construction of permanent structures such as hospitals, schools, commercial buildings and churches. There is a very large demand for construction of permanent structures especially schools, given the high priority the Zairian population gives to education. Discussions indicate that were a mobile construction crew organized, they would be on the road every day of the month. Indications are that many lower income individuals would prefer permanent housing rather than traditional mud and tree branch structures, which weather quickly, if it were financially feasible/

Concrete blocks are made with a specific type of sandy soil, cement, and water, in a mold. One 50 kilogram sack of cement which costs between 300 and 350 Z's in the rural town of Bulungu will make approximately 20 standard-size concrete blocks. The lowest cost per block, therefore, is 15 Z's not including labor and overhead. Usually, the person or organization

that wishes to build with concrete blocks will hire a local mason or builder and furnish him with all the necessary materials.

Construction projects exist throughout the year, though the dry season period between June and August is a slow one when most workers are planting gardens and water is slightly more difficult to obtain.

b. Competition

A few people in urban areas make concrete blocks and sell them ready made to local people who need only small quantities. However, most people find it far more cost-effective to buy block building materials and transport them to the construction site for fabrication by a local mason.

The Kwilu-Kwango sub-regions are scattered with burnt clay brick structures built years ago. The method of making burnt clay bricks in a kiln was probably introduced by missionaries before colonial times. It has not been employed recently; consequently, the skill has become a lost art. One great disadvantage of the burnt clay method is that a great quantity of wood is necessary. Additionally, special red clay soil is required which is not found everywhere.

Rock is another potential construction material which is available in the Kwilu-Kwango sub-regions. Rock construction could be cheaper than concrete blocks, and has been used in some areas. The rocks must be mined through a method of firing followed by immediate water cooling to break them. They are then set in concrete. There is very little of this type of construction being done in the area.

With the CINVA-RAM press three persons can produce between 100 and 150 soil-cement blocks with one sack of cement. Although concrete blocks are

approximately two and a half times larger than pressed blocks, the cost per cubic centimenter is still one third the price. The pressed soil-cement block procedure uses a sixteen part clay, one part cement mixture to produce a building block twice as strong as the concrete block because of its density. Experiments are underway to use a ratio of twenty four parts clay to one part cement which would further reduce cost to one-half that of the equivalent sized concrete block.

It should be noted that during the first two months of experimentation with the CINVA-RAM press, twelve prominent local people, including one woman, asked to buy the machine.

Transportation needs for brick or block making in Zaire are primarily for transporting cement from Kinshasa and local urban market centers. The soil-cement pressed brick would reduce transportation costs as the amount of cement required is greatly reduced. One time transportation is needed for the press, which weighs approximately 140 lbs., and theoretically could be transported in a cart or wheelbarrow.

c. Distribution

Soil-cement building blocks are being produced in Vanga with the CINVA-RAM building block press, for the construction of church centers in the Vanga area. There are no plans to sell the blocks. Ten salaried masons are being trained to use the building block machine. In the future cement block presses will be loaned to surrounding villages for local construction projects. Villagers would be required to supply materials and the Vanga mission would provide technical assistance for making the building blocks.

The largest market for pressed building blocks at the introductory phase will be the private voluntary organizations who can afford to produce the blocks for their construction projects.

d. Promotion

Model construction projects by private voluntary organizations will serve to promote demand for this new type of building block by demonstrating the cost effectiveness of the technique and the quality of the soil-cement building block which is far more durable than the commonly used concrete block. Markets outside of non-profit organizations are likely to grow. At first a few individuals may begin purchasing blocks for either their own use or to sell. Masons working within the non-profit structure and trained in the new technique may wish to begin production on their own, and could arrange to purchase, rent or reproduce the block making machine. With exposure to models, masons and other individuals outside the private voluntary organization structure would begin requesting technical assistance and materials for start-up of their own independent block making activities.

3. Raw Materials/Supplies/Equipment

The soil cement building block requires from 33% to 50% less cement than a concrete block. Any type of available local soil can be used.

Transportation of cement may initially be provided by the private voluntary agency producing the soil cement blocks. Cement is available from CINAT, a state owned cement factory in Kinshasa. It is also produced by CIZA in Kinshasa, a private organization which sells to Kinshasa firms in large quantity. Merchants in many regional cities and towns supply cement and have it available most of the time. However, creation of a private local

distribution center would cut down on high prices charged by local merchants and transporters.

The major investment for the block building process is the press which initially must be imported. The cost of the press in Zaires comes to 13,500* including shipping and customs. It is estimated that at least two presses could be made locally for that price with iron and steel materials (channel iron, cold roll steel, welding rod, pipe, angle iron) available at TUBETRA ZAIRE or CHANIMETAL in Kinshasa. Once a local production unit is established and parts are purchased in bulk, as many as five or six presses could be produced for the amount it takes to import a CINVA-RAM press from Columbia to Zaire. The production of soil-cement block presses has potential to become a small business in its own right in the future. The press is a versatile machine which makes tiles and water conductors as well as bricks.

4. Skills and Production Technique

The simple soil cement block production method is labor intensive and requires at least three people for efficient block making. Two men must operate the machine. No other energy source is necessary.

Some type of shelter to store cement, and to protect the blocks during the curing process is necessary. This shelter may be temporary and built with local materials.

Producing the blocks with a pressing machine requires short term training on testing of soil suitability and determining the correct mix of soil and

* Sept. 1983 30 Z = 1 Dollar

cement, use of the machine, and block curing procedures. This training would take a few weeks for persons who have basic notions in masonry, and has already begun in Vanga.

The simplicity of the machine allows for easy maintenance and repair, as well as on-site block production.

Financial administration and management of an improved low cost block building operation will at first be the responsibility of the private voluntary organization introducing and promoting the technique. As interested persons who have the potential to open and run a small block building business are identified, appropriate bookkeeping and management training will be necessary.

5. Financial Feasibility

Soil-cement building blocks can be produced for one-third to one-half the cost of a concrete block when taking into consideration cement costs alone. One hundred concrete blocks require five sacks of cement at 300 Z's minimum cost (recent price in Bulungu) which totals 1500 Z's. The equivalent number of pressed soil-cement blocks is 250 which require a maximum of two sacks of cement at 300 Z'S for a total of 600 Z's. (This is with a ratio of sixteen parts soil to 1 part cement. It is possible to use twenty four parts soil to 1 part cement.).

CEMENT COSTS

TYPE OF BLOCK	NO. OF BAGS	COST	TOTAL
Soil-Cement Block (250)*	2	300	600
Concrete Block (100)*	5	300	1500
		DIFFERENCE	(900)

*Volume of 250 soil cement blocks=Volume 100 concrete blocks

Labor costs are higher for construction of soil-cement pressed blocks. It takes approximately two and a half times longer to produce the same volume in soil-cement blocks as in concrete blocks. Therefore, if 100 soil-cement blocks are produced in one day, and it takes two and a half of these blocks to obtain the volume of one cement block, two and a half days of labor will be required to make 250 soil cement blocks. This may be compared to one day of labor for 100 concrete blocks of equal volume.

LABOR COSTS FOR EQUIVALENT VOLUME PRODUCTION

TYPE OF BLOCK	PERSON DAYS	SALARY	TOTAL
Soil-Cement	7.5	12.5	93.75
Concrete	3	12.5	37.5
		DIFFERENCE	56.25 Z

The salary of 12.5 Z's per day is based on the average amount earned by a skilled, experienced rural mason. It should be noted that a large business man might pay as much as 30 Z's per day.

Overall, soil-cement blocks will cost less when labor and material costs are combined, and volume rather than number of blocks is compared.

TOTAL LABOR AND MATERIAL COSTS

TYPE OF BLOCK	LABOR	MATERIAL	TOTAL
SOIL CEMENT	93.5	600 Z	693.5
CONCRETE	37.5	1500Z	1537.5
		DIFFERENCE	(844) Z

Thus, the cost of producing 250 soil-cement blocks is 844 Z's less than the cost of producing 250 concrete blocks with the same press volume.

The single large investment needed for the construction of soil cement blocks is the block press. The CINVA-RAM press costs 13,500 Z to purchase and import to Zaire. With a savings per day of 337.60 (844 - 2.5 days) it will take 40 work days to pay for the CINVA-RAM press.

Once the machine is produced locally and the cost is reduced by one-fifth or 2.700 Z's, it will take only 8 work days to make up the initial investment cost of the machine.

6. Recommendations

Given the large demand for construction of permanent structures out of blocks, and the prohibitive cost of building for the great majority of people*, the soil-cement building block should be introduced in the Kwilu-Kwango Region.

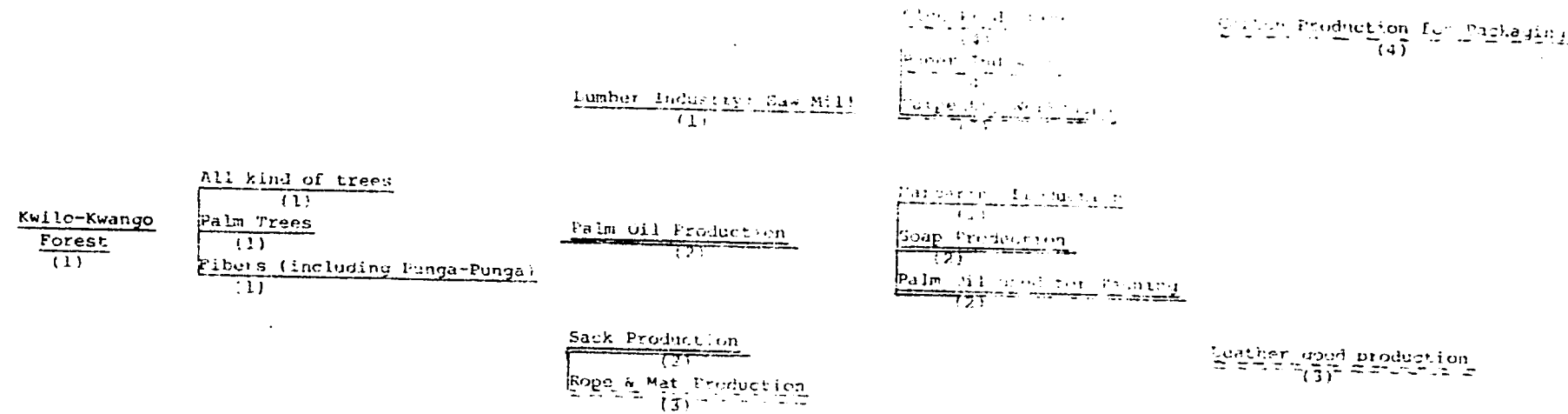
*It should be noted that a large part of building cost is roofing. Complementary experimentation in appropriate and less expensive production of roofing materials would be useful.

Since the technology of building soil-cement blocks is new to the area and requires an initially imported block press, it would be preferable to work through private voluntary organizations during the launching phase. Withexperimentation, production techniques for both building blocks and the local fabrication of an inexpensive soil-cement block press will be perfected making the activity economically viable for a wide range of people.

For technical assistance, John Scott, the Vanga missionary who has been experimenting with the CINVA-RAM press, should be contacted.

Best Available Document

FIVE RECOMMENDED PRODUCTS AND OTHER [illegible]



1) existing resources

2) small scale production recommended by the study either because it is imported to the region or produced at industrial scale or non-existant in the region

3) natural offsprings of recommended productions

4) potential production in the region

5) two of the recommended products: fish ponds and soil brick making do not figure in this chart

PRODUCT IMPACTS

POTENTIAL PRODUCERS

SUGGESTED PRIORITY AREAS

PRODUCT	Increased Income	Increased Employment	Lower Prices	Reduced Transportation	Increased Food Production	Better Distribution Ag. Produce	Men's Activity	Women's Activity	Suggested Priority Area
SOAP									Everywhere
FISH PONDS									Everywhere
PALM OIL									Kwilu & parts of Kwango
SACKS									Djuma & Kikwit
CARPENTRY									Kwilu & parts of Kwango
TANNING									Feshi Gungu
SOIL-CEMENT BLOCKS									Vanga

C. Other Possible Income-Generating Activities

This section of the report describes six additional income generating activties which have great potential for success: small animal husbandry, grain mills, food preservation, salt licks, seed commercialization, and fertilizer. All of these activities would directly contribute to improve the status of nutrition in the region. In general they require a greater investment in time, energy, and resources, making them more complex to initiate and operate than the first category of products. For the most part, there is not a strong existing demand for these activities and that demand must be created through education and extension work. In addition, more research is needed to determine the kinds of technical assistance necessary, and how that assistance could be delivered efficiently.

The research, planning, technical assistance and monitoring for these activities should start once a permanent organizational infrastructure exists and some of the first category of production activities have begun.

1. Small-Animal Husbandry

This activity includes raising rabbits, chickens, pigs, goats, ducks and pigeons. The demand for meat and eggs is growing, and the technical resources for small animal raising are available in the Kwilu-Kwango. Experimentation exists in different zones of the Kwilu-Kwango, specifically the Centre de Developpement Rural in Djuma, the Lusekele Agricultural project, and the Catholic Mission in Kingandu. In Lusekele, rabbits are sold to be raised and extension agents are available to give technical assistance. Little or no business skills training is provided to individuals who want to raise small animals.

The initial investment to build the housing or pens for the animals may be prohibitive for some. The operation itself requires a more sophisticated level of management than other activities due to the need for regular feeding and health care, and the perishability of the product. Thus, access to veterinary care is very important and small animal husbandry should be encouraged only where it exists.

One aspect of small animal raising activities which is very important to consider is that animals provide the only banking system most people have. Therefore, people are not used to and are often unwilling to raise animals for either sale or consumption. Consequently, a major educational effort is needed to convince people of the economic value of raising animals for profit.

In the long run small animal raising as a business would have high impact by increasing food production, improving nutrition and providing an added source of income to animal owners.

2. Grain Mills/Peanut Shellers/Rice Hullers

Presently manioc, corn, soya beans and coffee are processed into flour by pounding with a mortar and pestle or by transporting the products to a mission, project, or large commerçant (in the case of towns and cities) for grinding. Thus, obtaining cooking flour is a laborious and/or expensive chore. There is a high demand for cooking flour which is a staple food; however, the demand for processing mills has not been widely established because the technology is new, and the machines are not yet produced locally. They could be made by CEDECO (Centre de Developpement Communautaire) in

Bas-Zaire or other small machine production projects. Simple wooden rice hullers and peanut shellers are designed to be produced by CEDECO in collaboration with CEPAS Centre (Centre d'Etude pour l'Action Sociale) in Kinshasa.

Viable income generating activities could be launched with the introduction of these labor saving devices. Extension and village demonstrations must be provided to create a demand for food processing machines. Once the initial investment in a machine is made, good management and regular maintenance is necessary. The activity, in the long term, could lead to the use of gasoline or diesel engine grain mills. These require more sophisticated management, but have proven popular and successful as businesses in rural areas of West Africa.

Grain mills and other small agricultural machines are important labor saving devices. They facilitate access to processed food, and save time which women can devote to other activities of social and economic value. As a small business activity, these machines can become a major source of income for the owners.

3. Fish Processing

Currently most smoked, dried, and salted fish found in the markets of Kwilu-Kwango is imported from Kinshasa. The demand for fish is very high as it is an important ingredient in food preparation. Salted fish from Kinshasa in bite-size pieces which sell for 1 or 2 Zaires, can be found in even very small village markets.

Fish processing is a labor intensive activity which could be done in the region with technical assistance. Improved methods of smoking and drying would make the process more sanitary and minimize crumbling to facilitate transport.

Preserving fish could become an important activity associated with increasing fish pond production. (See FISH PONDS). Decentralizing the drying, smoking, and salting of fish will decrease cost, and increase availability to the consumers.

4. Salt Licks (Blocs a Lecher)

Salt licks are cement blocks containing salt and a formula of vitamins and minerals which contributes to the improved nutrition of animals. There is a growing demand for them, especially among cattle raisers. The salt licks come in a variety of sizes, as large as 25-30 kilos selling for 300 Z's and as small as those which are made with a sardine tin mold for rabbits, and sell for 5 Z'S a piece. The importance of salt licks is reflected in an unpublished working paper by Jean Wantz of CODIAC on the projected increases of cattle herd sizes. He compared theoretical projections for the increase in a herd of one hundred heiffers over a period of ten years with project assistance (range management, veterinary care, salt licks etc.) and without project assistance.

EVOLUTION OF A HERD OF 100 HEIFERS OVER TEN YEARS

	WITHOUT PROJECT	WITH PROJECT
Number of Heads	435	1327
Number of Bulls	8	16
Total Value After Expenses	240.000 Z	387.000 Z
Total Possible Profit	120.000 Z	275.000 Z

Given these figures and the fact that projects and missions in the Kwango emphasize cattle production as the future of the region, the salt lick is sure to grow in importance.

Currently development organizations are experimenting with salt lick production. These organizations have the infrastructure necessary to transport the ingredients for the blocks from Kinshasa. To decentralize fabrication, it will be important that a distribution center exist for these ingredients. Making the blocks requires a simple technique similar to that used for making cement blocks and could be taught easily. The salt lick contributes to increased food production and would be a valuable income generating activity associated with animal husbandry.

5. Seed Commercialization

Seeds are commercialized by some missions and agricultural projects but the demand far exceeds the supply. Individual farmers and various projects are anxious to buy seeds of improved varieties of manioc and beans, soya, okra, tomatoes, hot peppers, and eggplant, among others. To increase the accessability to seeds for planting, farmers must be encouraged to dry and store them for future sale. If more individual farmers sold seeds, their distribution would be facilitated and agricultural production improved and increased.

C. Fertilizer

A resource that many in the Kwilu-Kwango are not aware they have, is natural fertilizer. If people are educated regarding the value of animal manure as fertilizer, they could be encouraged not only to use it, but to collect, dry and sell it. This could become a labor intensive income generating activity with many benefits. First it will increase agricultural production and is much less expensive than using modern chemical fertilizers. Second it improves the soil. Third, natural fertilizer is an essential ingredient in the diet of fish raised in fish ponds.

The commercialization of fertilizer will require education; however, in the long term fertilizer contributes to a needed increase in food production.

D. Structure for Implementation

In order to develop small-scale enterprises in the Kwilu-Kwango, an organizational structure is necessary. Planning, training, and monitoring are required to establish and improve small businesses. A structural support system is necessary to help existing and potential small enterprises obtain the technical assistance they need to facilitate start-up and/or operation of productive economic activities.

Specifically, this structure must be able to provide technical assistance in business planning, marketing, accounting and other business and technical skills, as well as facilitate the provision of essential supplies and equipment. This organizational structure must be able to respond to the needs and problems of small producers. Analysis of the viability of each

economic activity proposed in this report demonstrates the importance of acquiring good business and management practices to achieve and sustain successful results.

For optimal productivity each activity will require an element of experimentation to best adapt the activity to the socio-economic and cultural context of the region. This same organizational structure would be the mechanism through which experimentation would take place, to adapt not only new technologies, but appropriate management systems to the needs of local producers. This organizational structure would be a center for gathering, organizing, interpreting, and disseminating information relevant to the needs of small business people. The existence of such an organizational structure would also provide a resource for public and private groups and individuals working on projects related to economic productivity in the region.

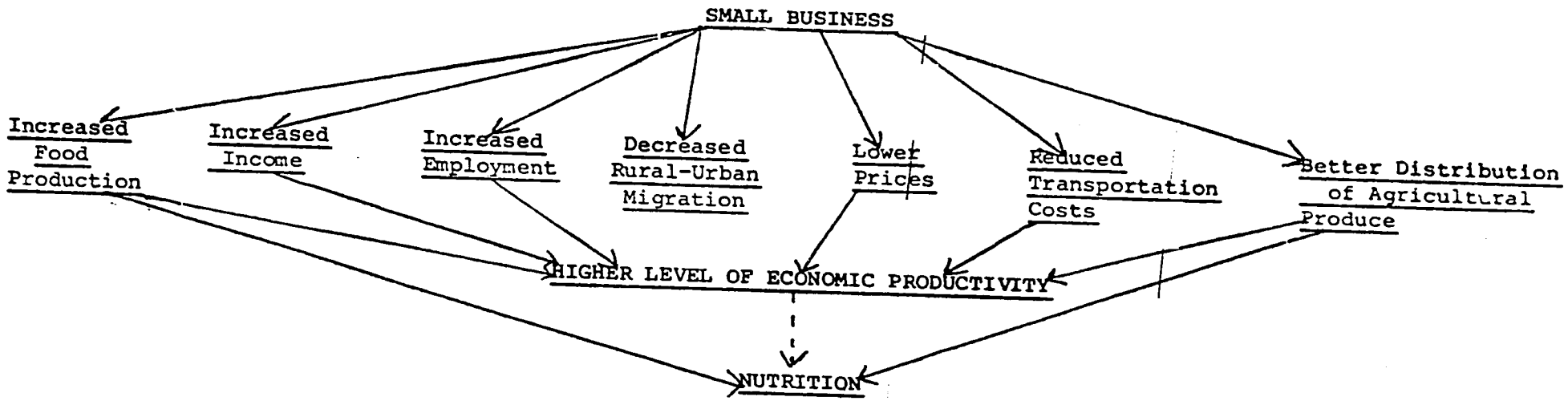
One of the most important services such a structure would provide is facilitating acquisition, storage, and distribution of basic materials, equipment and supplies needed for the business activities which are not available in the region, or available at highly inflated prices. This mechanism would reduce costs of these essential goods by cutting down on high transportation and transaction costs, and taxation.

This structure would also work with and through existing agencies on a long term basis to strengthen the capacities of national organizations to promote and sustain small business programs.

The successful development of small enterprises, to strengthen the economy of the Kwilu-Kwango, depends directly on the establishment of a coordinating organizational structure to plan business activities with local

people and serve as a resource and support mechanism during their implementation.

Relationship of Small Business to Improved Agricultural and Economic Productivity Leading to Improved Nutrition



_____ Direct Impact

- - - Indirect Impact

V. Constraints

A major constraint to economic productivity in the Kwilu-Kwango is the Zairian administrative system. Economic activity is administered by large parastatal and state-licensed companies centralized in Kinshasa. Remote areas such as Kwilu-Kwango are not fully serviced by a system which has great difficulty in extending itself beyond the capital boundaries. In its present form, this administrative system does little to encourage the people to seek out services and goods which enable them to undertake economic activities. It dissuades people from trying to start, or in some cases continue, small business activities.

Lack of adequate sources of energy is another big constraint inhibiting economic productivity. There is no electricity in most of the Kwilu-Kwango except for a few hours a day in Kikwit, and that which is provided by private groups or individuals. Because oil fuel must be transported from Kinshasa, the supply is expensive and irregular, and access is difficult in remote areas. These factors place high limitations on the types of production activities which can be carried out in the region. Wood will become a constraint if nothing is done about reforestation.

Cultural attitudes toward success constrain individual initiative to produce because both product and profits are considered clan property. When a person undertakes a productive activity, good management becomes a serious

problem due to relatives' rights to resources, making it difficult to plan and reinvest in that activity. In addition most people do not have a concept of taking loans for reimbursement. Thus, another obstacle to business start-up and/or investment exists because a credit extension program would require extensive education and monitoring.

The educational system proves to be a large constraint as those educated in a formal school learn few skills which help them earn money. On the contrary, education creates expectations for employment as a civil servant or administrator where no jobs are available, and produces graduates who shun manual labor as being beneath them.

An additional and big constraint to small business development is transportation. The infrastructure for both roads and waterways is weak making access to raw materials, supplies, and/or equipment difficult and expensive. Contributing to this problem of access is the fact that there is little diversification of modes of transportation. Most vehicles in the region are commerçant-owned trucks; there is little public transportation in rural areas; few people have bicycles; and there are not even drawn carts. Walking is by far the most common means of transportation.

Obtaining materials and supplies is another major bottleneck for people wishing to start up and run a small-scale enterprise. People with limited purchase power often do not have access to needed supplies because large companies will not sell in small quantities. For most products, purchasers need a permit to buy in large quantities. They, in turn, sell to smaller commerçants who sell in smaller quantities. There is an increase with

each transaction. A situation exists by which individual items are high priced and access to cost-efficient bulk purchase is nearly non-existent.

VI. Potentials of the Kwilu-Kwango

To put this study on small business in a perspective that takes into account not just the existing socio-economic situation of the Kwilu-Kwango, but also the future of the region, it is necessary to consider some basic trends of the potentials of the area.

The Kwilu-Kwango is a region with great potentials if certain measures are implemented. The energy resource of the Kwilu-Kwango is vast and diversified, but if not renewed and exploited its usefulness would be limited. The basic energy resources of the Kwilu-Kwango are its water and its forest. The river network of the region is extensive. The availability of water throughout the region and during the different seasons, through the river network and the water springs, facilitates the expansion of the agricultural production base and the fish culture base. More importantly this water energy could be transformed into hydro-electrical power to serve a basic need for electrification in the region.

The forest is another source of richness and potential, but if not renewed, the region, in the long run, would lose one of its basic sources of income. The need for reforestation cannot be overemphasized. The existing forest industries such as: palm oil production, lumber production, carpentry and fiber products as well as future industries such as the paper industry, depend totally on the forest and its renewal.

A second powerful base for the Kwilu-Kango, other than its energy

resources is its agricultural production. The region, even though its soil is not equally fertile in all areas, produces large quantities of agricultural crops that feed its population and to a large extent, the Kinshasa population. With the possibilities of enriching the soil through anti-erosion methods, rotation of crop systems and usage of fertilizers, the potential for increasing and improving agricultural production is a realistic one. Through improved seed varieties and seed multiplication, the diversification of agricultural crops is already happening, and the possibilities for this diversification to expand and touch a greater number of farmers is realistic, due to the large number of experimentations by a variety of projects, missions and individuals. This increase and diversification of agricultural production can lead to the establishment of several agro-industries.

A third economic base and area of growth is animal husbandry, specifically cattle, in the Kwango and the south of the Kwilu. A condition for increasing the cattle is the improvement of pasture resources. Some experimentation is already underway in the Feshi zone through the Italian integrated rural development project. CODAIC, the Bureau Diocesain de Developement, and many of the Catholic missions, are also experimenting with, and implementing several activities that will assist in increasing the number of herds. Future development programs might examine the possibility of producing a resistant dairy cattle hybrid through crossbreeding to lead to the possibilities of dairy production in the region.

Another area of strength in the region is the level of numeracy and literacy. Even though the educational system is the regular, traditional formal system that does not emphasize technical and vocational education, and

does not prepare the students in a way that helps them, among other things, to be economically productive, this system at least reaches the majority, 68% in the Kwilu region, and contributes largely to literacy and numeracy in the region. Hence, through the regional language and through French, the majority of the population have channels of communication that would have not been accessible to them without that base of literacy and numeracy; and through French the population of Kwilu-Kwango have access to the development agencies, and the expatriot communities. The accessibility of the Bandundu people to government agencies, development agencies and others as well as to the commercial sector, facilitate communication lines and reduce what might otherwise be separation from these sectors.

The numerous number of development agencies and missions that are focusing on the agriculture, nutrition and health sectors in the area is also a positive factor. The existance of these agencies over a long period of time and their spread throughout the region, creates a development human resource infrastructure, that facilitates the implementation and the extension of development projects.

Finally, there is an area of potential that has been to a certain extent overlooked; and that is the creation, through small enterprises, of another economic base for the region. Given the huge demand for certain items that would be produced or manufactured in the region due to the existance of most of the raw materials and supplies that are needed to produce them, and given the existance of some of the vocational skills needed and a certain base of experimentation, the possibility of pulling together the elements of a small business base is realistic if and when the right development support system or

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mechanism, creates or brings in an infrastructure that becomes the catalyst for stimulating small business in the Kwilu-Kwango.

The major economic productive base in the Kwilu-Kwango is at present an agricultural one. What used to be another economic base, industrial palm oil production is decreasing; therefore, the need for a second productive base is apparent. The potential for stimulating small enterprises is there, if and when stimulated, supported and established; small businesses can provide the region with a second major source of income which will impact on the socio-economic situation of the region, by increasing income, increasing employment opportunities, decreasing migration, and in some of its aspects increasing food production and in the long run contributing to decreased levels of malnutrition.

QUOTATIONS FROM THE FIELD

"Le bois ça ne chaume pas." Frère Felicien Ganzozi	On Carpentry
"Si les gens ont le choix entre se nourrir ou se laver, ils se laveront." Zairian Sociologist	On Soap
"Les gens vendraient leur dernier verre de chenilles." Soeur Rosa Steurs	On need for Financial Resources
"Les élèves d'aujourd'hui sont les gangesters de demain." A Catholic Priest	On the System of Education
"Il ne faut pas s'inquiétait, c'est après tout l'Office des Trous." A Driver	On the Condition of Roads
"Le gouvernement est un appareil compliqué et rouillé." A Zairian Priest	On the Government
"L'Etat gaspille tout son argent." An old Zairian Man	On the Government
"Le système d' éducation classique stérilize les jeunes." A technical advisor	On the System of Education
Il y a trois postes budgetaires de base: les aliments, frais scolaires et de santé, et ce qu'on doit payé aux agents du gouvernement." A Social Scientist	On Household Budget
"Simply having a recipe for soap, does not mean you know how to start a small enterprise." Elizabeth Reid	On Small Enterprises
"The Bandundu region has one economic base which is agricultural production; it needs another one based on small business." Dan Fountain	On Small Enterprises

ANNEX I

PERSONS CONTACTED

Washington D.C.

Christine Babcock	A.I.D.
Mellen Duffy	A.I.D.
David Eckerson	Consultant/Seattle
Dr. Guy Gran	Prof. at American University

Kinshasa

Julie Born	Assistant to Gen. Dev. Off. A.I.D..
Timothy Born	USAID/Program Office
Cit. Kimpwene Bingo	Union des Travailleurs du Zaire
Dr. Judith Brown	Consultant/AID, CEPLANUT
Dr. Richard Brown	Project Advisor CEPLANUT
Polly Diven	Area Rural Dev. AID
Pere Didier de Failly	Le Centre d'Etudes pour L'Action Sociale (CEPAS)
Chris Fowler	Assistant Director Peace Corps
Cit. Mulamba Wa Kabasele	USAID
Sangwa si Makumbi	UNTZA
Gerrit Marseille	Armee du Salut
Cit. Mutala Mbuyi	CEPLANUT
Cit. Mulebo Milomba	CEPLANUT
Cit. Muadi Muamba	UNTZA
Dr. Kabamba Nkamany	Director CEPLANUT
William Pruitt	Director Peace Corps
Deborah Rectenwald	Peace Corps Volunteer
Elizabeth Reid	Area Rural Dev. AID
Cit. Lungela Sakananu	Advisor in Appropriate Technology (CEPAS)
Derek Singer	Gen. Dev. Office AID
Thomas Wayman	Assoc. Peace Corps Director
Ann Williams	Area Dev. Project AID
Cit. Massey Zanga	World Bank, Ag. Tech. Asst.

Kwilu Kwango Region

Kikwit

Cit. Bubu	Asst. Dir. for Commercialisation CODAIC
Cameron Burn	Agricultural Consultant

Eckart Diner	Director for Extension Agents CODAIC
Andre Le Duc	Director CODAIC
Abbe Guya Ebeng	Bureau de Developpement Diocessain
Sylvie Etian	Coordinatrice CEPLANUT
Cit. Ebondo	CODAIC
Frere Felicien Ganzozi	Mission Sacre Coeur
Cit. Ndombe Givudi	Agronome Inspecteur Programme National Riz
Cit. Ukondalemba Kasetu	Union National des Travailleurs du Zaire (UNTZA)
Cit. Kwalatu	Soap Maker
Marguret Ledoux	OXFAM
Citoyenne Gashama Lwamba	Union National des Travailleurs du Zaire (UNTZA)
Cit. Lukinga Mbomba	Fisherman
Cit. Mizele	Assistant Gen. Director CODAIC
Cit. Mambuve de Ibal'a Nshim	UNTZ
Cit. Ntil	Asst. Dir. of Planning CODAIC
Cit. Mayo Pulu	CEPLANUT
Cit. Mudherwa Runesha	CEPLANUT
Jim Setzer	CEPLANUT
Cit. Sondi	CODAIC
Jean Wantz	Director of Planning CODAIC
Pere Paul Wathelet	Prefet Institut Technique et Professionel de Kikwit
Jack Zippert	Peace Corps Adv. for Fish Culture

Northern Region

Nzinda

Philip Martin	Peace Corps Tech. Asst. in Fish Culture
Cit. Kapumba Gulumbenza Kitha-Pana	Manager of Nzinda Fish Ponds

Lusanga

Robert Collard	Director of Plantation of Lever of Zaire

Vanga

Cit. N'zila Fanana	Accountant
Dr. Daniel Fountain	Medical Doctor
Peggy Froehlich	Nurse
Rev. Pambi Mbalaga	Pastor
Cit. Musiti Muliele	Dir. of the Hospital of Vanga
Cit. Mukengele	Director at Vanga Hospital

Cit. Mayambu Musingo	Manager of Carpentery Workshop
John Scott	Advisor in Brick Making
Rev. Kinana Tababa	Pastor
Lusekele	
Cit. Akka Mungombo	Centre Agricole de Lusekele
Harvey Polley	Centre Agricole de Lusekele
Gary Selig	Centre Agricole de Lusekele
Djuma	
Cit. Musombo Basadiketi	Manager du Centre du Developpement Rural
Kondji	
Cit. Binieme Kiurisu	Fisherman
Cit. Mubebe	Net Maker
Bulungu	
Citoyenne Kifanga	Palm-Oil Maker
Southern Region	
Gungu	
Abbe Kwabika	Bureau de Dev. Diocesain
Kisandj	
Pere Le Jeune	Institut Technique Agricole
Rebecca Merica	Institut Technique Agricole
Feshi	
M. Veri	Italian Inte Rural Development Project
Kingandu	
Dr. Lydia Kersh	Kingandu Hospital
Cit. Kikalulu	Veterinarian Dr. Centre de Dev. Rural
Soeur Rosa Steurs	Centre de Dev. Rural
Bamba	
Cit, Kikalulu	Veterinarian Doctor

N.B. During our field work, information was also gathered from numerous small business people in the Kikwit Region as well as vendors and buyers in the markets of Kikwit, Vanga, Djuma, and Gungu.

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ANNEX II

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