

PN-ABJ-798

744 89

**Mali Microenterprise  
Sector Assessment  
and Strategy**

**Volume One:  
Main Report**

*GEMINI Technical Report No. 20*

**GEMINI**

**GROWTH and EQUITY through MICROENTERPRISE INVESTMENTS and INSTITUTIONS**  
7250 Woodmont Avenue, Suite 200, Bethesda, Maryland 20814

**DEVELOPMENT ALTERNATIVES, INC. • Michigan State University • ACCION International •  
Management Systems International, Inc. • Opportunity International • Technoserve • World Education**

# Mali Microenterprise Sector Assessment and Strategy

by

Development Alternatives, Inc.

William Grant  
Team Leader

**GEMINI Consultants:**

Kim Aldridge  
James Bell  
Ann Duval  
Maria Keita  
Steve Haggblade

**Peace Corps Participants:**

Torn Condon  
Stephanie Condon

**NGO and Other Malian Participants:**

Seydou Coulibaly	Ibrahima Coulibaly
Mamadou Coumare	Modibo Mariko
Cheikna Sidibe	Youssouf Sanogo
Abdou Togola	Mariam Toure

October 1990

This work was supported by the U.S. Agency for International Development, Bureau for Asia and Private Enterprise, Office of Small, Micro, and Informal Enterprise, through core funding to the Growth and Equity through Microenterprise Investment and Institutions (GEMINI) Project, contract number DHR-5448-C-00-9080-01, and through buy-ins from the Bureau for Africa, Office of Sahel and West Africa Affairs, contract number DHR-5448-Q-04-9081-00; USAID/Mali, contract number DHR-5448-Q-24-9081-01; and the Bureau for Planning and Policy Coordination, Office of Women in Development, contract number DHR-5448-Q-28-9081-02.

# TABLE OF CONTENTS

Page

## VOLUME ONE

### MAIN REPORT

#### EXECUTIVE SUMMARY

vii

#### CHAPTER ONE

##### BACKGROUND AND OVERVIEW TO THE ASSIGNMENT

1

##### INTRODUCTION

1

Goals and Approaches

2

##### CONTEXT FOR THE STUDY

3

Sociological and Macroeconomic Environment

3

Micro and Small Enterprise (MSE) Activities

4

Gender Issues

6

#### CHAPTER TWO

##### SUBSECTOR ANALYSES AND GROWTH PROSPECTS FOR SMALL-SCALE ENTERPRISES

9

##### THE SUBSECTOR APPROACH

9

General Principles

9

Methodology

10

Selection Criteria

10

##### VEGETABLE PRODUCTION AND MARKETING

13

Markets

13

Supply Channels

13

Driving Forces

16

Opportunities

10

Leveraged Interventions

17

##### AGRICULTURAL MACHINERY SUBSECTOR ANALYSIS

17

Markets

18

Alternate supply channels

18

Driving Forces

20

Opportunities and Constraints	21
Leveraged Interventions	21
<b>SKINS AND HIDES SUBSECTOR</b>	21
Markets	22
Supply Channels	22
Driving Forces	24
Major Constraints and Opportunities	24
Leveraged Interventions	25
<b>GARMENT SUBSECTOR ANALYSIS</b>	25
Rationale	25
Markets	25
Supply Channels	26
Dynamics	28
Constraints and Opportunities	28
Leveraged Interventions	29
<b>DOMESTIC ENERGY CONSUMPTION</b>	29
Markets	29
Supply Channels	30
Driving Forces	30
Constraints and Opportunities	33
Leveraged Interventions	33
<b>TEXTILES</b>	33
The Market	34
The Market for Factory Prints	34
The International Market	34
The Different Chains of Production	36
The Driving Forces	36
Opportunities and Constraints	36
Leverage Points for The Sector	37

### **CHAPTER THREE**

<b>INSTITUTIONAL SUPPORT TO MICRO AND SMALL ENTERPRISES</b>	39
<b>TRAINING</b>	39
<b>FINANCIAL</b>	40
Formal Sector Loans	41
Projectized Lending	41
<b>TECHNOLOGY DEVELOPMENT AND TRANSFER</b>	42
<b>THE PVO AND NGO COMMUNITY IN MALI</b>	42
<b>TECHNICAL ASSISTANCE TO ENTERPRISES</b>	44
<b>INTEREST GROUPS AND COORDINATION: UNIONS, DONORS, AND GOVERNMENT AGENCIES</b>	44
<b>CONCLUSION</b>	45

## CHAPTER FOUR

<b>MAJOR CONSTRAINTS AND LEVERAGED OPPORTUNITIES FOR MSE</b>	<b>47</b>
<b>POOR COORDINATION AMONG THE EXPORT CHANNELS</b>	<b>48</b>
Opportunities	<b>48</b>
<b>UNDERDEVELOPED SYSTEMS FOR FINANCIAL INTERMEDIATION</b>	<b>49</b>
Opportunities	<b>49</b>
<b>MARKET SATURATION THROUGH IMITATION</b>	<b>50</b>
Opportunities	<b>50</b>
<b>HIGH COST OF INTERMEDIATE GOODS — TRANSPORT AND TECHNOLOGY</b>	<b>50</b>
Opportunities	<b>51</b>
<b>WEAK MANAGEMENT AND TECHNICAL SKILLS</b>	<b>51</b>
Opportunities	<b>52</b>
<b>UNFAVORABLE POLICY AND REGULATORY ENVIRONMENT</b>	<b>53</b>
Opportunities	<b>53</b>

## CHAPTER FIVE

<b>MICROENTERPRISE STRATEGY</b>	<b>55</b>
<b>STRATEGIC FOCUS. THE NGO AS THE CENTRAL THRUST TO THE STRATEGY OPTIONS: POINT OF AID COMPARATIVE ADVANTAGE AND POINT FOR LEVERAGED IMPACT</b>	<b>55</b>

## VOLUME TWO

### ANNEXES

<b>ANNEX A: VEGETABLE PRODUCTION AND MARKETING</b>	<b>A-1</b>
<b>ANNEX B: AGRICULTURAL MACHINERY IN MALI</b>	<b>B-1</b>
<b>ANNEX C: SKINS AND HIDES SUBSECTOR ANALYSIS</b>	<b>C-1</b>
<b>ANNEX D: MALI MICROENTERPRISE STRATEGY SUBSECTOR ANALYSIS</b>	<b>D-1</b>
<b>ANNEX E: MALIAN WOODFUELS AND VILLAGE ENTREPRENEURSHIP</b>	<b>E-1</b>
<b>ANNEX F: LA FILIERE TEXTILE AU MALI</b>	<b>F-1</b>

**LIST OF TABLE AND FIGURES**

<b><u>Table</u></b>		<b><u>Page</u></b>
<b>1</b>	<b>Overall Statistics</b>	<b>5</b>
<b><u>Figure</u></b>		
<b>1</b>	<b>Mali Subsector Selection Criteria</b>	<b>12</b>
<b>2</b>	<b>Perishable Vegetables Subsector Map</b>	<b>14</b>
<b>3</b>	<b>Non-Perishable Vegetables Subsector Map</b>	<b>15</b>
<b>4</b>	<b>Agricultural Machinery Subsector Map</b>	<b>19</b>
<b>5</b>	<b>Skins and Hides Subsector Map</b>	<b>23</b>
<b>6</b>	<b>Garments Subsector Map</b>	<b>26</b>
<b>7</b>	<b>Woodfuels Subsector Map - I</b>	<b>30</b>
<b>8</b>	<b>Woodfuels Subsector Map -II</b>	<b>31</b>
<b>9</b>	<b>Textile Subsector Map</b>	<b>35</b>

## **EXECUTIVE SUMMARY**

The recent political upheaval in Mali was largely a result of dissatisfaction among economically frustrated and politically disenfranchised groups. Mali needs to do something to jump start its economy and offer more opportunity to the young graduates and soon to be laid off civil servants as the structural adjustment program continues its path. In the African context, strengthening and energizing micro- and small-scale enterprises (MSEs) offer excellent means of stimulating economic opportunity.

This microenterprise strategy, carried out for USAID/Mali in conjunction with A.I.D./Washington, analyzes the current state of MSE activities, constraints to growth, and opportunities for addressing those constraints. The strategy reviews the options open to USAID/Mali within the context of its program and makes recommendations on how the Mission can use its resources most effectively, generating the greatest amount of leverage, to address MSE-related issues.

Subsector analysis lies at the base of the research carried out in developing this strategy. Subsector analysis examines the vertical channels through which small and large firms interact to transform raw materials into products and to deliver products to markets. Digging into six subsectors (spinning and weaving, skins and hides, garments, vegetable gardening, domestic energy consumption, and agricultural equipment) identified numerous constraints and opportunities confronting MSE growth. The specific findings of the six analyses revealed common problem areas. The subsector analyses were complemented by a review of the institutions supporting MSE activities and the policy environment.

Training counterparts of both U.S. and Malian nongovernmental organizations (NGOs) in the application of the subsector methodology was an extremely important component of the exercise. Ten Malians from five NGOs, a Malian government development agency, and two persons from local consulting firms, along with two Peace Corps volunteers, were trained in the methodology and subsequently undertook a significant portion of the research and analysis presented in the strategy and its annexes. The Malian participants presented their findings to the NGO community at large at the end of the exercise.

### **MICRO- AND SMALL-SCALE ENTERPRISES IN MALI**

Census figures in Mali do not provide much insight into the true expanse of MSE activities in the country, listing only 80,000 artisans and 35,000 apprentices. The census information does not identify and capture secondary employment, which is where much MSE activity is located, particularly in the rural areas. However, the national accounts claim that the non-structured sector, which largely comprises MSEs, accounts for 99 percent of value added in the primary sector and 29 percent and 46 percent of value added in the secondary and tertiary sectors, respectively.

MSE activities are heavily based in rural areas and, assuming that there are parallels between Mali and its neighbor Burkina Faso, employs about two-thirds women and one-third men. The largest sectors of activity are traditional crafts such as spinning and weaving, tailoring, and blacksmithing.

## INSTITUTIONAL

At least nine government agencies and numerous ministries are involved in promoting, regulating, and assisting MSEs. In addition, there are numerous donor interventions, either as autonomous projects or in support of existing NGOs or government agencies. These institutions and projects are generating valuable information and experience that can direct future interventions.

Donor projects in support of MSE are as dynamic in Mali as in any other country in West Africa. Recent studies point to the fact that more than two dozen projects have put nearly \$100 million of capital at the disposal of financial institutions and to donor-executed projects. In addition, there are over 200 Malian NGOs and another 100 or so international NGOs, many of which are interested in MSE development, despite very limited capacity. A significant opportunity exists to support these entrepreneurial NGOs, as they make the shift into this new market opportunity, by providing resources for institutional development in MSE activities.

## CONSTRAINTS AND OPPORTUNITIES

The major constraints to MSE growth in Mali are presented below with some of their possible solutions:

**Underdeveloped systems for financial intermediation.** The donor community has put significant resources, soon to be \$100 million, at the disposal of the Malian banking system and donor projects to apply to problems of enterprise development. Yet these resources are not being fully utilized because the systems and structures do not exist to get them cost effectively to the target audience. Rather than stimulating financial intermediation, the unused funds are proof of its absence in the Malian MSE context.

Donors must now help develop creative financial products and systems to deliver these resources to a very large potential market. NGOs or other intermediate institutions will need to interface between the formal banking system, which will never realistically get involved in direct lending to MSEs on a large scale, and project beneficiaries. The institutions and resources are there; only the product development is missing. The Malian banks have shown a preliminary interest, and there is an opportunity to build on that interest by working with them and subsidizing new product development, as has been done with their now widespread lending to village associations in the cotton zones.

**Market saturation through imitation.** MSEs imitating their successful neighbors flood the markets with the same products. This is a common problem in countries where the known opportunities for market development are few and the markets are small.

Donors have an opportunity to introduce new product ideas and to facilitate dynamic market behavior among the MSEs by assisting with technology transfer and creative marketing solutions that focus on product differentiation.

**Poor coordination among the export channels.** Successful export depends on providing competitive prices, and reliable quality, quantity, and delivery to the markets. Without these elements, there is little chance of success for developing long-term export potential. In vegetables and leather



products, Mali has the capacity to produce for export, but lacks the coordination within the channels to respond to the four critical criteria. Yet there are market makers in each of these subsectors, exporters or brokers, who interface with large numbers of the MSE participants and can serve as the points of leverage for market-oriented interventions.

**High cost of intermediate goods — impact of transport and technology.** The high cost of intermediate goods raises the overall cost of production and limits the size of the market for agricultural machinery and vegetables. Changing the factors of production will help to reduce the costs and hence increase the potential market. Donors can enhance the quality of their interventions in technology development by integrating them into the production and marketing channels rather than developing prototypes in isolation of potential buyers.

**Weak management and technical skills.** These plague MSEs the world over limiting their capacity to manage their resources efficiently or to seize on new market opportunities. These problems can be addressed via practically oriented training programs that concentrate on both the mechanics and the reasons behind them. These programs should seek to identify key entrepreneurs in each area and get them on board so there will be greater direct transfer among themselves.

**Unfavorable policy and regulatory environment.** The policy and regulatory environment in Mali negatively affects the private sector in general and can be especially constraining at the micro-level. Regulatory problems were experienced in the woodfuels sector, tax problems with garments, and import duties with agricultural machinery.

The change of government provides an excellent opportunity to address many of these policy and regulatory constraints; the critical factor is to draw them to the attention of both the donors and the government. Donor projects and NGO interventions can provide excellent sources of information regarding those policy and regulatory constraints on MSEs because the donors, through assistance to the private sector on a regular basis, understand the impact of MSEs. But the channels to collect and feed that information back to the donors have not been developed. By focusing attention on this opportunity, the donors can get concrete examples of the policies they are trying to reform.

## CHAPTER ONE

### BACKGROUND AND OVERVIEW TO THE ASSIGNMENT

#### INTRODUCTION

Mali finds itself in a precarious situation. The recent political events have added a new level of tension to an environment characterized by stringent economic problems. Issues related to unemployment among young graduates, civil servants laid off from unprofitable state-owned companies which donor pressure is forcing the government to close down, and dissolving economic opportunities are foremost on many people's minds. A study<sup>1</sup> done for USAID in 1988 pointed out the urgency of the problems at that time and raised the necessity of seeking increased employment opportunities from the informal sector. In the ongoing search for solutions to these major problems and recognizing the role that micro and small enterprises (MSE) can play in offering employment opportunities to target groups, USAID/Mali sought to undertake a jointly funded<sup>2</sup> strategy exercise through the Growth and Equity through Microenterprise Investments and Institutions Project (GEMINI) to determine how it can best use its resources to help Mali out of its current predicament.

The subsector methodology forms the basis for this strategy. It consists of an examination of the situation confronting MSE's within specific industries. Rather than looking "horizontally" at the behavior of the MSE community across many industries, it examines the activities of MSE's, larger firms, consumers and policy makers within the "vertical" structure of a single industry. It analyzes the channels through which small and large firms interact to transform raw materials into products and to deliver products to markets. The analysis identifies areas of cooperation and competition between different scales of firms and where the comparative advantages for MSE's lie. It considers how the industry is evolving and what forces are behind these changes.

This "vertical" analysis shows where the industry as a whole is growing and how MSE's can contribute to and profit more fully from this growth. Subsector analysis identifies key linkages, or "nodes", within the industry at which interventions can have the greatest impact, either on employment or on value added, by creating a catalytic effect on enterprise development.

This report combines the results of 6 subsector analyses (spinning and weaving, skins and hides, garments, vegetable gardening, domestic energy consumption, and agricultural equipment) in Mali with a general examination of ongoing and planned MSE support programs. By providing USAID staff with a hierarchical ranking of possible interventions across subsectors, and with a general sense of which of these possibilities are and are not now being pursued, it will enable USAID to make better informed decisions about where they might intervene to support the specific industries analyzed and the MSE sector as a whole.

---

<sup>1</sup> Grant and Hanel, the Business Climate in Mali, 1988.

<sup>2</sup> Funding for the pilot exercise came from the GEMINI Core for strategy concerns, PPC/WJD to address women in development issues, and the Africa Bureau's Sahel West Africa Office (AFR/SWA) to provide research support to the Club du Sahel.

## **Goals and Approaches**

The goals of this strategic planning exercise were several fold and encompassed: research; strategy development; and the pilot testing and application of training materials with individuals not previously familiar with the subsector methodology.

At the research level, the purpose was to do subsector analyses for several industries in Mali in which MSE's play or can play a major role to further our understanding of MSE dynamics in the Sahel countries.

At the strategy level, after reviewing existing and planned MSE support programs and government policies which affect MSEs, the goal was to understand the institutional and policy environment in which they interact; to use the results of these analyses to identify the principal obstacles to MSE growth, including major areas of opportunity not being pursued where high impact USAID intervention could take place.

At the training level, the goal was to serve both as the first field test of the training materials developed under GEMINI to train staff in the subsector methodology as well as to be the first application of the training to local personnel who are not trained consultants. The training component of the exercise was of significant importance both as a learning experience for all involved and as a contribution to increasing awareness of subsector analysis and microenterprise development in Mali.

During this strategy exercise, four American consultants, three Malian consultants, two Peace Corps Volunteers, five staff members from Malian NGOs and one staff member from a Government of the Republic of Mali (GRM) rural development organization, received two days of formal training in the subsector methodology and then carried out six subsector studies over three weeks under the supervision of one trainer (10 days) and an experienced team leader (4 weeks). The training of the professional consultants targeted increasing both Sahelian as well as US consulting capacity in subsector analysis. The training of the Malian NGO staff targeted institutional strengthening and exposing them to many key concepts in MSE development for the first time.

The study was implemented during six weeks in Mali. The team leader and deputy team leader arrived one week early to collect general information on the size and composition of the MSE community, and to interview and select the Malian staff. After the rest of the consultants arrived, the entire team undertook the two day training exercise presented by a specialized trainer who had developed the field materials. The training included a review of the concepts of the subsector methodology and ended with the exercise of selecting the subsectors from among a dozen possibilities. Following the training, the entire team carried out six subsector analyses and an institutional/program review. Field work included interviews with numerous small and large firms in the major towns and in rural areas. It also included meetings with GRM, donor agency and NGO representatives active in MSE support. After four weeks in country, three outside consultants and all of the local research assistants stopped while the rest of the team completed the strategy document.

Before leaving the country the team briefed USAID on both the findings from the subsectors and its proposed strategy. The team carried out similar briefings with the NGO MSE Pivot Group to ensure that the conclusions from the study were transmitted to the NGO community as a whole. The subsector presentations to the NGO community were made by the NGO participants in the studies and served as an opportunity for them to apply what they had learned during the four week period.

## CONTEXT FOR THE STUDY

### Sociological and Macroeconomic Environment

Mali is a landlocked country in Francophone West Africa of 1.24 million square kilometers and somewhat more than 8 million people. Its geography is varied, characterized by largely barren, ecologically expanding deserts in the north, Sahelian scrublands reaching across much of the middle of the country, and wetter, forested, sub-tropical savannahs in the south. The country's current economic life is affected strongly by two opposing natural phenomena: the long traverse of the Niger River, whose "interior delta" of small tributaries and canals enriches the country's agricultural potential, and the high incidence of drought over the last two decades, leading to increased desertification. Instability in agricultural yields and herd losses from diminished grazing acreage and lack of water have been a consistent problem for Mali over the past two decades.

In spite of a steady 5 percent growth in urban population, close to 80 percent of Mali's population is still situated in the rural areas, largely dependent on rainfed agriculture. Millet is the dominant subsistence crop in the Sahel and sorghum is also widely grown. Both staples are complemented by rice which is grown along the Niger.

Malian GDP in 1988 was \$1.95 billion and, in constant prices at that level, was only 16 percent higher than in 1982. With corrective policy adjustments and respite from bad weather, it has maintained a 6 percent average GDP growth over the last five years since the drought years of the mid-1980's.<sup>3</sup> Malian per capita income stands at about \$260, still among the lowest in the world.

Most of the recent growth in GDP can be attributed to cereal and cotton output. However, the industrial sector, which remains small and is dominated by relatively low value-added agro-processing, experienced the largest annual growth rate over that period at 8.1 percent. Light consumer good and building material manufacture exists in minor quantities. In spite of evidence supporting a slow rise in per capita income, most authorities support the conclusion that per capita consumer spending has been falling in recent years. These statistics reflect a weakening of the internal market and are supported by anecdotal evidence from local merchants. Saving on the other hand has averaged as much as 8.1 percent of GDP (1987-89).

Mali's citizens are 90 percent Moslem. The culture is dominated by a number of tribal languages, among which Bambara is the most prominent (spoken by approximately 33 percent of the population). Bambara is dominant in Mali's capital, Bamako, which is reportedly nearing 1 million inhabitants, absorbs somewhat over one-tenth of the population. Other major cities include Mopti, Segou, Sikasso, Kayes, and Gao. French is the country's official language. Until 1960 Mali was a region known as "Le Soudan" in the French colony of West Africa.

After independence, Mali and Senegal were briefly federated, but the union was soon dissolved. Since that time, Mali has been an independent state. With the exception of a brief period when it established an independent currency, Mali has been a member of the West African Monetary Union (UMOA) since its founding. The common currency is the CFA, which is pegged to the French franc. Mali, thus, profits from the expected stability which linkage to a strong currency provides, but also suffers the effects of ongoing over-valuation.

---

<sup>3</sup> Output in 1988 was 85 percent greater than in 1985, primarily due to improved agriculture.

The relative cost of Malian labor is high, prejudicing exports, while at the same time tight government spending and monetary policy have been necessary to constrain inflationary tendencies and hold prices below those of competitors on world markets. Inflation has averaged 1.5 percent per annum over the last five years. Consistent with the foregoing, a freeze on the minimum wage and on government bureaucratic salaries has been in place for some time. This explains some of the drop in per capita consumer spending, noted previously. In general, recent government policies have strongly promoted private enterprise and also attempted to direct credit towards private initiative, a marked departure from the policy environment which characterized the first two post-independence decades. Gross domestic investment averaged 23.4 percent of GDP from 1985 to 1989.

After years of lax management, total public debt rose to more than 106 percent of GDP by 1988 and the current account deficit peaked in 1985 at 31.1 percent of GDP. This is being controlled and the debt service ratio had fallen to 27 percent of GDP by 1989. Although Mali has witnessed a deterioration in its terms of trade of approximately 20 percent since 1980, largely owing to a fall in cotton prices, and has long suffered general external account deficiencies, the current account deficit had fallen to 13.5 percent of GDP by 1989 which represents a strong improvement.

Export volumes have increased at roughly the 6 percent rate of GDP growth since 1985. Besides cotton and cereals, peanuts from the Sikasso region in the south are a strong Malian export crop. Large amounts of unexploited minerals lie in the Sahara (iron, bauxite, manganese, and phosphates have been identified). Gold also exists in significant quantities and is exported. No hydrocarbon deposits have been located yet — contrary to many expectations. Mali currently receives considerable amounts of foreign assistance from donor agencies and these contributions as well as various debt relief agreements have enabled Mali to record a balance of payments surplus in both 1988 and 1989, after a decade of deficits. These surpluses in turn allowed Mali to wipe out its operation's account deficit with the French treasury, a positive development in view of Mali's continued dependent economic relationship with France.

### **Micro and Small Enterprise (MSE) Activities**

MSE activities in Mali contribute significantly to supplying products and services to both urban and rural populations. In 1987, according to the National Direction of Statistics and Information, the non-structured sector produced total net incomes as follows: 1) primary sector (agriculture) 281 billion FCFA; 2) secondary sector (manufacturing) 16.7 billion FCFA; and 3) the tertiary sector (services) 104 billion FCFA. In total, the nonstructured sector accounted for 70 percent of total economic activity, and 29 percent and 46 percent respectively of value added in the secondary and tertiary sectors, with MSEs comprising large portion of this. In 1991, it is predicted that the growth in the MSE sector (3.0 percent) will exceed the overall growth of the GDP (1.4 percent). In most of the areas where MSEs are working in the transformation sector, they also account for a large percentage of the value added, while more formal enterprises have lower value added due to large investments.

TABLE 1  
OVERALL STATISTICS

	Net	Sales	Added	Income	Sales	Income	Sales
Food Agric.	109039	118017	92.39%	109355	120523	99.71%	97.92%
Indust. Ag.	27438	2961	92.66%	28420	37759	96.54%	78.42%
Fisheries	95990	109081	88.00%	95990	109081	100.00%	100.00%
Sylviculture	35998	37893	95.00%	35998	37893	100.00%	100.00%
Extraction	12568	12896	97.46%	13873	15200	90.59%	84.84%
Ab Business	811	4564	17.77%	18307	35304	4.43%	12.93%
Textiles	1865	5000	37.30%	5488	14716	33.98%	33.98%
Manufacturing	5013	15590	32.16%	11848	36845	42.31%	42.31%
Batiments	9022	27067	33.33%	22031	62946	40.95%	43.00%
Commerce	57671	71561	80.58%	93963	110432	61.38%	64.81%
Transport	18027	42007	42.91%	27218	63425	66.23%	66.23%
Uther Sales	26928	32988	81.63%	27216	33733	98.94%	97.65%
Financial		0		6549	9518	0.00%	0.00%
Other Services	1087	1087	100.00%	69637	102032	1.56%	1.07%

It is very difficult to get an accurate estimate of employment in the MSE environment. The DNSI estimates that there are approximately 80,000 artisans and 35,000 apprentices in this sector, but this pales before the 560,000 artisans identified in the census in neighboring Burkina Faso 5 years ago.<sup>4</sup> Given the intermittent nature of many MSE activities, even the Burkina figures probably underestimate the actual number of participants. Women comprise a large percentage of employment among MSE activities in Mali. For example vegetable production, raising small ruminants, pottery, textiles, traditional tanning, soap making, consumable oil production, and small restaurants are dominated by women employees.

The MSE sector provides an important source of employment and income to rural families as a secondary activity after the yearly agricultural production campaign. Many farmers become blacksmiths, cut fire wood, harvest animal fodder, or go to the urban areas to weave and enter the construction trades. Meanwhile women produce vegetables, make pottery, and spin thread during the months of November to March. These activities are important in maintaining the cultural and social traditions in the village as the handicraft traditions are often dominated by castes and passed down from generation to generation. This very characteristic must be recognized as an often limiting factor for the growth potential of many MSEs.

Malian small enterprises are characterized by the following attributes:

- They usually transform raw materials into finished products manually;
- They have a minimum of tools and equipment available;
- Their working capital and inventory is very limited (one estimate places the average value of stock at less than 10,000 FCFA);
- Labor tasks are repeated for each item produced instead of dividing labor for greater production;

<sup>4</sup> Burkina Faso and Mali have roughly the same population and many other similarities lead us to assume that the structure of rural off farm activities is very similar.

- The clients have weak purchasing power;
- The business is primarily operated out of the home and employs principally family members;
- There is generally limited movement of these enterprises into the formal sector;
- Most raw materials are supplied locally and not imported; and
- Most of these businesses are not registered.

The competition with the formal sector varies depending on the nature of the enterprise. However, it is often very strong in certain sectors. For example the importation of plastic and leather shoes and sandals has had a very negative effect on the local shoe makers and their market is diminishing year by year as they are not able to compete on price or quality with imported shoes.

MSE activities are likely to grow as the GRM reforms its policies and promotes the private sector. New measures are being developed to reduce and simplify trade, reform the tax and commercial codes, decrease government regulation of the private sector. In addition there will be a new class of potential microentrepreneurs as large numbers of civil servants are laid off under the cost cutting programs.

### **Gender Issues**

National Accounts indicate that there are 1,281,944 women employed in Mali, representing 37.6 percent of the employed population. Women are relative new-comers to the business world, however. This is due to several factors, cited by Crisetti in a 1990 ILO study, *Les Femmes Entrepreneurs au Mali*. Socio-cultural norms, particularly Islamic, have encouraged women to remain in their traditional place in the home, serving the male head of household. However, with decreasing purchasing power, one source of income is no longer sufficient to satisfy the family needs. More and more women are becoming the sole providers for their families. Because there are few opportunities for employment in the formal sector, women are turning to self-employment and enterprise creation.

Women are active in the urban informal sector, but as yet are under-represented in the formal sector, with probably no more than 35-40 registered businesses owned by Malian women. The ILO study estimated the number of small and medium women owned businesses operating in Bamako at 200-500, with an additional 3,500-4,000 self-employed women operating in the informal sector.

In both the formal and informal sectors, women are most involved in the commercial and service sectors. Within the informal service sector, entrepreneurial activities include hair-dressing, sewing, and food preparation, the latter by far being the most important. Many specialized businesses have been developed by women entrepreneurs. Women are also very active in commerce and in artisanal activities. Within the formal sector, women are also most active in commerce, followed by participation in service industries such as medical clinics, private educational facilities, hair salons and dress-making businesses.<sup>5</sup>

---

<sup>5</sup> The garment sector, analyzed below, identified a particularly large number of tailoring shops owned by wives of civil servants, well educated and with the financial resources to start the business. They employed primarily men.

As noted by Ernst & Young in **Mali: Women in Private Enterprise**, entrepreneurs in Mali face a number of common constraints regardless of gender: a limited domestic market, onerous and irrational taxes, lack of credit for investment, lack of access to market information, and lack of technically skilled labor. A number of constraints, however, impact particularly on women.

Perhaps most important are limitations on women's legal rights. Although the Malian Constitution assures gender equality, the Marriage Code and the Commercial Code both limit the right of the Malian women, especially married women, to conduct business. Under the Marriage Code, a woman may in principle undertake legal acts and separate activities from her husband. However, certain articles of the code contradict these rights. Article 34 stipulates that the husband is the head of household, Article 35 mandates that married women who have a separate profession from their husbands are required to contribute to the payment of household bills, and Article 38 states that married women cannot deal in commerce without their husband's authorization. The Commercial Code adds to these restrictions on women's economic activities, requiring married women to obtain their husband's authorization before participating in commercial activities.

Overall monetary policy, particularly credit and interest rate ceilings, discourages banks from lending to small businesses. Women's access to credit is additionally limited by the stringent collateral requirements of local banks. Women generally own few assets acceptable to banks as collateral which puts them at a particular disadvantage. Women also have little access to well-connected bank customers willing to co-sign loans. Although women have the legal right to access banking services independently, many banks prefer to obtain the husband's authorization or another man's co-signature before granting them credit.

Women in business are constrained by the heavy tax burden and complicated tax system<sup>6</sup> which are common to all small businesses. Complex government regulations pervade many critical aspects of business. These procedures are difficult for anyone to comprehend and to follow, but they are especially so for women, who lack the education, experience and self-confidence necessary to operate in the business and bureaucratic world. Faced with these incomprehensible rules and regulations, most women opt to stay in the less regulated informal sector.

---

<sup>6</sup> See Grant and Hanel for a description of the different tax layers.



## CHAPTER TWO

### SUBSECTOR ANALYSES AND GROWTH PROSPECTS FOR SMALL-SCALE ENTERPRISES

#### THE SUBSECTOR APPROACH<sup>1</sup>

##### General Principles

MSEs struggle to survive in a highly competitive, fast-changing business environment. Some operate in rapidly growing markets, while others are squeezed by changes in demand, technology, labor costs, tariffs, input prices, government regulations and competition from large firms and imports. They operate in vertical supply systems, procuring inputs from some firms and marketing output through others. Consequently, it is not possible to understand the opportunities and constraints facing MSE's by looking at small firms alone. One must also examine the larger firms that work in the same environment.

The purpose of undertaking the in-depth analysis of individual subsectors is to identify specific prospects for growth within subsectors. Mead identifies three principal factors governing the prospects for growth of MSE<sup>2</sup> which can shape that decision: domestic demand; export markets; and bottlenecks.

Increased domestic demand emanates from growth in the primary sectors such as agriculture and natural resources, from outside influxes of capital such as from donors or remittances, or from reduced cost of goods due to greater efficiency or changing factors of production. Multipliers for increases in agricultural income vary, but in Sahelian West Africa they range between 1.3 and 1.5 (Haggblade and Hazell, 1989), meaning that a one dollar increase in local output will generate 30 to 50 cents in non-farm income.<sup>3</sup> Therefore, increased domestic production, or capturing the benefits from existing production through increased commercialization of products, will stimulate demand for local MSE products.

Mali has potential to expand its export markets which may promote MSE activity. Increased sales outside of the country will lead to indirect employment benefits within the country, particularly if it is small firms which are exporting.

Elimination of bottlenecks can release economic potential and improve economic efficiency with relatively little investment. Particular sources of bottlenecks which have come under increasing scrutiny lately are the policy and regulatory environment which often create biases against MSEs in favor of less economically efficient enterprises. Other bottlenecks are found in poor information about markets, sources of supply, new technologies, and social and institutional constraints.

---

<sup>1</sup> For more information, see Haggblade, A Field Manual for Subsector Practitioners, AID/GEMINI 1991.

<sup>2</sup> Mead, et al. Prospects for Enhancing the Performance of Micro and Small-Scale Nonfarm Enterprises in Niger, p.17.

<sup>3</sup> Mead et al., p.17

Subsector analysis uses a systems analysis technique that has its origins in agricultural marketing studies. It revolves around a schematic subsector map that describes the larger production and distribution system in which MSE's operate. The subsector map summarizes the economic relationships between MSEs and other actors in the system. It traces system flows, the principal channels within which raw materials are transformed and delivered to markets, and identifies the role played by MSE's in the various channels.

The analysis focuses on trends as well as on a static comparison of competitiveness in alternative channels. It provides a means for identifying where MSEs have a competitive advantage. It offers a framework for rapidly evaluating MSE dynamics, showing where MSE's have the greatest potential to grow, and where they cannot effectively compete.

Subsector analysis starts from the premise that MSE supported interventions most likely to be cost-effective are those that influence large numbers of small firms at a single stroke. The subsector map helps locate critical leverage points within the system. These may be geographical points, such as locations where a large number of firms cluster together to ensure access to key inputs, to market output, to comply with zoning regulations, etc. They may be system nodes, funnels where large volumes of product pass through the hands of a few actors, such as input suppliers or output distributors. They may also be policies which affect large numbers of firms. The most cost-effective interventions to support MSEs are those that focus on these leverage points.

## **Methodology**

Subsector analysis follows a three phase analytical procedure: a) establishing a general understanding of the structure of the system; b) refining this understanding through exploring a few key aspects of the system; and c) identifying constraints, opportunities and leverage points. Phase 1 consists of selecting subsectors for study, listing the principal participants, technologies, product flows and historical changes in those selected, drawing a rough subsector map, and specifying the main policies and regulations affecting the participants. Phase 2 consists of simplifying and expanding the subsector map through identifying its main channels, and through quantifying overlays of particular interest. The latter can include enterprise numbers, employment, volume of product, sales value, price margins, income, returns to labor, and inventory holdings. Phase 3 consists of understanding which channels are growing and which are not, and why. The driving forces behind these dynamics are explored (market demand, technological change, input supply constraints, etc), and leverage points identified.

## **Selection Criteria**

With over a dozen possible subsectors to choose from, the selection of subsectors for this strategy was a very important exercise to ensure the broadest understanding of the constraints and opportunities facing MSEs, and subsequently best guide the strategy for donor intervention. The starting measures for developing the preliminary list included the standard criteria of greatest amount of growth potential, expressed either by a large subsector (value and/or employment), where a small change in percentage terms would have a large impact, or a new subsector with tremendous potential for expansion.

The preliminary list incorporated subsectors which respond to the overall targets of USAID/Mali, particularly rural development and women. In addition the team focused on selecting subsectors which would generate the greatest potential linkages into USAID's existing and planned portfolio of activities.

AID/Washington (including ENE/SMIE, PPC/WID, and AFR/SWA) reinforced gender concerns and added an interest in subsectors with regional importance and growth potential.

With these goals in mind, the selection process then focused on 3 factors: size of employment, growth potential and sponsor targets (groups and/or industries). Six subsectors were selected: textiles (spinning and weaving), garments, agricultural machinery production, skins and hides (including butchers), vegetable production and firewood production. All six are large employers. Textile consumption, garments, and shoes (made from leather goods) are areas with high elasticities of demand (1.39)<sup>4</sup> and hence offer potential for expansion if costs can be dropped or incomes raised. Garments also include an increasingly large number of urban underemployed who are involved in the sale of second hand clothing.

Responding to other criteria, the subsectors are split between the urban and rural areas, often with producers operating in both zones. Some of the other selection factors were:

- Spinning and weaving, vegetable production, and garments are large employers of women.
- Firewood production raises many very critical issues about the conflict between natural resource management and income generation among the rural population.
- Vegetable production is an increasingly important activity for NGO intervention and targets increased incomes for women. It also offers significant potential for exports to both Europe (green beans) and neighboring Côte d'Ivoire (onions).
- Skins and hides relates well to USAID's upcoming APEX project and proposes opportunities for interventions.
- All of the subsectors raised policy issues which can be addressed in USAID's new Policy Reform and Economic Development (PRED) project or training needs which the Human Resource Development for Africa (HRDA) program can work with.

Throughout the analysis of the subsectors, careful attention was given to the roles which NGOs could play and their capacity for resolving the issues facing MSEs. The following figure summarizes the characteristics of the six subsectors which were retained and are presented in summary form in parts B - G of this Chapter.

Each of the analyses presented below reviews the major characteristics of the subsector, with a review of the end markets, the supply channels which feed those markets, and the driving forces in each subsector. After the general description, the major opportunities and constraints are identified, and the possibilities for leveraged interventions are highlighted. Further information on each subsector is available in annexes A through F. These summaries are designed to provide the specific overviews from which the more general opportunities/constraints are extrapolated in Chapter Four.

FIGURE 1

## MALI SUBSECTOR SELECTION CRITERIA

Subsector	T	Employment M	F	Domestic Market Sales (CFA Millions)	Typical Annual Household Consumption (CFA)	Typical Annual Household Consumption (Budget %)	Demand Elasticities	Domestic Market Growth Prospects	Annual Export Sales (CFA Millions)	Export Market Growth Prospects	Catalytic Effect
1. WoodFuels	17200	17200 *1	0 *1	10193	10786	1.22%	0.99%	STRONG	0	NONE	+
2. Vegetables	51000 *2			41752	44182	5.00%	0.63%	FAIR	168.3	GOOD WITH CHANGES	
3. Agricultural Machinery	23130	23000	130	7700	*4	*4	*4	STRONG		NONE	+
4. Skins and Hides	36996 *3	29978	6628	16030	16963	1.92%	1.39%	FAIR	1700	GOOD WITH CHANGES	+
5. Textiles	0			35438	37500 *5	4.24% *5	? *5	AMBIGUOUS		NONE	+
6. Garments	16764			85162	90118	10.20%	1.39%	AMBIGUOUS	0	WEAK	

- \*1. Imputed full-time manyears of woodfuel cutting and hauling for the urban commercial market; men, women, and children together participate in gathering at roughly 70,000 full-time person years
- \*2. Large percentage female, particularly in product marketing; no firm gender data, however.
- \*3. Male and female employed sum to less than total - some gender breakdowns unavailable
- \*4. Producer good or intermediate product, no household consumption
- \*5. Cloth sometimes an intermediate good, sometimes sold directly to household, figures come from ????????????

## VEGETABLE PRODUCTION AND MARKETING

Vegetable consumption is growing steadily in Mali. Vegetables now represent 5 percent of the household budget, for an estimated domestic commercial value of 44 billion CFA per year. The increased production meshes with the government's policy of food self-sufficiency. In addition to local consumption, DNSI figures for 1990 show vegetable exports valued at 168.3 million CFA.

National Accounts indicate that small producers account for 97 percent of income and 78 percent of sales in the industrial agriculture sector. It is estimated that there are 51,000 families producing vegetables commercially in Mali, and in addition, there are thousands of merchants participating in vegetable marketing.

At least 79 NGOs are now carrying out 189 gardening projects. These NGO's are often promoting gardening as a means of supplemental income with a rapid turnover during the dry season. Many of the projects target women as primary beneficiaries with the objectives of improving family nutrition and increasing women's income.

### Markets

The domestic market is divided between urban and rural areas. As 80 percent of Mali's population lives in rural areas, the rural market is clearly the most important in terms of numbers of consumers. Consumption of vegetables by the growers in rural areas can be as high as 50 percent, however, which limits the rural commercial market. The largest market in terms of sales, therefore, is in urban areas, where purchasing power is higher and the ability to produce vegetables for personal consumption is lower. These urban areas can be further divided into Bamako, and regional capitals or principal towns. Bamako alone consumes about 50 percent of all commercial vegetable production, making it the principal domestic market.

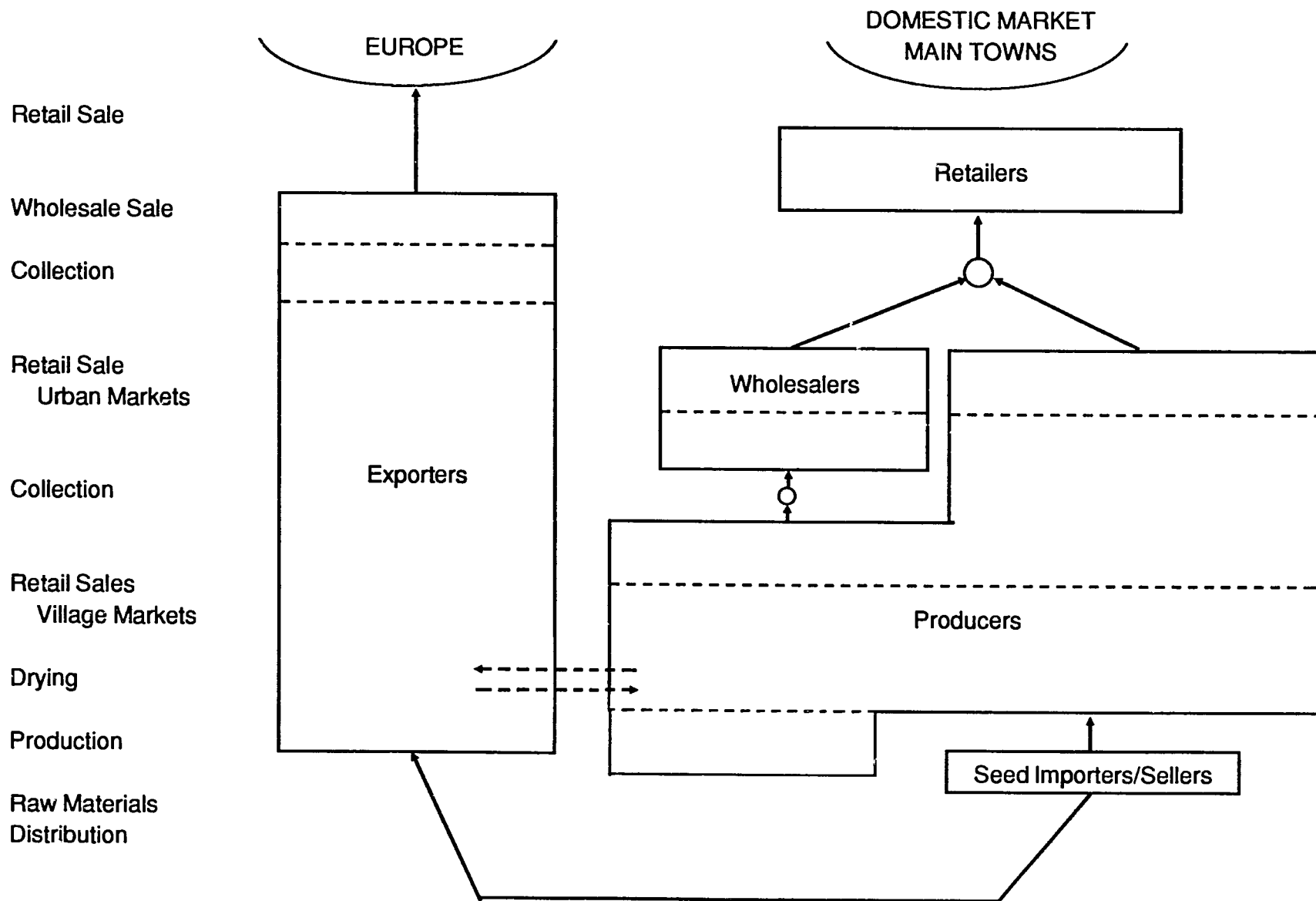
Current exports of vegetables are limited, and have decreased considerably both in quantity and value between 1985 and 1990, from 1,926 tons totalling CFA 659 million to 848 tons valued at CFA 168.4 million. Export of some vegetables, such as dried beans and hot peppers seem to have been eliminated altogether, and the decrease in both per kilo value and quantity of green beans can be attributed to a sharp decline in EEC imports of green beans after 1985. Difficulties within the exporting companies has also contributed to this decline.

### Supply Channels

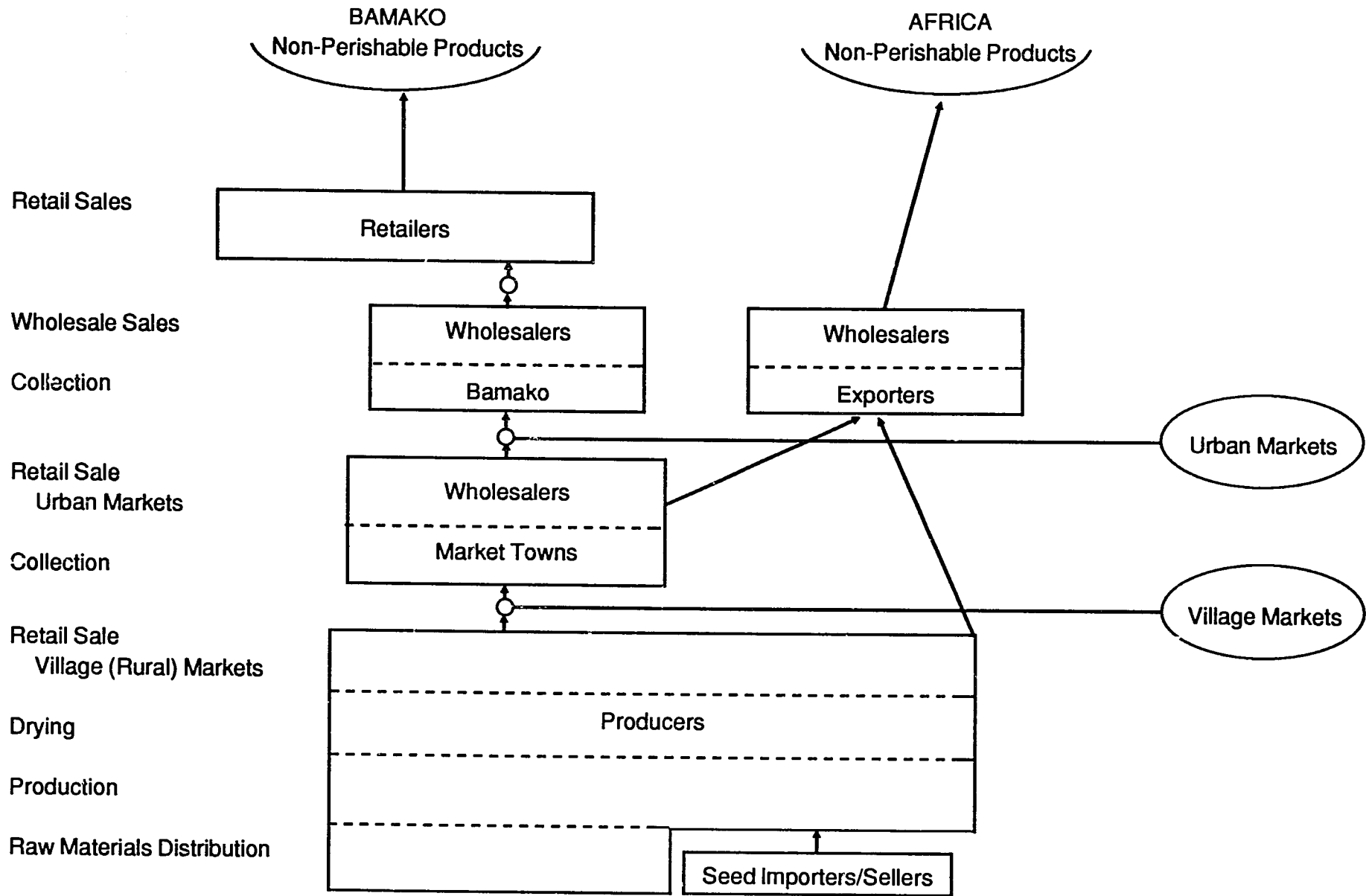
Because of the differing nature of perishable and non-perishable vegetables, it is easiest to depict the subsector with 2 separate maps (see following pages). Each map has two principal supply channels, one for the domestic market and one for export.

In perishable vegetables, the export channel represents primarily green bean exports to Europe. In 1990, Mali exported 248 tons of green beans, primarily to France, for CFA 28.6 million. Two major companies currently dominate vegetable exports. They control all aspects of production to marketing, from supplying seed to picking up beans at the farm gate. These two companies sub-contract production to about 1,200 producers in a growing season, on 40 hectares within a 45 kilometer radius of Bamako. These producers can earn about CFA 775/day during the 3 month growing season.

**FIGURE 2  
PERISHABLE VEGETABLES SUBSECTOR MAP**



**FIGURE 3  
NON-PERISHABLE VEGETABLES SUBSECTOR MAP**



The domestic market for vegetables is supplied by about 51,000 small commercial producers, who cultivate average plots of 0.15 hectare. The average producing family achieves a net profit of 80 percent, and a daily return to labor of 500 CFA. Although women supply much of the labor in vegetable production, they control 30 percent of production at best as owners of the farms. Perishable vegetables are generally sold to the principal town nearest to the farm. Some producers market their own vegetables, but thousands of merchants are the prime movers of the produce. The retail marketing of vegetables is dominated by women.

Non-perishable vegetables are supplied by the same producers supplying channel one. Although we know there are 16,000 producers in Bandiagara growing primarily onions, it is impossible to estimate the number of remaining producers who concentrate on perishable vs. non-perishable vegetables. Non-perishable vegetables, depicted in the second sub-sector map, are moved much further away from the point of production than are perishable vegetables. As a result, the general movement of these products is towards Bamako, where a limited number of wholesalers control sales. The second channel on this map is regional export of onions. Exports follow the same supply channel, with specialized regional wholesalers intervening. Most exported onions originate in Niono and Bandiagara, and transit through Sikasso to the Ivory Coast.

### **Driving Forces**

The primary driving force in the domestic market for perishable vegetables is market saturation during the limited growing season. This is due first to a water constraint. Vegetables are primarily grown as a secondary activity in the off-season, or dry months. In most areas, water is only available through part of February. As a result, the market is flooded for a three-month period. The second related constraint is the lack of an adequate transport infrastructure. Due to poor road conditions, the lack of inter-town road networks, adequate packing, and an absence of refrigerated trucks, the production of perishable vegetables is effectively limited to a 30 to 50 kilometer radius of the principal towns.

The demand for vegetables on the local market is growing steadily, however, due to educational programs which emphasize nutrition, and to the increasing urban populations with higher purchasing power and little capacity for vegetable production for their own consumption. The possibility of expanding the export of fresh vegetables to Europe exists as well. As Mali's current exports of green beans represent only 1 percent of EEC imports, it has room to expand exports considerably without affecting market prices.

An important force in the sub-sector is NGO and donor programs which are stimulating vegetable production. First, the promotion of women's gardening activities for family consumption purposes contributes to a decrease in the overall commercial market. Second, the promotion of gardening as a source of supplemental income is increasing the number of producers with excess product to sell, which contributes to further market saturation.

### **Opportunities**

Increasing the availability of water to producers over a longer period of time would enable them to lengthen the currently restricted growing period by several months. In conjunction, intermediate pumping technologies would lessen the back-breaking work of watering fields by hand.



Opportunities exist to expand and encourage vegetable drying as microenterprise activities. Drying is currently done in order to prevent losses due to over-production within the short growing season and is very profitable. Assisting the development of this traditional women's activity into women-owned businesses should be pursued.

Expansion of fresh vegetable exports to Europe is also possible, both through increasing the current green bean production and introducing new export crops. Adequate credit lines would have to be established with commercial banks to support the expansion of the existing exporters' activities and to permit the entry of new exporting enterprises. There is also room for expansion of onion exports to the Ivory Coast, as Mali's current level of exports to the coastal markets is minimal compared to that of neighboring countries.

### **Leveraged Interventions**

Until the problems of access to water, and the lack of means of long-distance transport, are solved, it is not recommended that interventions be undertaken in the sub-sector which would have the effect of increasing vegetable production within the current three month growing season. The Comité de Coordination des Actions (CCA-ONG) can act as a leverage point to disseminate the results of this study.

Government agencies such as the Office du Niger, the DHV, and the perimeter in Baguineda are points of leverage and should find ways to provide continuous supplies of water throughout the dry season, enabling farmers to extend the growing season.

Feasibility studies on vegetable drying as a new microenterprise opportunity should be undertaken by the several projects promoting microenterprise development, such as the FED project and the Canadian PME PMI project. If found to be feasible, it is recommended that some of the NGO's currently working to promote women's gardening activities provide credit and technical assistance, particularly to women, to assist business start-up.

The two principal exporting companies are points of leverage which could provide stable income for thousands of additional producing families were they to increase their activities. Assistance should be provided to these exporters, particularly in access to adequate credit lines at commercial banks, to stimulate the expansion of their export capacity.

## **AGRICULTURAL MACHINERY SUBSECTOR ANALYSIS**

To meet the national objective of food security, efforts to increase agricultural production have been at the forefront of many of the agricultural extension services. Empirical research has shown that level of output is positively related to the technology employed. Earlier efforts concentrated on expanding acreage planted using motorized equipment such as tractors. More recently the services have been introducing and promoting animal traction equipment. Currently thirty-three percent of arable land in Mali is cultivated using animal traction equipment. Thus, expansion of the farm machinery subsector is an important complement to the government's national objective of food security,

1987 census figures indicate that there are 1861 traditional blacksmiths in Mali that currently supply the farm machinery market. Numbers from neighboring Burkina Faso would suggest that the

number is closer to 18,000. These blacksmiths have the capacity to produce a wide range of tools and implements of varying quality. Opportunities to expand microenterprise development in this subsector lie in improving the quality of final output.

### Markets

For this study we defined farm machinery as the tools, implements, and motorized equipment used as inputs to agricultural production, in particular land preparation. Given that as a guideline we found that the value of the market is approximately 7.7 billion cfa and is divided into three segments: hand tools; animal traction; and motorized equipment ie. tractors.

With an estimated annual value of 4.6 billion, the hand tools market is characterized by many small transactions as every exploitation<sup>5</sup> consumes several hand tools per year. With annual renewals and repairs, future demand for this market will likely remain steady. By contrast, the animal traction market is characterized by fewer transactions but higher cash outlays. Consumers for this market are usually found in parastatally managed zones and cultivate a cash crop.<sup>6</sup> Future prospects for this market are limited as many of the farming households that can profitably employ animal traction are doing so. However, the demand for repairs which average 1/3 of replacement costs are increasing. The annual value of this market segment is estimated to be 2.1 billion cfa. Consumers for the tractor market are entrepreneurs who, through access to credit or other financial means, employ tractors for commercial gain. Their clients are poorer farmers who do not possess oxen or donkeys to make use of traction technology. The annual value of this market segment is approximately 1 billion cfa and is expected to either remain steady or decline.

### Alternate Supply Channels

We found that six, largely vertically integrated channels supply this market, depicted on the following page in Figure 4. They include:

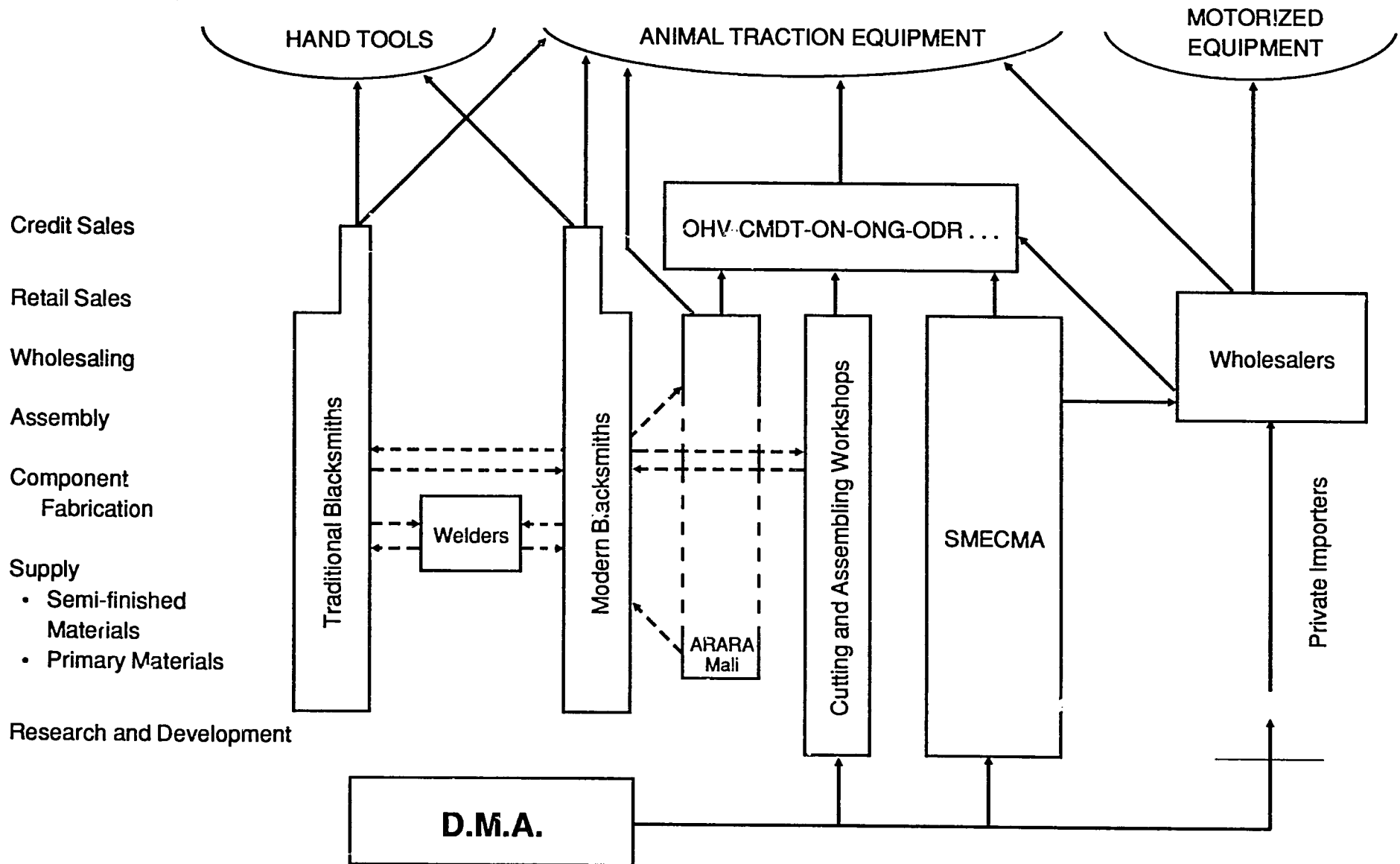
- Channel 1: Traditional blacksmith;
- Channel 2: Modern blacksmith;
- Channel 3: ARARA-Private workshop;
- Channel 4: Public workshops;
- Channel 5: SMECMA; and
- Channel 6: Private importers.

---

<sup>5</sup> Statistics from the Minister of Agriculture indicate that there are 505,000 exploitations (farming families) in Mali.

<sup>6</sup> Research in Mali indicates that 4 hectares of a cash crop are required to make the use of oxen technology profitable. See full report.

**FIGURE 4  
AGRICULTURAL MACHINERY SUBSECTOR MAP**



Handicapped by the high cost of imported iron and working tools, the traditional and some of the ill-equipped modern blacksmiths employ scrap iron and traditional tools in production. As a result, the quality of the final product is low which categorizes them as artisanal. Channels 1 and 2 distribute directly to the end user. Channel 3, the newest entrant into this market, is essentially a market coordinator who imports semi-finished components,<sup>7</sup> and via contract with OHV, furnishes standard inputs to fully equipped modern blacksmiths, who produce and assemble the final product. Through this subcontracting arrangement, modern blacksmiths have access to quality raw materials thus, allowing them to produce near industrial quality output. We estimated that less than 20 percent of the modern blacksmiths are equipped to produce industrial quality machinery. Eighty percent of the products from this channel are distributed by OHV.

Channel 4, although on a larger scale (300 million compared to 40 million cfa), is much like channel 3. The primary difference is that the public workshops (donor financed) import raw and semi-finished material and are themselves equipped to research, produce and distribute directly. Channel 5, SMECMA, with an installed capacity of 45000 units, is the single largest industrial producer. This channel is similar to channel 4 in that it performs the functions of research, production and distribution. The private importers in channel 6, assemble and distribute directly to their clients. The agricultural extension services intervene as distributors and providers of credit in channels 3 through 6.

### **Driving Forces**

Technology, training and credit are perhaps the most important driving forces in the farm machinery subsector. With all the efforts aimed at promoting animal traction equipment, the need to place repair and maintenance of animal traction technology at the village level became apparent. Thus many of the ag extension services responded by implementing "Action Forgeron" programs. These programs train and provide credit for equipment purchases to selected blacksmiths. Welding capacity is the principal differentiating factor between traditional and modern blacksmiths. Records from DMA<sup>8</sup> suggest that there are approximately 465 formally trained blacksmiths in Mali. The services are expected to continue training and equipping blacksmiths, though at a slower rate. It is interesting to note that in the south as the number of formally trained blacksmiths increases, CMDT is careful not to saturate the market and will not train two blacksmiths in the same geographical proximity.

Demand for agricultural machinery in Mali is directly related to the availability of credit, due to the lumpiness of the purchase. The main provider of credit for farm machinery are the agricultural extension services.

### **Opportunities and Constraints**

The difficulty of obtaining quality raw materials at a reasonable cost is a major constraint. Importers of iron are subject to a 35 to 55 percent import tax, thus driving the sales price up for the average blacksmith. Until prices of imported iron are reduced, the quality of final product made by the traditional and many of the modern blacksmiths will continue to suffer. Related to this is the high cost

---

<sup>7</sup>Semi-finished components are prefabricated parts that require welding and assembly.

<sup>8</sup>Agricultural Machinery Division within the Minister of Agriculture, 1989 figures.

of transport for inputs. If the price of quality raw material could be reduced, those modern equipped blacksmiths could consistently produce high quality machinery and eventually capture a greater share of the market. Also provision of credit would allow those producers presently unable to access loans from the extension services to purchase the welding equipment, which in the long run would reduce their variable costs.<sup>9</sup>

As the demand for animal traction equipment is soon to be satisfied, the market for repairs and spare parts will increase substantially relative to machinery sales. The market for spare parts offers the greatest opportunity for microenterprise development. Additionally, as the number of modern equipped blacksmiths increase, opportunities for product diversification will become more important. Currently blacksmiths at both the traditional and modern level fabricate a gamut of consumer goods, from cooking spoons, to metal beds, to well covers. Blacksmiths from the CMDT zone have the technical capacity to produce mills and small pumps, thus interesting opportunities for import substitution exist.

### **Leveraged Interventions**

**Government Policy.** The heavy tax levied on imports of raw iron undoubtedly drives the sales price up. Current government policy penalizes domestic producers and favors imports (6 percent import duty). These discrepancies in the tax laws should be changed to encourage domestic production of agriculture implements, tools and machines and thus create opportunities for expansion of microenterprises.

**Key Actors.** The agricultural extension services should continue their efforts to train and equip local blacksmiths as well as expand their role as suppliers of consumer and producer credit. Through these same services, an interactive feedback system between farmer and equipment producer could be initiated, which would allow the producer to modify and adapt equipment in response to farmer's needs. This would also lead to product diversification.

Given the limited interaction between the farmer and the equipment producer, and the all-male nature of blacksmithing, there has been little if any attention paid to developing/modifying equipment which would be more adapted to women's needs.

## **SKINS AND HIDES SUBSECTOR**

The skins and hides subsector is characterized by several factors which include its importance as a useful material for village products and enterprises, shoe making and artisanal crafts, contribution to the national economy as an export earner, even geographical distribution offering employment and revenues to both the rural and urban populations through-out the country, and as a source of local value added.

---

<sup>9</sup> Currently blacksmith that do not own welding equipment are forced to contract their welding needs.

The 1987 census identified 1546 artisanal leather workers, 5481 shoe makers, and 1611 traditional tanners who were established as micro-enterprises in the national territory.<sup>10</sup> These figures do not include other family members who traditionally work, unpaid, alongside the owner of the business and make a significant contribution to the preparation and transformation of the final product. It is interesting to note the importance of women in these activities, for example 1510 women were listed in the census as traditional tanners out of the total of 1611.

### **Markets**

The principal markets for Mali's skins and hides are: 1.) the export market for raw and semi-tanned skins and hides; 2.) the domestic market for finished leather products; and 3.) traditional use at the village or urban level as a prime material for agricultural, transportation and domestic needs.

Mali supplied the world market with 183,865 hides and 702,500 skins in 1988 valued at 1.7 billion FCFA, in the raw and wet blue stages, which represented approximately 2.27 percent of Mali's total exports. Most of this export is directed to Europe (France, Italy, and Spain) with the exception of the parastatal production by the industrial tannery TAMALI, estimated at 58,000 hides with a total value of 290 million FCFA this year, which is exclusively exported to China under an agreement with the Government of Mali. It must be noted that there is also clandestine trade with Burkina Faso, Ghana, and Nigeria in raw skins and hides of varying qualities.

The domestic market is characterized by a certain class of "modern" cordonniers and maroquiniers who principally make and sell finished products to the tourist and expatriate market, the salaried civil servant, or upper class. These persons work primarily with the skins of goats and sheep, and reptiles (crocodiles, iguanas, and snakes). Of the estimated total national expenditure of 17 billion FCFA on shoes each year, the local cordonniers capture no more than an estimated 5 percent to 10 percent of this total. The traditional leather workers are generally village based, belong to certain castes, and use rudimentary tools.

### **Supply Channels**

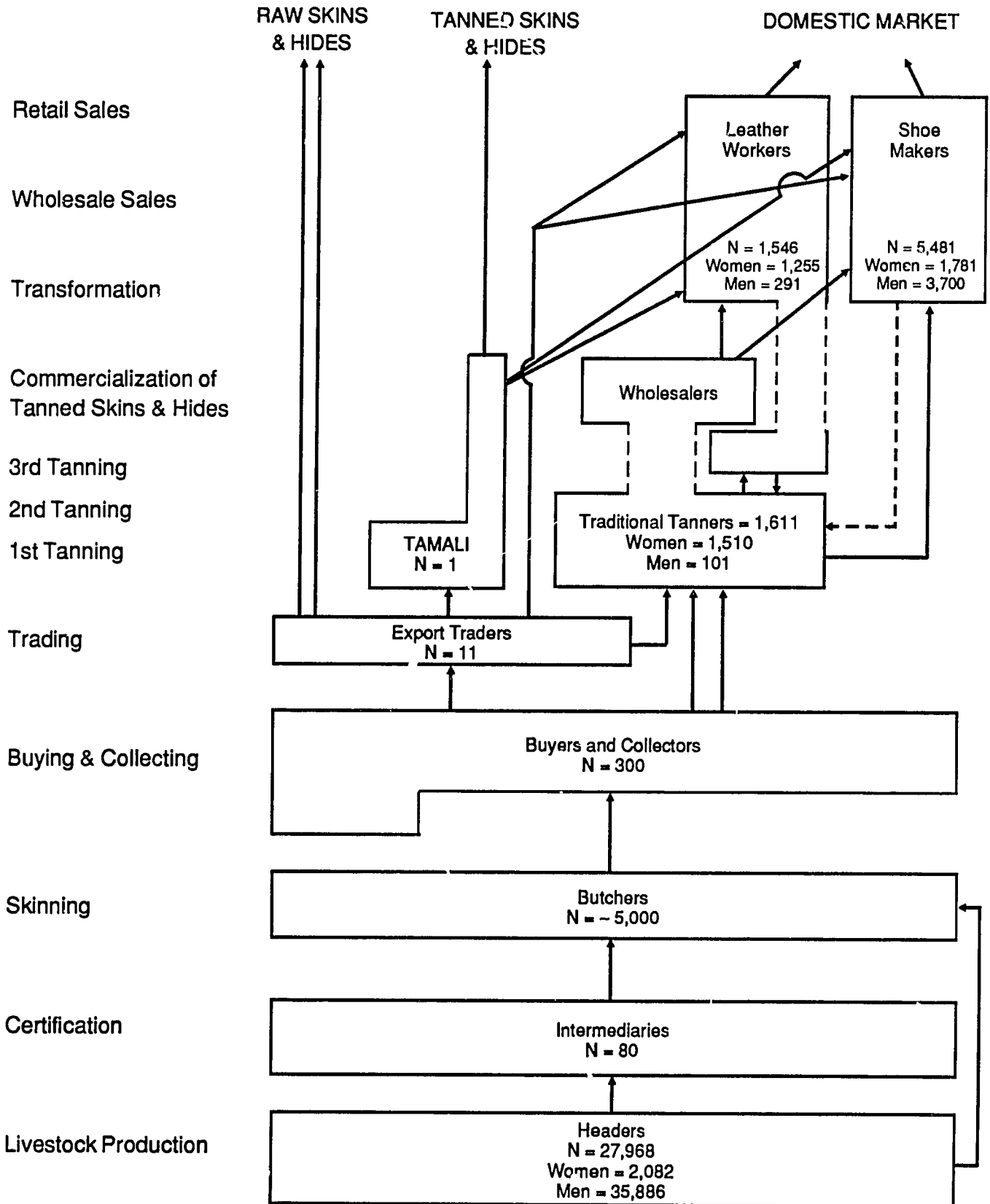
Figure 5 on the following page presents the subsector map. There are two primary channels of transformation, supply, and commerce for the export and domestic markets. Of the 3000 metric tons of skins and hides available to the national market in 1989, 66 percent of this amount, representing the best quality, was exported by 11 traders and the parastatal, TAMALI. The 11 traders export only raw skins and hides.

The poorest quality skins supplies the traditional leather workers and individual households or never enter the system due to inadequate drying techniques and preparation which renders the skin completely useless. The poor quality left-over hides supply the Nigerian and Ghanaian markets for human consumption or transformation. The domestic channel is far more complex and diversified as the raw skin is traded and transformed up through the channel passing through the trader, tanner, cordonnier and maroquinier workers, occasionally to a wholesaler, and finally to retail sales.

---

<sup>10</sup> Source: General Population Census for 1987, Vol. 0, National Direction of Statistics and Information.

**FIGURE 5  
SKINS AND HIDES SUBSECTOR MAP**



## **Driving Forces**

According to IMF statistical data in 1990, Mali has managed to maintain a relatively constant supply and price in the world market over the past five years; notwithstanding, significant growth in the national supply of skins and hides and better product quality has not been realized. The traders and their supply channels are also complaining that this year has not been good due to the drop in world prices for their products and estimate a considerable reduction in their export revenues.

The domestic market for finished leather products has been weak due to increasing competition from imported shoes, a drop in tourism due to the recent political events, the reduction in the numbers of salaried workers by the government through the IMF structural adjustment program, and wide fluctuations in the growth of the real GDP from 1985 to 1989.

## **Major Constraints and Opportunities**

The subsector is confronting serious problems such as the quality and reliability of its export of raw and semi-tanned hides and skins. Competition and market intrusion into Mali from neighboring Burkina Faso for export, through offering a better price, has resulted in good quality skins and hides being taken out of the national export market.

Skins and hides are an animal by-product with small resale value. Proper animal husbandry techniques are not adequate and there is not sufficient rigor and standards throughout the collection and classification system applied to ensure that the markets are supplied with quality products.

The buying and trading of skins and hides by the export traders through the collectors and regional buyers and local butchers is also in disarray due to losses in pre-financing loans made by the export traders which have not been paid back.

Sound marketing techniques, accounting, and management practices throughout the subsector have resulted in an inadequate understanding of the client's needs and expectations for the product and inability to determine if profits are being made and how much.

The opportunities for the subsector include improving the product through better animal husbandry and classification techniques, correcting marketing problems, seeking product diversification for the shoe makers and leather workers to capture other segments of the market through higher quality finished products, and establishing other industrial tanneries to compete with the financially ailing TAMALI.

## **Leveraged Interventions**

A. The 11 export traders play an extremely vital role in the whole subsector through their knowledge, experience, and contacts within the internal supply market, with the local artisans, and the international export market. It is in their interest to promote the supply of better quality skins and hides and they are well situated to encourage and support such efforts.

B. The one industrial tannery, TAMALI, is being divested of its parastatal status through privatization. European tanneries are experiencing rising labor costs and more stringent environment regulations which has resulted in numerous factory shut-downs. Private sector Malians such as the



export traders or large import/export merchants, perhaps in collaboration with European partners, could invest capital and provide technical assistance to establish new tanneries or rehabilitate TAMALI.

C. Improving the quality, diversity, and productive capacity of the local leather working artisans and their marketing and business skills through training at the National Artisanal Institute, INA, could have a significant impact on microenterprise development in this subsector.

D. Many of the different groups involved in this subsector such as the butchers, shoemakers, leather workers, tanners, and export traders have made some efforts to organize themselves into cooperative groups or trade associations. These persons need to improve their marketing skills, address issues and constraints related to improving the quality of Malian skins and hides and leather products, improve their management and accounting skills, seek product diversification and new markets, and take a more proactive role in seeking greater government services and bank loans to support their enterprises.

## **GARMENT SUBSECTOR ANALYSIS**

### **Rationale**

The Malian garment subsector employs 16,764 people in garment production alone, with most of the production coming from small and microenterprises. Women in the activity number 2,237. With the large number of people employed in buying and reselling of frippery (used clothing) and ready-to-wear clothing, the garment subsector becomes an even more significant source of employment for Mali.

Clothing consumption in Mali is also quite high representing 90,118 CFA per household annually or 11 percent of total household expenditures. Mali is well known in West Africa for its high style custom tailored clothing and distinctive cloth dyeing.

### **Markets**

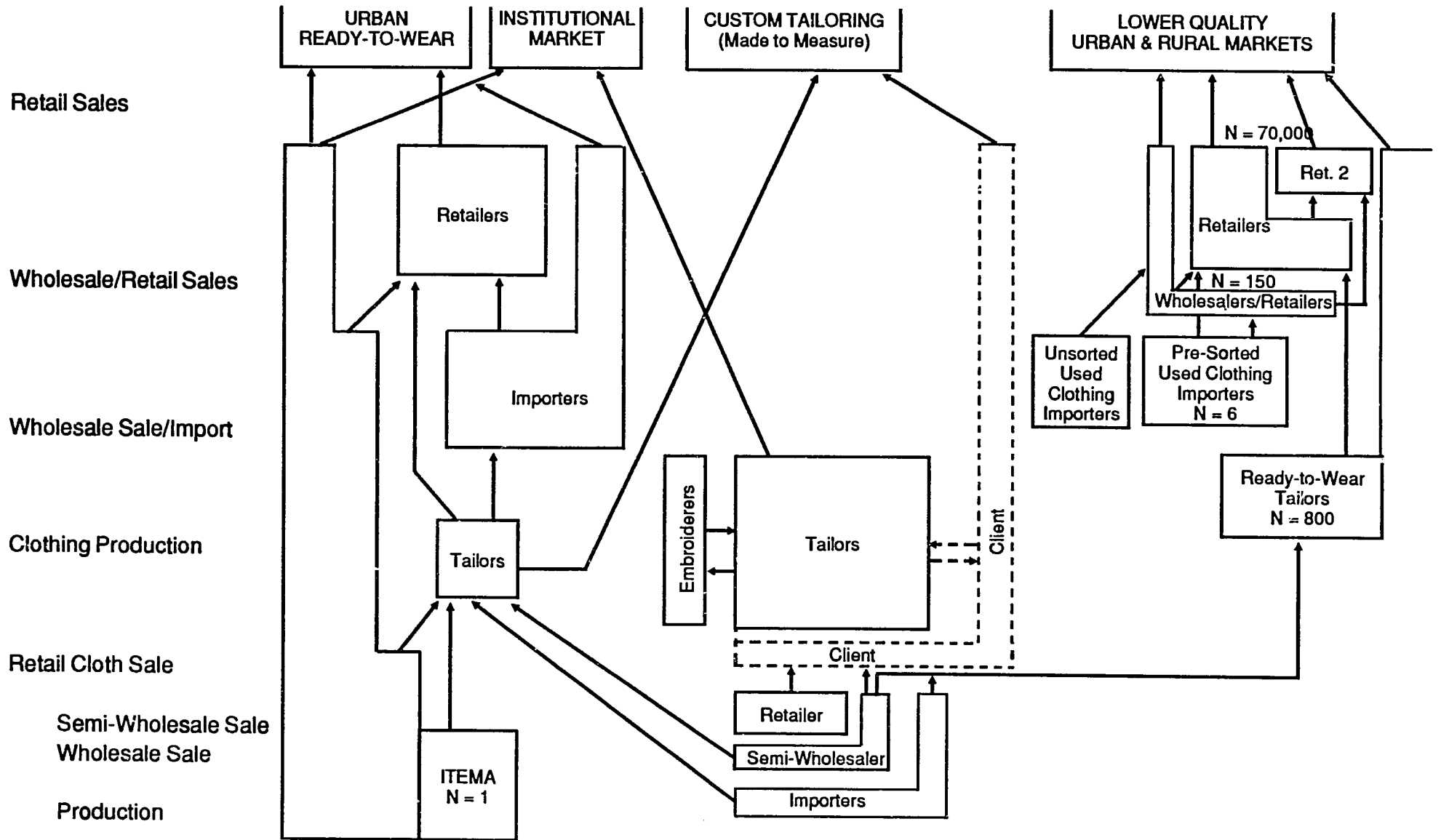
Garment production in Mali only serves the domestic market. There are three main market segments: ready-to-wear clothes targeted at the young urban populations; custom tailored garments in traditional and modern Malian styles; and cheap ready-to-wear clothes produced for rural and lower income urban markets.

Total revenues for the garment industry can be estimated at 85 billion CFA based on consumption figures. Tailor services alone account for 11 billion CFA, frippery and ready-to-wear sales represent 35 billion, and cloth sales are 37 billion. Frippery imports have increased dramatically in recent years.

### **Supply Channels**

There are five different supply channels in the subsector. The subsector map on the following page illustrates the channels, the participants, and their functions.

**FIGURE 6  
GARMENTS SUBSECTOR MAP**



The first channel consists of one large industrial firm, Comatex, which is engaged in fully integrated factory production. Comatex produces t-shirts, undergarments, baby clothing, and sports jerseys, however cloth sales represent 90 percent of their total revenues.

Imported ready-to-wear dominates channel 2, although there is some local production of quality ready-to-wear also in the channel. Most importers have their own retail boutiques while they also supply other smaller retailers. The local ready-to-wear is also sold through the importers and retailers.

The owners of local ready-to-wear workshops frequently have had training or experience in other countries like Senegal, Burkina Faso, and France and have a higher than average skill level. The size of the existing enterprises vary, and the basic capital investment needed is at least 1,000,000 CFA.

The third channel is custom tailoring services and consists of two different types of enterprises. One produces high quality, stylish clothing at elevated prices and the second type produces lower quality at more moderate prices. Usually the client brings the cloth to the tailor. The high quality workshops are frequently owned by fonctionnaire women or the wives of fonctionnaires who have capital for investment and contacts with potential clients. The tailors working in these workshops often have training and experience in other countries.

In the fourth channel, the distribution of frippery is the only real function. There are two types of importers: those who import pre-sorted and packaged bales and the factories who import larger unsorted quantities of clothing and then wash, sort, and package it into smaller bales. Distributors break down the bales and sell individual items as well as whole bales to retailers. The importers and distributors are located in Bamako. Retailers travel to Bamako on buying trips and after transporting the frippery back to the rural markets, wash and iron the clothes. In this channel, women make up a large percentage of the retailers.

Enterprises in channel 5 produce cheap ready-to-wear clothing for the rural and lower income urban marketplaces. Women are involved in the production of inexpensive baby clothing.

## Dynamics

The elasticity of demand for clothing among poor populations is high which should translate into continued growth in the rural and lower income urban marketplaces served by frippery, small workshops, and women producing cheap ready-to-wear.<sup>11</sup>

Technological change in the subsector involves increasing the skill level of tailors and adopting production processes to cut costs.

In recent years, the number of tailoring schools has increased and the enrollment is dominated by young women seeking remunerative opportunities. This should increase the number of women in the profession.

---

<sup>11</sup> Recent calculations in Lesotho put the elasticity of demand among the poorer third of the population at 1.57 (see Grant, et. al, Lesotho Subsector Study, 1991), calculations in 1988 in Mali estimated the overall elasticity of demand for clothing to be 1.39, while worldwide estimates are around 1 (see Grant and Hanel, 1988).

The earning potential varies from channel to channel depending on whether you consider a tailor employee's perspective or an owner's perspective. As an employee, the tailor would earn the most in the high quality segment of channel three. After channel three, the tailor employee would earn more as an owner in channel five than an employee in channel two. The least is earned in the low quality segment of channel three. The owner would earn the most in channel two and in the high quality segment of channel three.

### **Constraints and Opportunities**

Taxes are higher for those tailors with more sophisticated machines that can produce better quality finished products. This discourages quality garment manufacture at the local level. Taxes are heavy for tailors in proportion to their other expenses and are unevenly enforced because the tailors lack knowledge and understanding of their rights under the tax codes.

Many retailers and distributors of frippery complain about the poor quality of frippery available from the importers. If cheap ready-to-wear producers could cut their costs they could capture a larger share of this market.

Import tariffs on imported frippery are very high and ready-to-wear tariffs increased significantly in 1991. If prices rise to cover the additional costs of importing, the local ready-to-wear industry has an opportunity to become more cost competitive. This is an opportunity, in the medium term, to apply infant industry arguments to stimulate the development of cost-effective industry, which should then be unprotected in a few years time.

The capital investment required to buy the sophisticated machines needed for quality finished products are high. Capital requirements are also high to start a ready-to-wear production enterprise because more machines are needed and the tailor must be able to purchase large quantities of cloth for production. As noted in Chapter One, women have more difficulty accessing credit, therefore, this is a particular handicap for them.

### **Leveraged Interventions**

The more highly skilled tailors and training schools for tailors are found in the urban areas. Given the concentration of skills and markets in the urban areas, efforts to increase the skill level of tailors should be urban based.

There is already a strong existing distribution chain in both frippery and imported ready-to-wear that quality and cheap ready-to-wear producers can further take advantage of.

Government tax policy on microenterprises in this subsector needs to be reexamined to see how local production can be encouraged. Incentives should be considered to stimulate the growth in the ready-to-wear and quality custom tailoring segments.

## DOMESTIC ENERGY CONSUMPTION

In Mali, incidence of drought kills forest, renders agricultural production unstable, and drives villagers into cities. This creates monetized urban woodfuel demand expressed in formal markets, and generates cash crop opportunities for Malian village entrepreneurs suffering from income fluctuations. The villagers cut, bundle, and offer to the urban market more Malian forest every year. This economic behavior compounds the natural deforestation process that generates an ever more destructive circularity. Thus, Mali finds itself today in the contradictory situation that the best "informal" entrepreneurial energies in its villages might actually undermine the rural ecology upon which the entire economy depends for its survival. The woodfuels subsector is therefore a critical one to understand.

### Markets

The principal form of cooking energy in Mali has been from time immemorial woodfuel, principally in the form of firewood sold in bundles. Firewood is the cooking energy form of choice for 91.5 percent of Malian households. An additional 1.79 percent households cook with another woodfuel form, charcoal, while only 0.31 percent of the households use butane gas. Moreover, 79.65 percent of the 9 billion CFA spent on the three major cooking forms was spent on the relatively inexpensive and still cost effective firewood. Adjusted by appropriate efficiency factors and assuming adoption of the "foyer amélioré," firewood costs only 11.67 CFA per kilocalorie of cooking energy delivered to the pot, clearly more efficient at current relative prices than charcoal which is about twice as expensive and butane which is four times as expensive.

Production of both woodfuel forms together consumes an estimated 4.97 million metric tons of woodfuel timber. Cutting and hauling woodfuel to rural roadsides for urban distribution amounted to, roughly estimated, as many as 17,250 full-time person years of labor (with as much as 3 times as many person years involved in gathering wood for rural consumption). Woodfuel consumption is part of the Malian way of life.

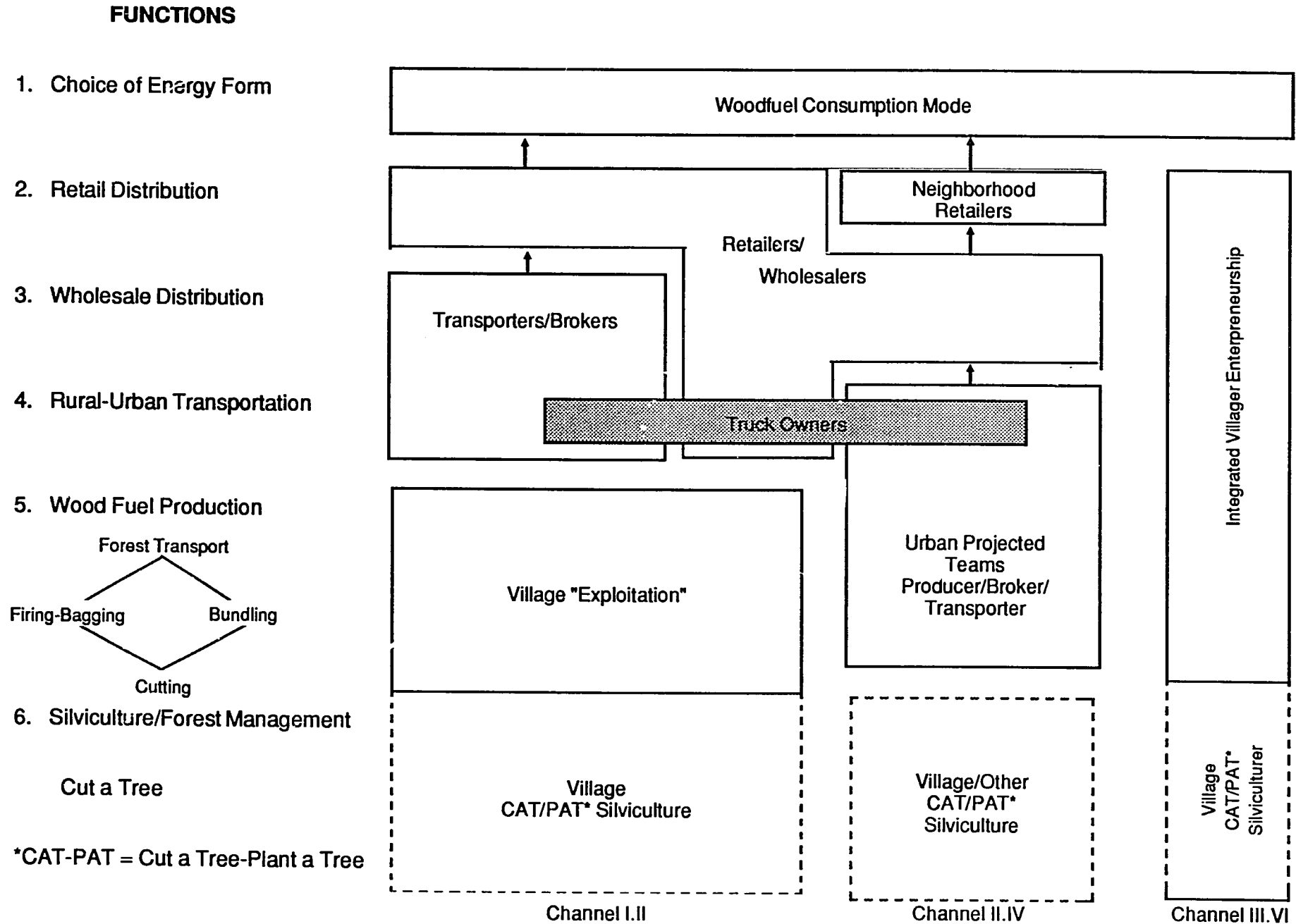
### Supply Channels

Three channels supply woodfuel to urban markets. In channel one, wood beyond the village fields is cut by village men, where it is either turned into charcoal or bundled and moved to the road. Conditions permitting, transporters do enter the forest with large trucks to load. The two woodfuels move to quartier-based urban wholesaler/retail distribution points by broker/transporters, sometimes by transporters working directly in the employ of the urban wholesalers themselves. Channel two involves urban based "team" harvesting which by-passes the village system, then is transported in the same manner to the markets. In channel three some villagers near major urban areas cut and transport product directly to urban wholesalers or to retail clients. Wholesalers in the system are invariably retailers willing to sell to whoever comes to the door. Informal sector block-level retailers exist but earn next to nothing and do not affect the dynamics of the system.

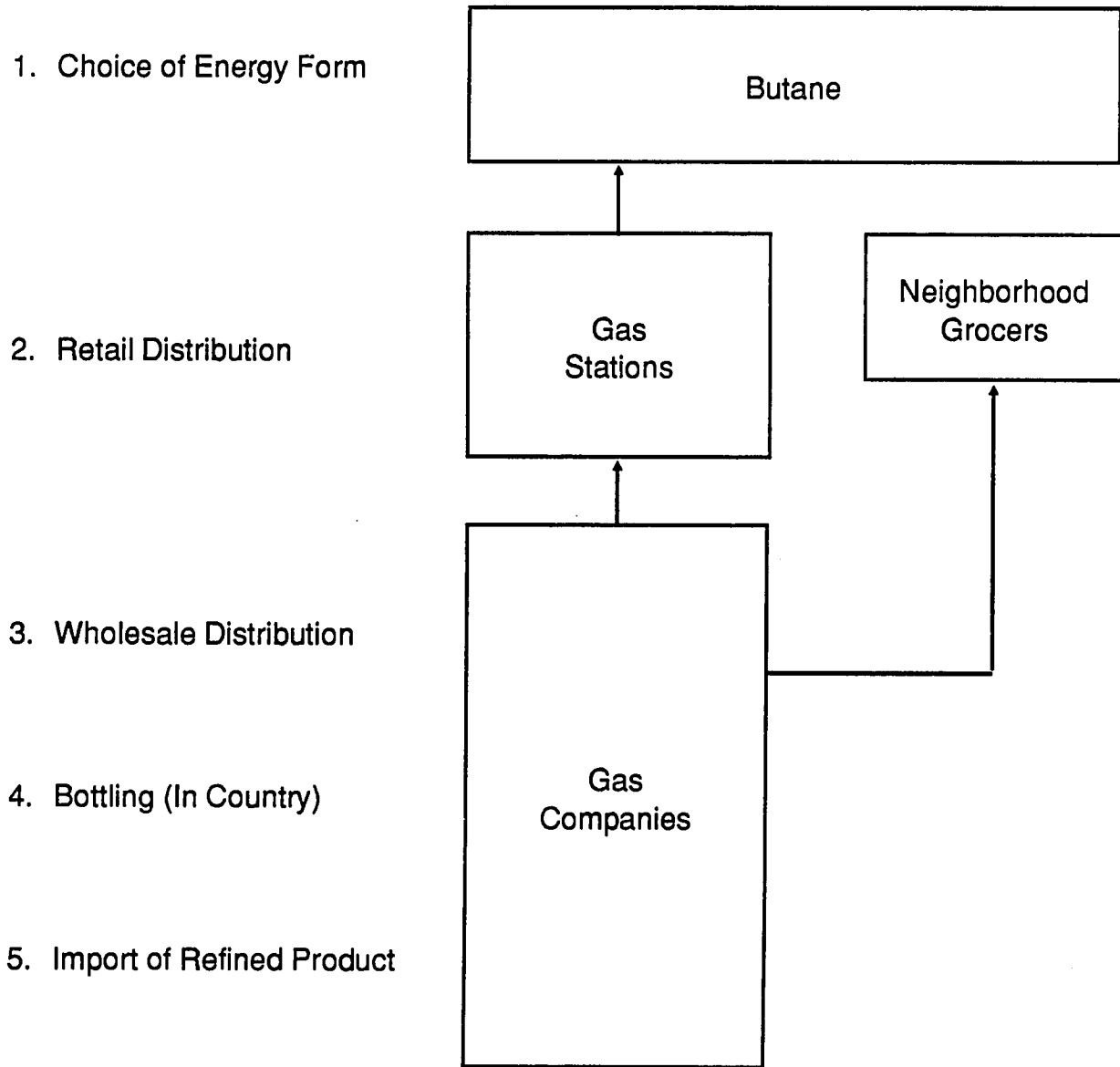
### Driving Forces

The principal driving force in consumption is the steady demand in the urban areas due to the cost effectiveness of wood to the consumer. As noted in the introduction, it is also a source of stable and

**FIGURE 7  
WOODFUELS SUBSECTOR MAP**



**FIGURE 8  
WOODFUELS SUBSECTOR MAP – II**



relatively high income (up to 25,000 CFA per month) generation for rural producers who face fluctuating agricultural incomes.

Low cost to the producer/cutter and insufficient awareness of potential profitability from active forest regeneration reinforce each other to keep forest regeneration entrepreneurship marginalized. Villagers must be convinced that they could make more than their current daily wage from cutting (800-1000 CFA) by investing in a forest regeneration strategy which is a matter of their perception of investment with a relatively lengthy gestation period and the degree to which prices could be nudged upward and the increased return distributed toward the village.

Village-level returns from woodfuel production are also prejudiced by an enterprise-sapping tax on woodfuel cutting which handicaps promotion of forest-regenerating entrepreneurship at the village level. Taxation's deleterious effect is compounded by the often arrogant and sometimes corrupt Eaux et Forêts staff.

Any supply-side strategy trying to convince Malian villagers to view trees as another permanent agricultural crop at the village level also encounters strong cultural resistance. Without an imaginative, consistent, market-based solution for alternative cooking fuel and alternative income generation from forest regeneration, the good faith efforts at raising the consciousness of Malian villagers concerning forest regeneration will be for naught.

Malian village customs and land tenure laws are also driving forces in the woodfuel system. Overcutting results from contradictory village customs which allow anyone to cut trees for woodfuel on village common lands (although the concept of private property extends to dedicated agricultural land). There are also ambiguities concerning exploitation of extra-village common territories nationally.

Another important driving force in the woodfuel system is the product's perceived importance in the household budget. Tremendous urban political resistance exists to woodfuel price increases - and therefore considerable political reluctance to raise woodfuel prices through a consumption tax. This is so even though almost everyone agrees that any solution would require a gradual rise in domestic energy prices to promote conservation, the use of alternative fuels, and rational long-term forest management at the village level.

### **Constraints and Opportunities**

Two intervention opportunities are not sufficient solutions to the ecological crisis in themselves: (i) conservation through the adoption the "foyer amélioré" and (ii) conversion to butane gas. Though both help, they are too far behind to reverse the situation. Butane is too costly, at current relative prices, to be a mass solution. Switching to butane is contrary to Malian cooking habits, culturally resisted short of a strong price advantage, and beset by long-term balance of payments externalities.

With demand-side solutions suffering from both economic, political, and cultural anemia, solutions must come from supply-side entrepreneurship which is already in evidence. Stable prices prove that woodfuel supply from village entrepreneurs has managed to meet burgeoning urban demand virtually stride by stride for the better part of a decade. Attention must be focused on developing incentives which would convince villagers to view the forest as a long-term economic resource and as a stable income opportunity which would reward entrepreneurial effort.



## Leveraged Interventions

1. Woodfuel prices at the retail level must be raised - gradually but firmly - whatever the attendant political risks. This adjustment of relative prices must be done, however, in such a way that the public resources generated are transferred to the rural sector and that these resources endow village-level entrepreneurship with substantial gains and an incentive to long-term cultivation (which may mean anything from plantations to cut-a-tree plant-a-tree [CAT-PAT] forest management). This implies:
  - 1.1 removal of the cutting tax imposed on village entrepreneurship;
  - 1.2 imposition of a tax rigorously enforced on woodfuel consumption matched by an equivalent rise in the minimum wage; and
  - 1.3 redistribution of the revenues generated through a decentralized, non-governmental network of regional development "sectoral development firms" subsidizing forest regeneration through tree-planting at the village level.
  - 1.4 Implicating women in the development of all solutions since they are the main users of woodfuel (the demand).
2. Land tenure laws must be changed to eliminate the current asymmetry in village customary law which permits anyone to cut for woodfuel anywhere on village common lands. Existing notions of village family and individual property rights for conventional agriculture should be extended to common land treatment of woodfuels.
3. The role of the Eaux et Forêts staff needs to be changed. They should concentrate on the national forests and get off the farms. They should not become the principal delivery mechanism of forestry conversion resources to Malian villages. Malian villagers will not respond to Eaux Et Forêts interventions.
4. Every effort should be made to suppress urban-based teams from entering the forests in the village interstices to produce woodfuel — unless they are licensed and verifiable forest regeneration can be assured.
5. Further research should be done concerning the difficult issue of possible rents accruing to transportation owners. Redistribution of transportation returns toward the village by promoting village access to cost-based transportation would represent a significant leveraged opportunity. With these returns, an intervening agency could devise a stronger market-based forest regeneration strategy by offering men and women villagers the choice of planting for increased access to transportation services and increased entrepreneurial gain.

## TEXTILES

A recent study described total consumption of the population of Mali. The study indicates that 10 percent of household expenses go to clothing, 5 percent directly to textiles. Given that it is such a poor country anyone would ask, "what is it that makes them want to spend so much on textiles?"

The reality is that there is a whole set of beliefs behind textiles in Mali. The number of textile firms supports this statement. And 890,600 people are involved in textile production; 90% of all women earn income in this sector.

### **The Market**

With 70 percent of all merchants involved, the total sales volume is 37.8 billion CFAF. From this study, we can identify:

**The traditional market.** This encompasses a whole are of artisan production:

- The artisan weavings are uniquely hand-made, from thread traditionally produced by women. They are made of cotton and wool.
- The textiles made of industrial fibers (from COMATEX) by artisanal and semi-modern weaving methods. Production comes to 8.7 billion CFAF.
- Hand-made artisan ecru prints, *bazin* white, or in colors uniquely printed in other styles and dyes in indigo/*galama* or chemical colors.

This market has two markets within it:

i) a local market: these are the wool and cotton blankets, "koba" cloth, weavings of industrial fiber (7,747,000 meters produce per year); and

ii) a tourist market, which receives approximately 7,000 tourists per year, whose purchases are estimated at 153 million CFAF.

### **The Market for Factory Prints**

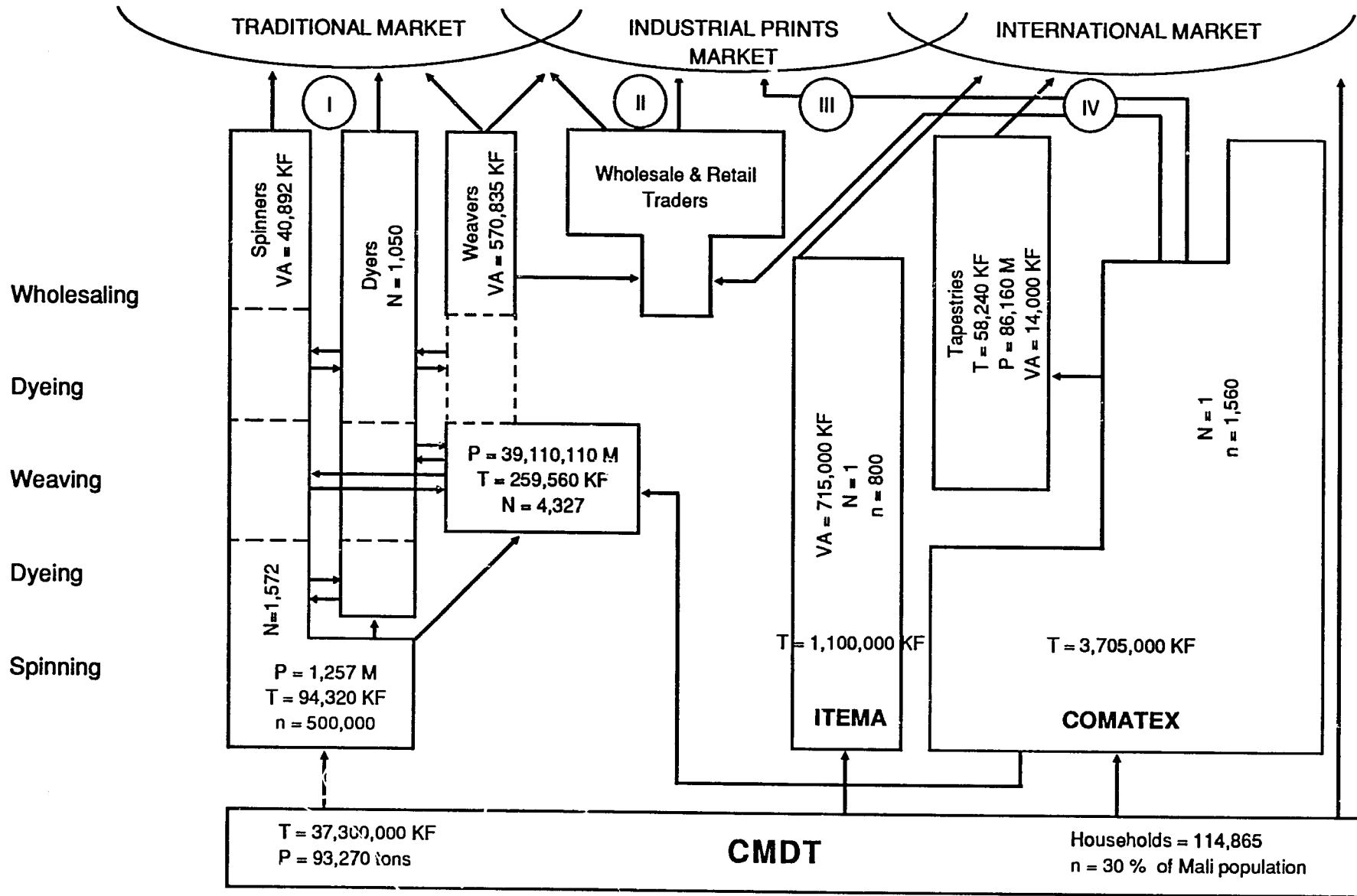
The market for fancy cloth, poplins, *bazins*, and embroideries includes:

- Those products available on the domestic market: 16 million meters; and
- Those products abroad and imported: 36 million meters.

### **The International Market**

This market is only 10 percent of Mali's own production of textiles, 2,829,000 meters for all types of factory and artisanal production.

**FIGURE 9  
SPINNING AND WEAVING SUBSECTOR MAP**



T = turnover; n = number of employees; N = number of enterprises; P = annual production (meters);  
VA = value added; KF = thousand FCFA

## **The Different Chains of Production**

There are four channels for supplying these markets schematically on the next page:

- Traditional production;
- Semi-industrial production;
- Industrial production; and
- Merchants.

The most important features is that chain 1 and chain 2 produce the same output in two different structures. The only difference is that chain 2 cannot make use of the artisan thread, which is part of the production of chain 1. Chain 3 is a separate chain, supplying a market with particular demands. Chain 4, the commercial chain, is active in the market all three lines of production, and play an important role in determining export and import prices. Its sectors remains outside of the circuit, and it has a major influence on the three sectors of production (price drop, price increase).

## **The Driving Forces**

At present the driving forces are on the consumption side. Demand for textiles is high.

National policies affect the sector, neutralizing its capabilities; official supervision has not existed, and no clear policy has been defined to support the sector.

A UNDP/ESITEX study shows that of 63,500,000 meters consumed, only 27,829,000 are from Mali. The diversity of these products shows that there is no major market handicap for any of the different production units. Rather, there is dynamic interaction.

## **Opportunities and Constraints**

The constraints are 80 percent technological, for both artisan and industrial production. The state of technology at COMATEX and ITEMA is an obstacle to boosting production. Industrial dyes are limited in the range of colors of fiber and thread. This explains the large volume of thread imported by merchants.

The production prices are already too high for the consumer. The plants buy cotton from the CMDT at a price that is sometimes higher than the export price.

The artisan chain is very slow, and production is fixed. Nonetheless, the artisan dyes produce colors that industrial production lacks.

There are opportunities for textile production in the following areas:

- The industrial chain, which employs more than 7,000 people (this figure was double 20 years ago; now only a few people work in this line of production as professionals);

- Cotton production is 93,000 tons of fiber; only 5 percent is consumed locally;
- The interaction among the units is considerable, as it makes it possible to create a chain of horizontal collaboration among the different units. The consolidation of these links makes it possible to invest early, and to limit the involvement of other actors in the sector.

### **Leverage Points for The Sector**

The rise of microenterprises has points of leverage at:

- COMATEX, increasing its sales and that of the dye producers, may use the artisan dyes to obtain colors sought by customers. At the same time, this may increase the number of firms involved in dye production.
- ESITEX, textile training school may provide coordination for the sector, which at present does not exist. It could sponsor research programs to use the artisan thread in textile production, and at the same time consider a technological change appropriate for traditional spinning (take account of the women's capability to adopt this new technology).

Once coordination is established among the different actors in the sector, it may serve as a basis for training to improve their technical capability and to facilitate the transfer of new technologies needed in textile production.

Financing, until now unavailable to support textiles, may come through cooperatives already seeking to create the market, especially for export. A bank could become a partner of ESITEX with a view to covering the already-existing dye-producing cooperatives, as well as creating spinners' cooperatives.

## **CHAPTER THREE**

### **INSTITUTIONAL SUPPORT TO MICRO AND SMALL ENTERPRISES**

According to the Investment Development Consultancy report for the IBRD in April 1991, nine different government agencies, not including the technical ministries (Agriculture, Public Works, Health, etc.) were identified with the mandate to support or regulate MSE activities. This section will provide a brief review of the numerous institutions and agencies currently working in the realm of MSE development in Mali. Its purpose is to identify those areas in which significant resources are already being invested and those which need additional investment. This analysis will provide USAID/Mali with particular insights into targets of opportunity which can then be matched with USAID/Mali's comparative advantages to help identify where USAID can apply its efforts with the greatest impact.

Three recent reports<sup>1</sup> provide detailed lists of the institutions and projects which currently support MSE development in Mali. Rather than repeat those lists, the table on the following page categorizes them by broad areas in the realms of training, technology development and transfer, direct financial lending, technical assistance to enterprises, and interest groups and coordinating organizations. This last one is often omitted in institutional support, but with the increasing emphasis on the importance of policy dialogue and the apparent lack of coordination in many countries among both donors and government agencies with respect to the relatively new realm of MSE development, coordinating organizations can increasingly support MSE development. These categories are further split by the legal nature of the agency and are divided between government (including donor financed activities), private or donor institutions which have no formal tie to government programs, and NGOs.

#### **TRAINING**

Formal training centers and projects for improving business management skills and stimulating economic growth in Mali have traditionally been managed and supported by the GRM. The technical ministries and national training services, such as the Office National de la Main d'Oeuvre et de l'Emploi (ONMOE) and the Chambre de Commerce et d'Industrie du Mali (CCIM) have often benefitted from international donor assistance to develop training programs.

Programs to improve the manual skills of artisans (mechanics, tailors, carpenters, metal workers, blacksmiths, etc.) have varied in success. The USAID funded OHV project has trained blacksmiths through a comprehensive program which also includes access to credit. Through World Bank funding, as a pilot project, the Comité de Promotion de l'Artisanat (CPA) has provided artisanal training in the Segou and Sikasso regions, but reportedly with limited success. Peace Corps, in collaboration with the CCIM has initiated a series of business courses over the past six years which has trained an estimated 600 persons from all backgrounds.

---

<sup>1</sup> Zahir Fares, Propositions d'axes de reflexion pour un programme d'appui élargi à l'initiative privé au Mali (PNUD, May 1991); David Harmon "Recommandations pour une Cellule d'Appui au Secteur Privé", (PNUD, May 1991); and IDC's Review of the Institutional Support for Private ....

Informal training in this sector is also widespread as many of the larger donor projects (FED, UNDP/ILO, Canadian) and the NGO projects for small and microenterprise development have trained their own staff to work with large numbers of entrepreneurs in developing feasibility studies, market and cash flow analysis, and the development of loan dossiers.

In the urban areas, demand for training services is high and there is an increasing participation by the private sector in Mali. One runs across small private schools in tailoring, dyeing, beauty parlors, management and secretarial skills, and metal working in all the large towns.

There have been common and identifiable problems in the provision of technical training (which includes both management and artisanal skills) to small and microenterprises in Mali. Most of the business training through the formal and informal institutions has used a very traditional approach which includes the use of texts and technical materials developed in European schools. The teachers or trainers have no or limited practical experience or first hand knowledge in establishing and managing small businesses. The methodologies for teaching are not participatory in which the participant has the opportunity to learn through an experiential process. Rather, most of the classroom activities are lecture dominated in which the teacher gives information with little interaction taking place with the students.

There is also a lack of Malian case studies and practical examples which describes the constraints and opportunities confronting the small entrepreneur. Vocational institutes have been slow to integrate basic business skills into the curriculum. The artisans also require business skills such as accounting, cash flow analysis, marketing, and pricing to successfully compete in the business environment upon graduation.

It must be noted that these small entrepreneurs are not a homogeneous group but rather are characterized by different educational levels (indeed, many are illiterate), occupations, and learning needs, and have limited time to attend classes - all of which compounds the difficult task of offering relevant and comprehensible management training to these persons.

## **FINANCIAL**

The formal financial sector in Mali is extremely wary of lending to MSEs, but when compared to its counterparts in neighboring Niger and Burkina Faso, it can be considered quite radical. Formal sector banks like the Banque Nationale de Developpement Agricole, the BIAO, and the Bank of Africa Mali are actively involved in providing credit through village associations for enterprise development activities or directly to enterprises with only minimal guarantees (under 50 percent). Even with this open outlook to participate directly with their own funds when the donors are involved to absorb much of the risk, the banks complain that the cost of lending to small businesses (including risk for bad debt, loan evaluation and monitoring charges, and other administrative expenses) exceeds the amount they are allowed to charge, which is set at 16 percent by the Central Bank.

Credit needs must be split between lending for consumption and enterprise lending for investment or working capital. Consumer finance, often ignored in credit programs, is critical for increasing the size of the market, particularly for lumpy purchases like home construction and agricultural equipment which are often produced by small entrepreneurs.

## Formal Sector Loans

Several formal sector institutions are becoming increasingly active in lending to the traditionally excluded clients. Agricultural loans in Mali, particularly in the cotton producing areas, have very high repayment rates which now exceed those of most urban portfolios. This is causing the BIAO, the BNDA, and the BOAM to become increasingly aggressive in the pursuit of profitable markets.

In one forwarding looking case, the BIAO has dedicated one of its staff to work on a small enterprise lending project in which the BIAO is putting up half of the loan funds from its own capital. In another, the BOAM has just agreed to loan funds to a local NGO, which will then on lend them to small women's groups for productive activities. Both of these are important examples of ways to stimulate bank interest and build their confidence and understanding of new markets.

One element which may be pushing the banks is the great surplus of funds available for enterprise lending. In addition to the banks own funds, there will be over \$100 million in funds available for lending to small enterprises under different donor envelopes. The Caisse Centrale has just financed a strategic marketing study for the BNDA to determine how it can best use its available lines of credit.

## Projectized Lending

Much lending is going on directly through projects, some of which are attached to the government and others are almost autonomous. The ILO "Secteur Non Structuré" project is lending \$850,000 of its own funds directly to the artisans they work with at interest rates of 15 percent. The FED project has 14.8 million ECUs which it is managing autonomously, with no direct intervention from the government. While FED official interest rates are 8 and 10 percent, depending on whether it is for agricultural lending or not, the effective interest rates are much higher when the fees for management and follow-up are added on.<sup>2</sup> The Canadian PAPME project is lending at official rates, around 14 percent (with an effective real rate of just over 7 percent).

Caisses d'Epargne-Crédit are just beginning in two zones, the Mali Sud (CMDT) and the Dogon country. These activities have not had time to develop yet, which is critical for a savings based program. However, it appears that the one in the CMDT zone is encountering some troubles, possibly because there is so much credit available in this relatively credit rich environment.

There are several very small NGO lending projects underway, but they are primarily targeting subsistence level activities in the rural areas or are in support of technology transfer programs. Only one Malian NGO has begun an urban MSE credit program, and that has been done only in the past year.

---

<sup>2</sup> With a staff of over 100, the FED's cost of lending, however, still eclipses their receipts, and repayment rates have fallen to below 60 percent.



## **TECHNOLOGY DEVELOPMENT AND TRANSFER**

There are numerous institutions promoting technology development and transfer in Mali. These include different agencies within the GRM; international bi-lateral donors; international and Malian NGOs; Volunteer organizations such as Peace Corps, Volontaires de Progrès, and the Dutch Volunteers; and to some extent local private research and development firms.

The list of the different types of technology being introduced or transferred into Mali is almost endless and includes: agricultural machinery, tools, and processing equipment; renewable energy and conservation devices; improved building materials, cereals drying and storage, improved tree and plant varieties, water storage and capturing systems, and adapted and simplified industrial machinery for processing, transformation, and production.

In the OHV zone, serious efforts have been supported by USAID to train and improve the skills of local blacksmiths who supply agricultural machinery and tools to farmers. The results have been positive and other donor funded projects have similar training models in their agricultural zones (i.e. CMDT). Appropriate Technology International (ATI) has been assisting a local NGO, AETA, in improving irrigation pumping technologies and marketing the pumps to village associations and private farmers. The Canadian funded PAPME project has specialized in doing research, design, and developing prototype machines for industrial applications. A private research and development firm IT Power has concentrated its efforts in improving low cost energy technologies.

One of the major issues in the diffusion of technology is that the research, development, and application of the diverse technologies is often not well coordinated. Another limiting factor is that of donor bias or technical sophistication which produces inappropriate attempts of adaptation. The decision makers can be highly trained but lack the ability or time to research or understand the client's needs. Often there are also extremely important social elements involved in accepting new technologies which become the determining factor for their acceptance and sustainability. Finally most organizations doing technology development are working outside of commercial channels to develop their technologies, so it then becomes difficult to insert them back into the mainstream channels of production and marketing.

Each donor group promotes its own technologies and there is often duplication of efforts and donor competition in promoting their particular technology. A good example of this is the case of hand pump systems which are installed in villages. Unfortunately, the parts are not interchangeable between the different models, and there is no immediate stock of replacement parts available for purchase by the villagers. Efforts are too often concentrated in installing the equipment with little attention given to properly training technicians or village operators in preventative maintenance.

Integrating new technology development into commercial channels will lead to more standardization and help to resolve the problems of non-compatibility across products.

## **THE PVO AND NGO COMMUNITY IN MALI**

In addition to the different technical support the NGOs bring, they deserve special consideration simply because of their numbers and potential for involvement in all facets of MSE development. There has been significant expansion in the numbers of international NGOs operating in Mali since the drought of 1984. Presently there are over 300 NGOs providing a variety of services and development assistance

to primarily rural populations. Several trends appear to be emerging which are significant. NGOs are receiving more financial support from the large donors as a concerted effort by the donor community to more effectively and efficiently channel resources to project beneficiaries.

The NGOs are becoming better organized and are developing greater in-house technical expertise in response, due partly to their own growth as institutions, but also as a result of increased donor financing. Some of their development activities are being refocused to meet the needs of urban communities as outward migration from the villages to the cities remains unabated and places escalating and un-met demands on available services. The international NGO community is also increasing its collaborative efforts and support to Malian NGOs.

Unquestionably one of the main growth areas in the Malian private sector is that of local NGOs. According to the Comité de Coordination des Actions des organisations Non-Gouvernementales (CCA/ONG) the number of registered local NGOs with the CCA/ONG has increased from six in 1982 to forty-two in 1988. According to one estimate, the total number of Malian NGOs reaches up to 200 to 225.

This phenomenon is particularly noteworthy when compared with similar NGO activities in other countries. In Niger, for example, there is virtually no reported local NGO activity due to the government's reluctance to support creating local institutional capacities to promote development activities, presumably because such activities would create dialogue and actions contrary to existing political and economic dominance.

These organizations provide important linkages, information, and support to: the international bilateral donor organizations; the international PVO community; and project beneficiaries (farmers, entrepreneurs, women's groups, unemployed civil servants and school graduates, artisans, small and microenterprises, cooperatives, trade associations, apprentices, etc.).

Several general characteristics of the local NGOs are worth noting:

- Many of the staff of these organizations are former civil servants who have left the government services because of the recent national structural and sectoral adjustment and austerity programs. Other staff members are the educated young who are the recipients of assistance from the bi-lateral donor projects to increase employment opportunities for this relatively organized and vocal group.
- Directors and project officers of local NGOs are entrepreneurs who have, in true entrepreneurial spirit, recognized that this is a growth sector and responded by registering themselves or their enterprises as non-governmental organizations.
- Many NGO staff are technicians: foresters, agronomists, nurses, and horticulturalists who have travelled outside of their country for either long or short term training and offer the basic skills in the fields of their specialty.
- Few NGO staff have received training in business management and marketing skills equivalent to their counterpart technicians in the other technical specialties (such as NRMS or Child Survival); presumably this is due to microenterprise assistance being a relatively new area of development activity.

- NGOs can provide a cost effective organizational mechanism to initiate and manage donor financed projects; are well placed to communicate and work with local populations; can often serve as an effective lobbying effort against bureaucratic intransigence; and offer employment, in both the urban (for example to the educated young) and rural areas, which eases national economic and political pressures.
- Training, research, and new technological development and transfer can be disseminated more cheaply through these organizations because of their lower administrative and overhead costs.

### **TECHNICAL ASSISTANCE TO ENTERPRISES**

Nearly every project which works either in training, credit, or technology transfer also supplies assistance to enterprises to help improve their internal management and technological applications. The FED project, based in Segou, charges for these services, but most others do not. In addition to the projects and government agencies, there are a growing number of private consulting firms which also profess to provide technical assistance to enterprises, though the cost and returns for this activity are uncertain. It is quite certain that there are no private firms which could be afforded by MSEs. There is a lot of room for private firms to develop special MSE focused products with a low transaction cost but which respond to MSE specific needs. A pilot project in Senegal is addressing this issue and will provide very useful examples and methodologies which can be replicated in Mali.

### **INTEREST GROUPS AND COORDINATION: UNIONS, DONORS, AND GOVERNMENT AGENCIES**

Policy reform is becoming an increasingly recognized point of leverage for growth among MSEs. The real decision makers in Mali are few and can only be accessed by the donors, government ministries (which must lobby for their respective policy interventions), and some of the semi-public groups like the Chamber of Commerce and the party (as it stands today). The people who bear the brunt of the impact of the policy decisions have traditionally had little or no say in policy dialogue.<sup>3</sup> Stimulating new lines of contact between the groups which must endure the policy environment is necessary and would, at the least develop links between those who can carry on the dialogue, such as the donors, and those who witness the ground level effects, such as the NGOs and private trade associations.

When compared to neighboring countries, Mali has one major MSE asset which is seriously lacking in the others: the Donor Working Group on Employment. Funded by the PNUD, staffed with an ILO expert who serves as permanent secretary, and strongly supported by USAID and the other donors, this group has met on a monthly basis for four years and has provided a forum for the donors to share ideas and communicate their intentions to one another. While the donor representatives often agree to disagree on many issues, at least they are made aware of the issues. This forum also provides an opportunity to interface with outside groups such as various ministries in the GRM or with trade associations which are critical for MSE development such as the Bankers' Association. An extremely

---

<sup>3</sup> For further discussion of this point, see William Grant, Status and Roles of Private Sector Advocacy Groups in the Sahel, April 1991 (draft).

profitable offshoot of the Working Group is the Chef de Projet's meeting, which also happens one time per month and groups the heads of the technical projects to discuss technical details and share experiences and solutions.

The GRM side is not as well coordinated, particularly with respect to MSE activities. The traditional coordinating groups such as the Chamber of Commerce (CCIM) and the Office Nationale de la Main D'Oeuvre et de l'Emploi (ONMOE) have served more as collection points for projects than as shapers and directors of policy. The GTZ sponsored a three year project to develop a strategy for the Ministry of Industry, but it ended without developing one. It will be interesting to see what role the new Ministry of Tourism and Artisanry plays in trying to stimulate and dynamize the MSE sector. Since it is only a few months old at this writing, it will probably take at least a year to complete its initial diagnosis of the environment and determine how it intends to work with the local MSEs.

Among the NGOs, the CCA/ONG serves very efficiently as the meeting place and coordinating agency for many of the local NGOs. It is relatively well equipped and provides valuable information and support services to its members. While it coordinates well within the NGO community, it is often forced to play a low key role when dealing with the government and rarely offers policy recommendations.

Professional associations are just beginning to pick up some strength following the old government when they were tightly controlled. Groups such as the Association Professionnelle des Banques (APB) and the Organisation Patronale des Industries are becoming better organized and provide reliable coordinating mechanisms for their members. It is much easier to determine bank policies or share information when there is a reliable contact point to relate to. Unfortunately the level of organization and institutional capacity in these groups is still very limited, to the frustration of many young dynamic businessmen. For the first time in years, some are trying to create new organizational structures which will allow them to bypass some of the more reactionary institutions which do not respond to their needs.

## CONCLUSION

Though the government agencies in support of MSE are relatively disorganized and searching for their appropriate role, the donors, NGOs, and even many private companies (such as the banks) are actively multiplying their activities in support of MSEs. In fact the multitude of supporting activities may actually become an impediment to efficient support to MSEs in the event that donor or NGO activities overlap and start competing with one another.

The donors have taken a first step to improving coordination by consulting regularly on employment issues and providing regular information on their upcoming program. The recent addition of a monthly meeting of their project directors also serves as an important point of contact and coordination to eliminate conflicting project goals and direct competition in zones of intervention. With nearly \$100 million available for enterprise development, the donors have put tremendous resources at the disposal of the Malian people, it remains to be seen if it can be effectively used.

It is very important to highlight the recent explosion of Malian NGOs. Though they are not yet very active in MSE development projects, it will only be a short while before they plunge in after the resources which are available. It is imperative that these NGOs start from a rational economic understanding of each situation before they begin their programs. This will prevent the introduction of new market distortions which would only slow the economic growth of the country.

## **CHAPTER FOUR**

### **MAJOR CONSTRAINTS AND LEVERAGED OPPORTUNITIES FOR MSE**

Drawing from the analyses in Chapters Two and Three it is clear that there are numerous constraints to MSE development in Mali. The constraints range through all of the traditional problems: access to credit; weak management and technical skills; missing or inappropriate technology; unadapted economic and regulatory policies which create a negative enabling environment; insufficient market information signals within the production channels; and weak coordination within the channels of production.

It is also clear that there are many opportunities for donor intervention to develop and promote solutions. Applying the concept of leverage should be foremost in the minds of programmers. Some solutions require intensive one-on-one training and management which must be developed from scratch, but for other solutions there already exist points of leverage. These may be either institutions, policies, individuals, or technologies which can be carefully targeted so that they use the donor's resources efficiently to address the problems with the greatest impact. Only in the case where no effective points of leverage exist and yet a major constraint has been identified, should the donors seek to create new structures. There are few simple remedies, but there are many opportunities and alternatives which will have greater impact for the same amount of effort.

Numerous socio-economic, legal, and environmental factors can create a positive or negative climate for enterprise development. A few of those which have a great constraining impact on the structure of enterprises and the possibilities for implementing solutions in Mali are:

- There is a very high level of illiteracy among Malian micro-entrepreneurs and numerous local languages which compound training problems;
- There are many social and cultural constraints which diminish entrepreneurial initiatives, such as hiring family members instead of more qualified personnel and the limited role of women in the workplace;
- Legal constraints that women specifically face (see discussion on page 7);
- The political environment is changing with a caretaker government presently in power and the future is uncertain;
- The national economy has a GDP growth rate which has varied dramatically over the past ten years and which faces diminishing purchasing power, increased unemployment, and structural adjustment; and
- An agriculturally based economy in a drought prone country, such that a poor crop year can have a major impact on the disposable income and purchasing power of the MSE's regular clients.

In an effort to take all of the above elements into consideration, the following section will recap the major constraints to MSE growth within a context of overall economic growth and will address some of the opportunities for leveraged intervention which can alleviate those constraints.

### **POOR COORDINATION AMONG THE EXPORT CHANNELS**

The analyses for the vegetable subsector and the skins and hides subsector demonstrate the potential for employment and value added, as well as the confusion which exists within many of Mali's export channels. A lack of coordination often leads to irregular quality, inconsistent quantities, and unreliable deliveries.

- Skins and Hides are great potential exports and yet Mali is losing up to a third of its raw skins to Burkina Faso from where they are exported to the European market for a higher price. This comes from better management of the channels by the Burkinabe and from their working directly with the importers in Europe to ensure good quality control. In Mali, as more rigorous quality control is ensured and quality products are rewarded with higher prices, there will be positive changes in the supply channels.
- A similar comparison with Niger demonstrates that Niger is exporting six times more onions to neighboring countries than Mali, though both enjoy similar climatic conditions.

### **Opportunities**

Many of the MSE sectors offer potential for export development: fresh vegetables, onions, skins and hides, finished leather products, and dyed cloth. The artisans who produce or craft these goods cannot be expected to know what the market wants beyond their immediate clients. They need coordinating actors who can provide market signals and watch over the quality and timing of the production by the MSE.

Export market development is not a simple task. If it is to be seriously pursued as a goal of the GRM, then the appropriate resources must be devoted to it. In today's world, one does not build an export market by exporting surplus production after domestic needs have been met. One produces for export and needs to understand those markets and coordinating systems to ensure that the goods which reach those markets are of a consistent quality, consistent quantity, competitive price, and are delivered on schedule. MSEs can be at the base of the production of export goods, but they need to be well informed and better organized to understand and meet the needs of their clients.

This has been proven possible in green bean exports, but the products have not yet been diversified, though the structures exist. Working with the exporters as the coordinators can enhance MSEs production, management and marketing capacity and will have more impact than working directly with the individual vegetable growers.

## **UNDERDEVELOPED SYSTEMS FOR FINANCIAL INTERMEDIATION**

Often cited as the first need of enterprises in development, access to capital remains a constraint in Mali. This was evident in the agricultural machinery, skins and hides, and vegetable marketing subsectors. This is true not only at the enterprise level, but also at the consumer level. Increasing the purchasing power of the consumer through increasing his/her access to credit is often ignored, though it is a major opportunity for expanding the markets of the MSEs.

Yet capital shortage is not the problem. The private commercial banks in Mali are liquid, in fact they place large amounts of their available funds on the money market for the government to use rather than putting these funds into the private sector. In addition, there is over \$65 million and soon to be \$100 million in donor funds ready to be loaned or serve as guarantees for loans to micro, small and medium enterprises. What is lacking are the tools and delivery mechanisms to properly and successfully link the lender and borrower together. It is unwise for the donors to provide more financing for credit until this major constraint has been addressed.

In theory, a loan guarantee fund is designed to take the burden of risk off the lender and to stimulate him/her to explore new sectors and develop new financial tools and products which are appropriate for the market. The commercial banks in Mali have experienced other problems which have limited their interest in risky loans to MSEs and the banks can be expected to develop the systems only with significant help from the outside. As noted in Chapter Three, the costs and risks of lending to the smallest borrowers just do not make it a profitable activity for the banks. The one exception would be to pool the loans so that they are serving simply as the source of capital for another group which assumes the responsibility of properly marketing and managing the loan portfolio.

### **Opportunities**

There have been some creative examples of this behavior beginning in Mali: the BIAO and BNDA are lending directly to producer organizations who then on-lend to their members; the BOAM has just made a short term \$12,000 loan to a Malian NGO, AMIPJ, which will in turn lend it to village solidarity groups for three month investments. The solution is to work at the Malian NGO level, where direct MSE lending can be profitable if well managed. A successful effort can serve as a model to increase the link between the banks and other NGOs who can act as management resources on how to run the credit systems. Leverage of this kind is the only way that new financial products and markets can be explored and developed which will reach the intended beneficiaries-MSEs.

While the financial sector in Mali has made many strides in terms of successfully delivering credit at a competitive price, one critical element has been missing from the equation of sound financial intermediation: mobilization of local resources. Rather than referring to this as savings mobilization, this should be viewed, from the eyes of the saver, as generating secure investment opportunities. Once again, the costs associated with the formal banking sector are too great and the population of savers too small and disparate to make it profitable for banks to get involved in large scale savings programs in the rural or even the urban areas. Appropriate savings institutions at the village and urban level which can generate resources for the formal financial sector are possible (witness the savings and credit programs in Burkina Faso and Togo as two clear examples) and will simultaneously serve as developing borrowing capacity from among its savers. This will increase the financial options open to MSEs as a whole.

## MARKET SATURATION THROUGH IMITATION

The lack of creative options for enterprises and products among the MSEs often leads to massive imitation whenever one new idea appears. With a per capita income of approximately \$260, Mali has very limited markets for its local production. If the potential market is limited, then new entrants must necessarily take a portion from the existing market actors, which leads rapidly to saturation. This is demonstrated most poignantly in fresh vegetable production which peaks during a limited three months of the season due to climatological factors. So many organizations are promoting these income generating activities with villagers and producer groups that there are no longer any profitable market opportunities available for domestic vegetable sales during this period.

### Opportunities

NGOs are very good disseminators of information and ideas about new activities. Unfortunately, they have sometimes been at the root of many of the problems by getting into activities which are the easiest to introduce, but which often lead to market saturation. Working closely with the NGOs to get them to identify new activities or products which are appropriate for diversification and then encourage them to transmit this information to potential beneficiaries presents new opportunities for entrepreneurs.

Ensuring that those NGOs which decide to undertake MSE activities understand market forces and are aware of new opportunities for product diversification will ensure that there is less product imitation being promoted. For example, to resolve the fresh vegetable crisis, several opportunities exist: lengthen the growing period through introduction of new water drawing technologies or transform the vegetable through drying so that the dried products can reach the market at a later time. Working with NGOs to get them to concentrate in these areas is an active, highly leveraged solution.

## HIGH COST OF INTERMEDIATE GOODS — TRANSPORT AND TECHNOLOGY

Given the limited purchasing power of the consumer, reducing the production cost of goods will promote expansion in the market turnover. Therefore, the ability to reduce cost of production either through new technologies or cheaper raw materials will lead to increased production and greater employment generation. The cost of transport stands out as a major intermediate cost in Mali, in particular for bulky items. The blacksmiths complained of its impact on their access to and cost of raw materials (metal); transport is the point of greatest added margin in the woodfuels sector; the cost of transport can reach five to ten times the farm gate price of vegetables (onions) produced for export to neighboring countries.

Appropriately designed and manufactured technology can be a major force in changing the factors of production and lead to lowered costs and expanded markets. In vegetable production, **pumping technologies** which are available in other Sahelian countries have not been adopted in Mali, yet cost effective improvements could lengthen the growing period of vegetables late into the dry season. **Solar drying technologies** have not been integrated into commercial applications either, despite gluts of vegetables on the market during specific seasons. In shoe manufacturing, there are used machines which exist, primarily from defunct factories, which can be cost effective in Mali and compete strongly against imports if the user understands the technology. New **processing machines** for agricultural transformation could help to change dietary habits.



One of the problems with technology development is that it is rarely incorporated into the production operations or within the commercial channels. In Mali, only the two agricultural machinery workshops in Koutiala and Ségou provide this feedback into their production lines, while SMECMA was supposed to do the same but has not. In pumping and processing equipment, the links between the commercial channels and the technologies are also weak. The same holds true for adapted construction materials which are rarely developed in collaboration with the builders themselves, thus the "improvements" don't respond to their interests or needs. In textiles, a tremendous opportunity exists if an intermediate technology can be adapted from India to provide a higher quality artisanal thread which can then be incorporated into a semi-industrial production operation. This would open up new opportunities while complementing the traditional hand produced thread and not threaten its role as income generator for thousands of women.

### **Opportunities**

High transport costs are largely caused by a lack of roads, the poor conditions of the existing roads and difficulty of getting spare parts to adequately maintain vehicles. Addressing the quality of roads is a public works issue and is an age old problem and requires large scale investment by the government to keep the roads in good shape. However, hiring teams of low technology road crews can also be the source of much MSE employment generation while reducing the costs of doing business, as the World Bank is trying to show with programs in Senegal, Niger, and Burkina Faso.

On the technology side, the opportunities exist in a multitude of ways, some of which were noted above. There are dozens of local and international NGOs and agencies addressing technological issues in Mali. First and foremost, however, must be the insistence by donors of incorporating any new technology development into commercial channels. They must have private partners, who would market and test the products themselves, to get feedback from the users and to test the market's price sensitivities.

Many technologies which exist in other countries could be used cost effectively in Mali. The difficulty lies in identifying the products and markets, gaining the skill levels to use the machinery/technology, and a lack of sufficient efforts by the donors to bring in the people who know the markets and understand how to integrate the technologies into the marketplace.

### **WEAK MANAGEMENT AND TECHNICAL SKILLS**

There are a series of skill related constraints to MSEs which keep them locked into low price and low volume market niches. Foremost among them is the quality of the finished product, but weaknesses are also found in market analysis, establishing marketing links, and determining the appropriate levels of integration for the activity.

**Quality.** A common constraint to improved access to the higher end markets encountered across the subsectors is the lack of the appropriate skill levels of the artisans for producing finished quality goods: in leather goods, the quality is often naphazard and the work is poorly done; in vegetable production, larger plots managed by enterprises produced less reliable quality; and large scale garment manufactures lacks the quality to compete with imports.

**Marketing: analysis and distribution.** MSEs are generally very limited in their perspective into the true nature of the markets they are feeding. From all six subsectors analyzed, many common characteristics can be identified which are greatly hampering potential production and the evolution into new products. Entrepreneurs can only see and understand what is going on around them and are unaware of what is happening in other parts of the country (or in some cases other parts of the world). This prevents them from understanding who their clients are and what their clients want. It also prevents them from figuring out how to get their goods into more remunerative markets outside of their limited environment. This limited perspective forces them into trying to copy the activities going on around them with little concern for market saturation until it is a fait accompli.

**Management of production and marketing.** Enterprises need to manage their growth. There is a critical point in the evolution of MSEs when they shift away from a diversified set of activities into performing one specialized activity. Identifying the correct opportunity to make this shift is often missed by many entrepreneurs at the MSE level in Mali because they are trying to capture the maximum revenue from the sale of a single article, ignoring the fact that they could be selling far more articles for less marginal profit per unit, but for greater overall earnings. Properly managing the levels of production and vertical integration in the productive enterprises is an important managerial issue which needs to be improved upon.

### **Opportunities**

There are currently numerous training programs underway which try to address many of these problems. However they are often done in isolation, away from the marketplace and outside of the enterprise.

**Develop market based and focused training activities.** The training programs which the ILO is about to prepare can be done using classic class room methodologies, or they can be innovative action oriented programs which mix classroom teaching with firm level applications through projects which require the students to implement the techniques learned in their firms. The latter is very difficult to achieve but has much more impact on the participants and actually helps to stimulate outside linkages during the course of the training. The training itself can serve as a major source of information about the kinds of problems which the entrepreneurs really face and can force the participants to develop possible solutions to the constraints which confront them.

**Decompartamentalize training programs to cross more boundaries and fit within the market environment of the businesses.** Too many of the training and technology development programs are divorced from the reality of their channels of production and the ultimate determinant of their success: acceptance by the market. Both training and technology development programs must be developed within the context of their ultimate goal and place within the vertical channels of production. There must also be flexibility to change the curricula and techniques when it is determined that these are not responsive to market constraints and opportunities. The OHV should consider opportunities developing for modern blacksmiths in other metal product areas such as the production of pumps and mills and the simple manufacture of shovels, picks and rakes. Training programs need to be revised to encourage movement into products such as these, which have markets both on and off-farm.

Other programs should encourage greater specialization and vertical de-integration through greater technical skill in one area to produce a better product. MSE's are often forced into vertical integration by the lack of markets for any one particular product in a channel, as is the case with spinners in textile. With new technology, they may expand the market, allowing them to make their particular item in greater quantity and at better quality rather than trying to make the entire product.

**Focus training on subsector specific problems.** Managerial, financial, technology, production, marketing, and organizational problems are often quite similar between enterprises within the same subsector. Providing concrete, activity specific training, developed through careful work analyzing the problems facing enterprises within those activities will generate more positive results, since the entrepreneurs can understand and relate to the specific cases and examples.

A model project in Senegal has developed training programs for MSEs based on the constraints facing firms in the same activities. Using teams of trainers and "consultants" recruited from within the subsector, the project is keeping the costs low, while addressing the critical problems of the enterprises. The development time for training for each subsector is considerable, but then the training module is used repeatedly to train entrepreneurs in the given subsector. Now that many of the glitches in the process have been smoothed out, this methodology can be replicated to some extent in Mali.

## **UNFAVORABLE POLICY AND REGULATORY ENVIRONMENT**

The subsector analyses highlighted the numerous policy and regulatory issues which affect MSEs in all of the subsectors.

In woodfuels, the structure of the various taxes and licenses are questioned as to their purpose and efficacy at promoting the optimal solution. The regulatory role of the *Eaux et Forêts* extends to taxing farmers on their own fields, and the problem of land tenure plays a critical role in the decision behavior of the farmers.

In agricultural machinery, import duties on raw materials used by small artisans are between 35 percent and 65 percent, while semi-finished and finished goods which generate the least value added and are in the hands of a few importers enter duty free. The disparity on import duties for used clothing favors larger importers over smaller ones and also promotes increased amounts of fraudulent imports from neighboring countries.

In clothing manufacture and maroquinerie, the apparently arbitrary determination of patents and income taxes (in the eyes of the producers) forces them to work behind closed doors, away from their client base. The requirement to obtain a second (or third) patente when diversifying an activity from simple manufacture to retail sale provides an incentive to not take advantage of synergies which might exist between products and activities (such as tailors also selling cloth).

Many policies governing the financial system, such as credit and interest rate ceilings, lead banks away from investing in the systems necessary to cost effectively reach the small and microenterprises. In addition, customary practices requiring male concurrence for women's activities and access to credit are a major handicap to women.

## **Opportunities**

Addressing policy issues is a long term problem. There are many political and vested interest issues which must be addressed. As noted in Chapter Three, one of the real constraints is that there is no regular system for bringing these issues to the attention of the policy/decision makers and getting them addressed. Donors can play a more important role in this respect by: (1) strengthening indigenous non-governmental advocacy groups;<sup>1</sup> and (2) improving the roles of new and existing projects in the policy reform process.

The latter would involve developing mechanisms and systems to identify and feed back concrete examples of policy constraints at the MSE level. They would then integrate the analysis of those policy issues into other programs which focus on policy analysis and dialogue such as the upcoming Policy Reform and Economic Development project sponsored by USAID. NGOs are an ideal group for serving this role because they are working at the grass roots level and run into these problems on an every day basis. Formalizing the lines of communication between NGOs and donor organizations to promote such feed back can serve as a major tool for strengthening the enabling environment for MSE.

---

<sup>1</sup> Employer unions (patronnats), trade associations, and the NGO coordinating committees.

## **CHAPTER FIVE**

### **MICROENTERPRISE STRATEGY**

Realistically, there is a limited number of possible direct interventions from which to choose in establishing programs to address needs of MSEs:

- Provide some form of improved **access to capital**, either through increased supply, simplified paperwork and bank loan analysis and evaluation systems, accessible savings facilities;
- **Train** entrepreneurs and their staff in either technical or managerial skills to respond to weaknesses;
- Facilitate **technological change** to provide improved or better adapted technology to respond to the scale of the MSE;
- Stimulate **policy or regulatory reform** to eliminate artificial constraints which are repressing MSEs and private sector development in general; and
- Develop systems and organizations which will **facilitate coordination** to enhance linkages between the different function levels in related subsectors.

The search for a cost effective strategy for USAID/Mali implies the use of leverage: building on its strong points and comparative advantage vis-à-vis the other donors as well as the GRM to develop focused interventions. It also implies working in arenas where the greatest potential for improvement exists. From the analysis of the institutional environment, it is clear that many government, private, NGO, and donor structures already exist to provide support to MSEs. Therefore, the greatest leverage may arise not from actually implementing any one of the five direct interventions cited above, but from indirectly supporting them through increased institutional support to existing activities. These structures are already responding to many of the intervention opportunities cited above, which are reviewed in Chapter Three, and working with them can be a source of leverage for USAID.

#### **STRATEGIC FOCUS: THE NGO AS THE CENTRAL THRUST TO THE STRATEGY OPTIONS: POINT OF AID COMPARATIVE ADVANTAGE AND POINT FOR LEVERAGED IMPACT**

One major, relatively unaddressed opportunity lies in strengthening the NGO capacity to understand problems related to microenterprises and execute activities in support of microenterprise growth. The Malian NGO community, at present has a relatively weak capacity to address and implement microenterprise development projects. An AID strategy which is focused around developing that capacity would create specific leverage by allowing USAID/Mali to address the direct interventions listed above through the intermediary of the NGO community. Therefore, direct assistance to dynamize

the NGOs with respect to MSE will allow USAID to have far greater impact and indirectly reach a greater number of MSEs. The NGOs can serve as a point of leverage.

Chapter Three highlighted the increase in numbers of Malian NGOs. They are actually one of the most rapidly growing sources of employment for the Jeunes Diplomés and early retirees, two of the major target groups in Mali. Unlike international NGOs, many Malian NGOs were created with the specific objective of generating employment for their members. Targeting a market comprised of donor funds, they are essentially service enterprises which provide a relatively cost effective means to deliver donor resources to the field. The NGO trend has caught on and will continue to follow the donor market into its new interests and phases, of which microenterprise development is the latest.

The research underlying this Strategy was carried out in conjunction with many of the leading NGOs involved in MSE development in Mali. During the study it became apparent that, while NGOs have capacity in the technical and social domains (engineering, forestry, women's issues), they have little practical experience or understanding of the major issues surrounding microenterprises, market development, finance, enterprise budgets, and the different kinds of interventions which can be executed. Not only are local NGOs technically weak in MSE development, there is also very limited capacity in the U.S. PVO and international NGO community in Mali to support MSE development and dynamize Malian NGOs in the proper direction.

NGOs are capable of serving as important resources for all of the major direct interventions listed above. Their broad existing bases of contact can make them cost effective participants and they have proven their ability to implement successful projects. Some areas of particular specialty are:

- They can train entrepreneurs and speed technological transfer, as has been seen in Burkina Faso and Mali within the weaving subsector;
- They can establish and implement cost effective business skill training for microentrepreneurs as is happening in Senegal;
- They can establish local level systems for financial intermediation (improving access to capital), as seen in Niger, Burkina Faso, and Togo;
- They can facilitate the coordination to improve linkages between the different actors in the vertical channels from production to market as most NGOs are currently doing in agricultural products in Mali.

A major weakness of the NGOs lies in their ability to serve as implementers of policy dialogue, which is understandable given their still delicate status vis-à-vis the government in Mali. However, even here, the NGOs can play an important role as a resource to the donors or other advocacy groups who are capable of carrying out a policy dialogue. Their ground level view of the problems which face microenterprises on a day to day basis can be an invaluable source of concrete evidence in support of larger issues.

Finally, USAID/Mali has a demonstrated capacity in working with NGOs, providing the Mission with a comparative advantage in this field. It also has the first NGO community-wide project which addresses MSEs. Concentrating on this opportunity will provide USAID/Mali with a leverage point of significant importance. The program can help shape individual NGO efforts involving all of the possible interventions cited above, even if USAID does not provide the financing. Facilitating coordination and stimulating MSE activities in the NGO community should serve as the underlying theme of all of its

**strategic options, from which USAID can also address policy issues and coordination among the donors and within the Government.**

## GEMINI PUBLICATION SERIES

### GEMINI Working Papers:

1. "Growth and Equity through Microenterprise Investments and Institutions Project (GEMINI): Overview of the Project and Implementation Plan, October 1, 1989-September 30, 1990." GEMINI Working Paper No. 1. December 1989. [not for general circulation]
- \*2. "The Dynamics of Small-Scale Industry in Africa and the Role of Policy." Carl Liedholm. GEMINI Working Paper No. 2. January 1990. \$5.50
3. "Prospects for Enhancing the Performance of Micro- and Small-Scale Nonfarm Enterprises in Niger." Donald C. Mead, Thomas Dichter, Yacob Fisseha, and Steven Haggblade. GEMINI Working Paper No. 3. February 1990. \$6.00
4. "Agenda Paper: Seminar on the Private Sector in the Sahel, Abidjan, July 1990." William Grant. GEMINI Working Paper No. 4. August 1990. \$3.00
- \*5. "Gender and the Growth and Dynamics of Microenterprises." Jeanne Downing. GEMINI Working Paper No. 5. October 1990. \$10.50
6. "Banking on the Rural Poor in Malaysia: Project Ikhtiar." David Lucock. GEMINI Working Paper No. 6. October 1990. \$3.30
7. "Options for Updating AskARIES." Larry Reed. GEMINI Working Paper No. 7. October 1990. \$3.50
- \*8. "Technology — The Key to Increasing the Productivity of Microenterprises." Andy Jeans, Eric Hyman, and Mike O'Donnell. GEMINI Working Paper No. 8. November 1990. \$3.60
9. "Lesotho Small and Microenterprise Strategy — Phase II: Subsector Analysis." Bill Grant. GEMINI Working Paper No. 9. November 1990. \$15.50.
- \*10. "A Subsector Approach to Small Enterprise Promotion and Research." James J. Boomgard, Stephen P. Davies, Steven J. Haggblade, and Donald C. Mead. GEMINI Working Paper No. 10. January 1991. \$3.10
11. "Data Collection Strategies for Small-Scale Industry Surveys." Carl Liedholm. GEMINI Working Paper No. 11. January 1991. \$1.30.
12. "Dynamics of Microenterprises: Research Issues and Approaches." Carl Liedholm and Donald C. Mead. GEMINI Working Paper No. 12. January 1991. \$6.50.

---

\*Publications of general interest



13. "Dynamics of Microenterprises: Research Priorities and Research Plan." Carl Liedholm and Donald C. Mead. GEMINI Working Paper No. 13. August 1990. [not for general circulation]
14. "Review of Year One Activities (October 1, 1989 to September 30, 1990) and Year Two Work Plan (October 1 to November 30, 1990)." GEMINI Working Paper No. 14. January 1991. [not for general circulation]
- \*15. "The Process of Institutional Development: Assisting Small Enterprise Institutions to Become More Effective." Elaine Edgcomb and James Cawley. GEMINI Working Paper No. 15. February 1991. \$9.70.
16. "Baseline Surveys of Micro and Small Enterprises: An Overview." Donald C. Mead, Yacob Fisseha, and Michael McPherson. GEMINI Working Paper No. 16. March 1991. \$2.60.
17. "Kenya: Kibera's Small Enterprise Sector — Baseline Survey Report." Joan Parker and C. Aleke Dondo. GEMINI Working Paper No. 17. April 1991. \$6.40.
- \*18. "A Financial Systems Approach to Microenterprises." Elisabeth Rhyne and Maria Otero. GEMINI Working Paper No. 18. April 1991. \$3.00.
- \*19. "Agriculture, Rural Labor Markets, and the Evolution of the Rural Nonfarm Economy." Steve Haggblade and Carl Liedholm. GEMINI Working Paper No. 19. May 1991. \$2.50.
- \*20. "The Microenterprise Finance Institutions of Indonesia and Their Implications for Donors." Elisabeth Rhyne. GEMINI Working Paper No. 20. June 1991. \$3.40.
21. "Microenterprise Growth Dynamics in the Dominican Republic: The ADEMI Case." Frank F. Rubio. GEMINI Working Paper No. 21. June 1991. \$3.10.
- \*22. "Credit Unions: A Formal Sector Alternative for Financing Microenterprise Development." John H. Magill. GEMINI Working Paper No. 22. September 1991. \$3.80.
23. "Steps to the Creation of a Viable Financial Institution for Microenterprise Development in the Philippines: Notes on a Process for the Staff and Board of Tulay sa Pag-Unlad, Inc." Doug Salloum and Nan Borton. GEMINI Working Paper No. 23. November 1991. \$2.00.

#### **GEMINI Technical Reports:**

1. "Jamaica Microenterprise Development Project: Technical, Administrative, Economic, and Financial Analyses." Paul Guenette, Surendra K. Gupta, Katherine Stearns, and James Boomgard. GEMINI Technical Report No. 1. June 1990. [not for general circulation]
2. "Bangladesh Women's Enterprise Development Project: PID Excerpts and Background Papers." Shari Berenbach, Katherine Stearns, and Syed M. Hashemi. GEMINI Technical Report No. 2. October 1990. \$13.00
3. "Maroc: Conception d'une Enquête pour une Etude du Secteur Informel." Eric R. Nelson and Housni El Ghazi. GEMINI Technical Report No. 3. November 1990. \$12.50
4. "Small Enterprise Assistance Project II in the Eastern Caribbean: Project Paper." James Cotter,

- Bruce Tippet, and Danielle Heinen. GEMINI Technical Report No. 4. October 1990. [not for general circulation]
5. "Technical Assessment: Rural Small-Scale Enterprise Pilot Credit Activity in Egypt." John W. Gardner and Jack E. Proctor. GEMINI Technical Report No. 5. October 1990. \$4.00
- \*6. "Developing Financial Services for Microenterprises: An Evaluation of USAID Assistance to the BRI Unit Desa System in Indonesia." James J. Boomgard and Kenneth J. Angell. GEMINI Technical Report No. 6. October 1990. \$9.00
7. "A Review of the Indigenous Small Scale Enterprises Sector in Swaziland." David A. Schrier. GEMINI Technical Report No. 7. October 1990. [not for general circulation]
8. "Ecuador Micro-Enterprise Sector Assessment: Summary Report." John H. Magill and Donald A. Swanson. GEMINI Technical Report No. 8. April 1991. \$10.20.
9. "Ecuador Micro-Enterprise Sector Assessment: Financial Markets and the Micro- and Small-scale Enterprise Sector." Richard Meyer, John Porges, Martha Rose, and Jean Gilson. GEMINI Technical Report No. 9. March 1991. \$16.00
10. "Ecuador Micro-Enterprise Sector Assessment: Policy Framework." Bruce H. Herrick, Gustavo A. Marquez, and Joseph F. Burke. GEMINI Technical Report No. 10. March 1991. \$11.30
11. "Ecuador Micro-Enterprise Sector Assessment: Institutional Analysis." Peter H. Fraser, Arelis Gomez Alfonso, Miguel A. Rivarola, Donald A. Swanson, and Fernando Cruz-Villalba. GEMINI Technical Report No. 11. March 1991. \$25.00
12. "Ecuador Micro-Enterprise Sector Assessment: Key Characteristics of the Micro-Enterprise Sector." John H. Magill, Robert Blaney, Joseph F. Burke, Rae Blumberg, and Jennifer Santer. GEMINI Technical Report No. 12. March 1991. \$19.60
13. "A Monitoring and Evaluation System for Peace Corps' Small Business Development Program." David M. Callihan. GEMINI Technical Report No. 13. [not available for general circulation]
14. "Small-Scale Enterprises in Lesotho: Summary of a Country-Wide Survey." Yacob Fisseha. GEMINI Technical Report No. 14. February 1991. \$6.40
- \*15. "An Evaluation of the Institutional Aspects of Financial Institutions Development Project, Phase I in Indonesia." John F. Gadway, Tantri M. H. Gadway, and Jacob Sardi. GEMINI Technical Report No. 15. March 1991. \$8.80
- \*16. "Small-Scale Enterprises in Mamelodi and Kwazakhele Townships, South Africa: Survey Findings." Carl Liedholm and Michael A. McPherson. GEMINI Technical Report No. 16. March 1991. \$4.60.
17. "Growth and Change in Malawi's Small and Medium Enterprise Sector." Michael A. McPherson. GEMINI Technical Report No. 17. June 1991. \$2.20.
18. "Burkina Faso Microenterprise Sector Assessment and Strategy." William Grant, Matthew Gamser, Jim Herne, Karen McKay, Abdoulaye Sow, and Sibry Jean-Marie Tapsoba. GEMINI Technical Report

No. 18. August 1991. Volume One, Main Report, \$7.60; Volume Two, Annexes, \$14.20.

\*19. "Women in the BPD and Unit Desa Financial Services Programs: Lessons from Two Impact Studies in Indonesia." Sharon L. Holt. GEMINI Technical Report No. 19. September 1991. \$3.80.

20. "Mali Microenterprise Sector Assessment and Strategy." William Grant, Kim Aldridge, James Bell, Ann Duval, Maria Keita, and Steve Haggblade. GEMINI Technical Report No. 20. Volume One, Main Report, \$6.70; Volume Two, Annexes, .

21. "A Microenterprise Sector Assessment and Development Strategy for A.I.D. in Zambia." Eric L. Hyman, Robert Strauss, and Richard Crayne. GEMINI Technical Report No. 21. November 1991. \$10.00.

#### **Technical Notes:**

##### **Financial Assistance to Microenterprise Section:**

Series Notebook: Tools for Microenterprise Programs (a three-ring binder, 1 1/2 inches in diameter, for organizing technical notes and training materials) and "Methods for Managing Delinquency." \$7.50. (Additional technical notes are forthcoming and will be sold separately.)

##### **Nonfinancial Assistance to Microenterprise Section:**

1. "A Field Manual for Subsector Practitioners." \$4.50.

#### **Special Publications:**

\*1. "Training Resources for Small Enterprise Development." Small Enterprise Education and Promotion Network. Special Publication No. 1. 1990. \$9.00

\*2. *Financial Management of Micro-Credit Programs: A Guidebook for NGOs.* Robert Peck Christen. ACCION International. Special Publication No. 2. 1990. \$19.00

\*3. *The ADEMI Approach to Microenterprise Credit.* A. Christopher Lewin. Special Publication No. 3. 1991. \$15.00

---

Copies of publications available for circulation can be obtained by sending a check or a draft drawn on a U.S. bank to the DAI/GEMINI Publications Series, Development Alternatives, Inc., 7250 Woodmont Avenue, Bethesda, MD 20814, U.S.A.

11/91

61

PN-ABS-798

**Mali Microenterprise  
Sector Assessment  
and Strategy**

**Volume Two:  
Annexes**

*GEMINI Technical Report No. 20*

**GEMINI**

**GROWTH and EQUITY through MICROENTERPRISE INVESTMENTS and INSTITUTIONS  
7250 Woodmont Avenue, Suite 200, Bethesda, Maryland 20814**

**DEVELOPMENT ALTERNATIVES, INC. • Michigan State University • ACCION International •  
Management Systems International, Inc. • Opportunity International • Technoserve • World Education**

# Mali Microenterprise Sector Assessment and Strategy

by

Development Alternatives, Inc.

William Grant  
Team Leader

**GEMINI Consultants:**

Kim Aldridge  
James Bell  
Ann Duval  
Maria Keita  
Steve Haggblade

**Peace Corps Participants:**

Tom Condon  
Stephanie Condon

**NGO and Other Malian Participants:**

Seydou Coulibaly	Ibrahima Coulibaly
Mamadou Coumare	Modibo Mariko
Cheikna Sidibe	Youssouf Sanogo
Abdou Togola	Mariam Toure

October 1990

This work was supported by the U.S. Agency for International Development, Bureau for Asia and Private Enterprise, Office of Small, Micro, and Informal Enterprise, through core funding to the Growth and Equity through Microenterprise Investment and Institutions (GEMINI) Project, contract number DHR-5448-C-00-9080-01, and through buy-ins from the Bureau for Africa, Office of Sahel and West Africa Affairs, contract number DHR-5448-Q-04-9081-00, USAID/Mali, contract number DHR-5448-Q-24-9081-01, and the Bureau for Planning and Policy Coordination, Office of Women in Development, contract number DHR-5448-Q-28-9081-02.

**TABLE OF CONTENTS**

	<u>Page</u>
<b>ANNEX A: VEGETABLE PRODUCTION AND MARKETING</b>	A-1
<b>ANNEX B: AGRICULTURAL MACHINERY IN MALI</b>	B-1
<b>ANNEX C: SKINS AND HIDES SUBSECTOR ANALYSIS</b>	C-1
<b>ANNEX D: MALI MICROENTERPRISE STRATEGY SUBSECTOR ANALYSIS</b>	D-1
<b>ANNEX E: MALIAN WOODFUELS AND VILLAGE ENTREPRENEURSHIP</b>	E-1
<b>ANNEX F: LA FILIERE TEXTILE AU MALI</b>	F-1

**ANNEX A**  
**VEGETABLE PRODUCTION AND MARKETING**

21

## ANNEX A

### VEGETABLE PRODUCTION AND MARKETING

#### I. RATIONALE FOR ANALYZING VEGETABLE PRODUCTION/MARKETING

Agriculture is of prime importance to Mali's economy, with the primary sector representing an estimated 49.6 percent of GDP in 1989. Traditional food crops, mainly cereals (sorghum, millet, corn and rice), accounted for an estimated 16.6 percent of GDP in 1989. Industrial crops, which include cotton, groundnuts, tobacco, fruits, vegetables, and other crops represented 4.6 percent of GDP. Industrial crops have continued to grow in both value and as a percentage of GDP. The GDP value of industrial crops grew from 14.2 billion CFA in 1984 to 29.7 billion CFA in 1989 (at current market prices), and from 3.1 percent to 4.6 percent of GDP. The agricultural sector also provides more than 80 percent of total employment, with 2.7 million producers registered in the 1987 census.

No statistics exist which segregate fruit and vegetable production from other industrial crops. However, it is clear that vegetable production has grown steadily in importance over the past 5 - 10 years. Vegetables now represent 5 percent of the household budget, and total consumption figures for 1988/89, based on the Household Budget Survey, were estimated at 27 billion CFA. 1990 DNSI figures show vegetable exports of 848 tons for a value of CFA 168.3 million. It is estimated that there are 51,000 agricultural producers growing and marketing vegetables in Mali. In addition, there are thousands of merchants involved in vegetable sales. National Accounts show that 96.54 percent of income and 78.42 percent of sales are generated by MFE's in the overall industrial agriculture sector.

Among its members, CCA counts 79 NGO's carrying out 189 maraichage projects. These NGO's are often promoting gardening activities as a means of supplemental income with a rapid turnover. Many of the projects target women as primary beneficiaries, with mixed objectives of improving family nutrition and increasing income. This study has looked at commercial vegetable production rather than gardening for family consumption.

The study focused on the production and marketing of tomatoes and onions for the domestic market, and green beans and onions for export. It attempts to provide an understanding of the potential for microenterprise participation in the sub-sector, to describe the markets and dynamics within the sub-sector, and to identify leveraged interventions which could promote the growth of the sub-sector and of microenterprise activity in particular.

#### II. MARKETS FOR MALI'S VEGETABLES

##### A. Export Market

National export statistics indicate that vegetable exports have decreased in the period from 1985 to 1990. In 1985, the Customs division of the Ministry of Finance registered 1,926 metric tons of vegetable exports, for a total value of CFA 659 million. The 1990 figures show 848 metric tons of vegetable exports, totalling CFA 168.4 million. The drop in both value and quantity of vegetable exports seem to be due to several factors. First, green bean exports to Europe decreased greatly over this period,



with only 248 tons exported in 1990 at a per kilo price of 115 CFA, while 688 tons were exported in 1985 at 300 CFA/kilo. (Overall green bean imports by EEC countries dropped from 48,000 tons in 1985 to 32,000 tons in 1990.) In addition, export of such vegetables as hot peppers and dried beans seem to have ceased altogether between 1985 and 1990. Finally, difficulties within the exporting companies have contributed to this decline.

## 1. Europe

In 1985, vegetables exported to Europe included onions (echalotte), hot peppers, dried beans and seed vegetables. In 1990, however, Mali exported tomatoes, eggplants, green beans, and frozen mushrooms to Europe. Green beans now dominate vegetable exports to Europe, with 248 tons valued at CFA 28.6 million in 1990, representing 17 percent of total value of vegetable exports, and 99 percent of the value of vegetable exports to Europe. Virtually all green beans were exported to France.

The volume of green beans imported by EEC countries has remained relatively stable for the last five years, at an annual average of 35,000 tons, having fallen from a high of close to 50,000 tons in 1985. France is the single largest importer of green beans among the EEC countries, having imported 36 percent of the 31,000 tons imported in 1989. More than half of total EEC green bean imports, or 20,000 tons, originated in African, Caribbean and Pacific (ACP) countries over the past two years. Mali's share of the total EEC market for imported green beans is minimal, at less than 1 percent.

While the total amount of green beans exported by African countries is not known to the researchers, it is clear that Mali is facing stiff competition from exports by other African countries, including Ethiopia, Egypt, Morocco, Senegal, Burkina Faso, and Kenya. Kenya appears to be the largest African exporter, primarily due to a favorable climate, which permits it to produce the highest quality bean (extra fine) virtually year round. Some of these countries also offer advantages and subsidies to their exporters, which Malian exporters do not enjoy. For example, the government of Senegal remits 20 percent of the value of shipments to the exporter at the time of expedition. The LEC has apparently entered into an agreement with APC countries for vegetable exports, under which the EEC remits a certain percentage of the value of exports to the APC countries. The government of Senegal has chosen to remit a portion of these receipts directly to its exporters.

## 2. Regional

In 1985, the products exported by Mali to neighboring African countries were green beans, onions (echalotte), and hot peppers. The customs data for green beans in 1985 may be misleading, however. It is probable that these exports were ultimately destined for France, with the planes only transitting through countries such as Senegal and the Cote d'Ivoire. 1990 statistics show only onions, seed vegetables, and other dried vegetables exported to the Cote d'Ivoire.

No data is available on total Cote d'Ivoire imports of vegetables, nor on the competition by other countries for this market. However, it is clear that onion exports are of primary and growing importance to Mali within total vegetable exports. Onion exports were valued at CFA 20.5 million in 1985, compared to CFA 122.5 million in 1990. In 1990, onion exports to the Cote d'Ivoire accounted for 73 percent of the value of all vegetable exports.

To these official export figures must be added the clandestine, or non-official, export of onions. As much of this commerce is carried out by individual wholesalers in the informal sector and by merchants from other countries coming to Mali to buy, it is difficult to estimate the amount and value of clandestine exports. Wholesaler in Bamako, for example, count many merchants from Guinea, Sierra Leone and Mauritania among their regular clients. Exports to these countries, however, do not show up in official statistics.

## **B. Domestic Markets**

Although difficult to demonstrate statistically, it is clear that the domestic market for vegetables has grown steadily over the past 5 - 10 years. This appears to be due primarily to expanded educational programs, which promote improvement in nutrition and emphasize the importance of including fresh vegetables in the daily diet. Tastes at the consumer level therefore seem to be changing. Young people, especially in urban areas, are accustomed to having fresh vegetables in their diet. The increase of the urban population, which consumes most of the commercial vegetable production has also contributed to the expansion of the market for vegetables.

Vegetables now represent 5 percent of the household budget. Consumption of onions and tomatoes alone represent 3 percent of the budget, or 60 percent of total vegetable consumption. These two vegetables were thus chosen as the focus of the study. Total vegetable consumption figures for 1988/89, based on the Household Budget Survey, were estimated at 41 billion CFA. As approximately 35 percent of all vegetable production was auto-consumed, the commercial market is estimated at 27 billion CFA/year. Total commercial consumption of tomatoes is estimated at 4.1 billion/year, and onions at 10.5 billion/year.

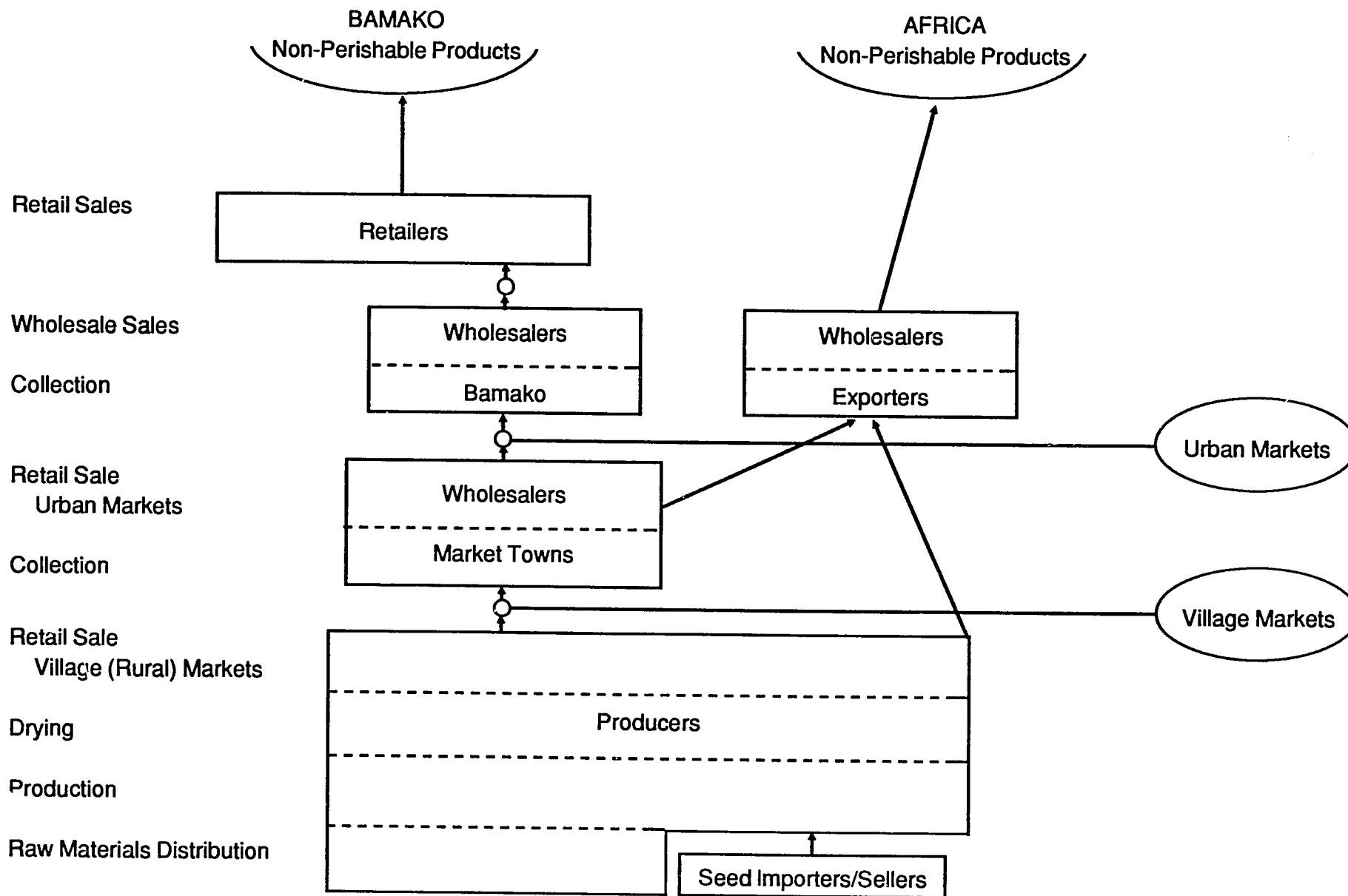
The domestic market must also be analyzed in relation to geographic distribution. As 80 percent of Mali's population lives in rural areas, the rural market is clearly the most important in terms of numbers of consumers. Auto-consumption of vegetables is much higher in rural areas, however, estimated at approximately 40 percent. The rural commercial market is therefore limited and exists primarily at the village level. The largest market in terms of sales, therefore, is in urban areas, where purchasing power is higher and the ability to produce vegetables for own consumption is lower. These urban areas can be further divided into Bamako, and regional capitals or principal towns. Bamako alone consumes about 50 percent of all commercial vegetable production, making it the principal current domestic market.

## **III. STRUCTURE OF THE SUBSECTOR**

### **A. The Subsector Map**

As "maraichage" is primarily an agricultural activity, the sub-sector map is quite simple. Because of the differing nature of perishable vs. non-perishable vegetables, it has been easiest to draw two separate sub-sector maps. In each map, there are three main types of activities which enable the transformation of inputs (in this case water, seeds, fertilizers and insecticides) into the product delivered to the final consumer. These are supply of inputs, growing the vegetables, and their sale. Occasionally, a fourth activity, conservation, intervenes. The vegetable sub-sector consists of the network of actors intervening in these various functions. The two sub-sector maps are shown on the following pages.

# NON-PERISHABLE VEGETABLES SUBSECTOR MAP



105

## 1. Functions

The maps depict the vertical flow of products from the supply of raw materials through the production of vegetables to the final consumer. The principle functions include: supply and distribution of inputs (primarily seeds, although including fertilizer and insecticides); production of the vegetables; drying; and, sales.

In the vegetable sub-sector, the commercialisation of the product is extremely important, and is consequently sub-divided into several distinct activities. For perishable vegetables, the activities include assembly and bulk purchases, and small-level wholesale and retail sales. Large wholesalers intervene in the marketing of non-perishable vegetables.

## 2. Coordinating Mechanisms

The sub-sector map (described in section III.C.) is comprised of a series of principal production channels, depicting the vertical linkages in relation to various markets. Actors or participants at each stage of production, or function, are linked to other actors in the system, whether within one production channel or between channels. Relationships, or linkages, are depicted in different ways on the map: double dotted horizontal lines depict sub-contracting arrangements; solid lines represent direct sale of a product.

The various boxes shown on the map represent the different participants in the system. An elongated box depicts vertical integration within a channel (when one firm or household performs a series of functions). Where a firm subcontracts out an activity but still maintains control of the product, and when a function is implicitly undertaken by one actor, the sides of the box are drawn with dotted lines.

## B. Technology

Strictly speaking, the use of any kind of technology is limited in the vegetable production and marketing sector. At the production level, different aspects of growing techniques will be discussed. At the sales level, no transformation, and therefore no technology, exists. At the conservation level technology becomes more important.

### 1. Production

Vegetable growing involves a number of distinct steps. First, the seeds are planted, either directly in the field or in seedbeds. Although there is a growing market for imported seeds, many farmers still produce their own from the previous year's crop. This is especially true of onions (echalotte) and tomatoes. Green beans are planted directly in the fields. Tomatoes and onions, however, should be planted in seedbeds then transplanted in a second step to the garden. Tomatoes stay in the seedbed for 20 days before being transplanted, onions 5-6 days.

During the growing season plants are fertilized, treated with insecticides periodically, and watered regularly. Green beans begin to produce 35-40 days after planting, and must be picked every 1 to 3 days thereafter. Onions are ready to be harvested between 3 to 5 months after planting. Tomatoes can be harvested 45 days after transplanting, and then picked every few days.

Although difficult to estimate with any accuracy, we have determined that the average amount of land cultivated in vegetables by one individual or family is 0.15 hectare. (It is estimated that for the primary growing regions for perishable vegetables, the Haute Vallee and the Office de Niger, the average is 0.20 hectare. In the Bandiagara area, where onions are intensively cultivated, the average amount of land cultivated by one family is 0.06 hectare.) As a result of the small average vegetable plot, tools and "technology" used are rudimentary for most vegetable farmers. Water is most often drawn from hand-dug wells with a rope and bucket system. A watering can is then used to water the crops. Simple hand tools, such as dabas and picks, are used. Farmers cultivating larger areas (usually at least 0.5 hectares) may use cattle-drawn plows.

There are a limited number of large vegetable farmers, cultivating from 1 to 5 hectares of land. They are usually located near a constant source of water, and generally use a motorized pump and pipeline system for irrigation. These producers usually employ daily manual labor for the growing season. It is possible that this type of farmer constitutes a separate channel on the sub-sector map, because of the superior technology used. Closer study is needed of the difference in yields and return to labor between farmers cultivating small parcels with hand-powered access to water, and larger farmers using mechanized water systems.

## 2. Conservation

The primary and traditional form of vegetable conservation is the drying of vegetables, especially onions and okra, although tomatoes are also dried when necessary. Apparently, tomatoes are also traditionally made into 'conserves', but no information was gathered on this process.

Given Mali's climate, drying is the most effective method of preserving perishable foods. As vegetable drying has a long tradition, many Malian dishes by now call for the dried product specifically, so there is a constant market for them. Vegetables are primarily dried, however, to prevent losses due to overproduction. This is the main remedy available to a producer when he/she is unable to sell all of the vegetables produced in a season.

There are two traditional forms of dried onions on the market. First are dried onion balls. Onions are left to dry for 1 day in the sun after being taken out of the ground. They are then cleaned, and the outside skins removed. The onions are then pounded against a rock until a paste is obtained, which is formed into little balls. The balls are left to further dry in the sun for 1 week. To use, these balls are broken into little pieces which are ground to a powder and used as a condiment. The second form of dried onions resembles large loose flakes. This method consists of cutting the onions into slices and letting them dry in the sun.

More modern, efficient, and hygienic methods of drying are now being introduced into Mali, primarily the use of solar dryers. Several types of dryers have been locally tested and are on the market in a very limited quantity. The dryers range in capacity from 5 kilos (for single family use) to 150/200 and 500 kilos. Drying onions in a solar dryer requires sorting, peeling and slicing onions. Then, they are put onto racks and into the dryer, where they are turned once or twice a day. In the hot dry months, it takes 2 days to dry onions, while 3 - 5 days are required in the rainy season.

### C. Supply Channels

Microenterprises do not work in isolation, but in vertical supply systems, with linkages to many other actors within the system. Relationships may be in procuring inputs or in marketing outputs. The supply channels are defined by the vertical linkages between different actors, and their relation to various markets.

In the production and marketing of perishable vegetables (sub-sector map 1), two principal channels exist.

#### 1. Europe

Although some cherry tomatoes and eggplants are exported to Europe, the principal export is green beans. Green bean exports to Europe in 1990 (primarily to France) were valued at 28.6 million CFA, or 99 percent of total vegetable exports to Europe. The product specialisation and the unique method of production create a separate channel for export of fresh vegetables to Europe.

Green beans are produced in Mali essentially for the export market. They are little known and appreciated by domestic consumers. As a result, and to ensure adequate supplies, exporting companies procure the beans only through sub-contract arrangements. The exporter purchases the seeds, distributes them to many small producers, provides other inputs as needed during the growing season (fertilizer, insecticides, and technical assistance), and collects the beans in the fields every day or every two days during the harvest season. At the time of collection, the beans are sorted by size and packaged directly in cardboard boxes. The exporter then transports the beans to a refrigerated room at the airport, where they are kept for a few days until the next plane is available.

The exporter deducts the value of the inputs provided to the producer at the time of payment. The price paid per kilo to the producer varies between exporters, ranging from 80 CFA to 210 CFA, depending on the type and quality of the bean. The average net price paid to the producer after deducting the price of the inputs seems to be about 40 to 45 CFA per kilo. In turn, the exporters sell the kilo of beans in France for an average of 400 CFA.

The extreme fragility of green beans does not permit long transport times, so all production of green beans for export takes place within a 45 kilometer radius of Bamako, where the airport is located. Approximately 40 hectares are put into green bean production in each growing season, with about 1,200 families participating in the cultivation per season.

Although at one time (1987 - 1989) there were as many as 13 fruit and vegetable exporters in Mali, there are currently only two principal exporters. The largest share of the market is controlled by FRUITEMA, which captured 80 percent of total green bean exports in 1990. FRUITEMA is a parastatal company founded in 1981 with government and French institutional capital. The company is in the process of being privatized, with private Malian investors now holding 55 percent of share capital, and French management turned over to a Malian company in late 1990. The other player is Continental Transit, which entered into fruit and vegetable export in 1989, and captured 20 percent of green bean exports in 1990. FRUITEMA employs 40 full time staff in addition to management, and 70 daily workers for the growing season. Continental Transit employs about 5 full time staff including management, and 45 daily workers in season.

## 2. Domestic Consumption

A limited number of types of participants exist in the domestic supply channel. At the bottom are the seed importers and distributors. There are a number of companies selling seeds on the local market, although one newcomer, Nakoshi, has already captured 1/3 of the total market which is currently estimated at 50 million CFA/year. Nakoshi is now the sole representative in Mali of the French company, Vilmorin, which seems to be the single largest seed supplier in Mali. Many farmers, however, continue to produce their own seeds from previous crops.

The main actors in the system are, of course, the producers themselves. It is estimated that there are a total of 8,000 hectares of land under vegetable cultivation, 7,000 primarily in the Haute Vallee and the Office du Niger, and 1,000 in Bandiagara. With an assumed average area/family of 0.20 hectare in the southern part of the country, and 0.06 hectare per family in Bandiagara, it is estimated that there are 51,000 fruit and vegetable gardeners (maraichers) in Mali. This same group of producers supplies all channels with vegetables.

Producer sale prices vary widely depending on the vegetable and the season. Producer prices for tomatoes range from 40 CFA/kilo in peak season (January through March) to 150 CFA/kilo when few tomatoes are being grown (June through August).

The next vertical function is marketing of the product. Perishable vegetables are generally sold within a 30 to 50 kilometer radius of their point of production. Although some vegetables are sold at the local village level, most are sold in urban areas. Assembly points exist at each of these levels. At the village level, these are the weekly "foires". In principal regional towns, these are a permanent market place, as well as weekly or bi-weekly large market days. In Bamako, there are two types of assembly points. There are the large retail vegetable markets, in the Grand Marche, Dibida, and Medina Coura, as well as numerous smaller markets at the "quartier" level. In addition to these market places, there are wholesale markets where trucks arrive on a given day of the week to off-load produce from near-by smaller town markets.

Some producing families do market their own vegetables directly. However, they can only do this at market places reasonably close to their gardens. Producers in remote villages will generally not attempt to move their product farther than the local village market. Usually, only producers located within 5 to 10 kilometers of a major urban center will take their produce to the urban market.

The large majority of actors in the marketing phase are therefore the merchants. In the marketing of perishable vegetables, most of these merchants can be defined as retailers by virtue of the relatively small quantities they buy and sell. Merchants who could be defined as wholesalers are those who buy directly from numbers of producers, and sell in turn both to other retailers and directly to the final consumer. "Wholesalers" either go directly to the fields to purchase the vegetables, or buy in bulk from the producers who come to town with their produce. Retailers buy either from these wholesalers or directly from producers as well, and in turn sell directly to the final consumer. Although impossible to estimate with any accuracy, there are tens of thousands of vegetable merchants operating in Mali.

Market prices to the final consumer also vary according to the product, the season, and who is selling. The following table shows producer and final consumer prices for tomatoes, in peak and low seasons:

	Peak Season (Jan-March)	Low Season (Jun-Aug)
Producer	40 CFA/k	150 CFA/k
Merchant mark-up	60 CFA/k	55 CFA/k
Consumer	100 CFA/k	205 CFA/k

Two channels also exist in non-perishable vegetable production and marketing (sub-sector map 2).

### 3. Domestic Consumption

The importance of seed importers and merchants are negligible in non-perishable vegetables, particularly for onions. Most of the onions grown here are the "echallotte" type. Producers typically hold back a portion of their crop, to replant as seed onions the following season.

As mentioned previously, the main actors in vegetable production, both for perishable and non-perishable products, are the producers. Although it is known that the 16,000 farming families in Bandiagara produce mainly onions, it is not possible to determine the percentage of the overall estimated 51,000 farmers which concentrates on non-perishable vegetables.

Producer prices for onions vary widely with the season, as do tomatoes. Prices range from about 50 CFA/k in the peak season (February and March) to 140 CFA/k in the off-season (August to November).

Marketing of non-perishable vegetables differs slightly from that of perishable vegetables. Non-perishable, or less perishable, vegetables such as onions can and are moved much farther away from their point of production. Thus, the general movement of onions is from village, to regional town, to Bamako, through the same assembly points described in Section III.C.2.

In addition to the producers and retailers who participate in the marketing of perishable vegetables, true wholesalers intervene in the marketing of onions. Most wholesalers are based in Bamako and maintain contacts with much smaller wholesalers, and sometimes producers, in regional towns. There are estimated to be between 15 and 30 onion wholesalers in Bamako, being supplied from the Niono and Bandiagara regions. These wholesalers generally sell to distributors, who in turn sell to retailers and final consumers alike.



The following table shows onion prices and mark-ups from the producer to the final consumer level, during peak and low seasons:

	Peak Season (Feb/March)	Low Season (Aug-Nov)
Producer	50 CFA/k	140 CFA/k
Wholesaler mark-up	40 CFA/k	45 CFA/k
Retailer mark-up	35 CFA/k	40 CFA/k
Consumer	125 CFA/k	225 CFA/k

#### 4. Regional Export

The channel for export of vegetables, primarily onions, to neighboring countries (particularly Cote d'Ivoire) is virtually the same as for the domestic channel, through the first half of the process. Here, however, the wholesalers specialise in export.

These exporting wholesalers buy either directly from producers, often placing specific orders, or from an intermediate wholesaler. Most onions exported seem to come from Niono and Bandiagara and transit through Sikasso, where most exporters seem to be based. As mentioned previously, there are apparently a number of importers from neighboring countries who come to Mali themselves to purchase onions. The percentage of this export market actually captured by Malian wholesalers is not clear.

## IV. ENTERPRISE DEVELOPMENT AND DYNAMIC FORCES

### A. Enterprise Development

#### 1. Production

Although essentially an agricultural activity, vegetable production and marketing can be considered a microenterprise when done as a cash crop activity.

Farmers producing green beans for export can expect to harvest an average of 7 tons of beans per hectare (with 100 kilos of seeds). Given the average assumed cultivated area of 0.25 hectares, the yield per producer would be 1.7 tons. At a net selling price of 40 CFA/kilo, the average producer could expect to earn about 70,000 CFA over the 3 month growing season, or 778 CFA/day.

Although difficult to determine accurately, a family producing vegetables probably achieves a net profit on the order of 80 percent, and an average daily return to labor of 500 CFA.

Most farmers undertake vegetable production as an off-season, cash crop activity. Little additional investment is therefore necessary. Farmers are maximizing investments made in relation to the primary agricultural crop, rather than investing in new material. Other than initial outlay for inputs, the main investment is digging a well, which requires labor time rather than cash outlay. Producers cultivating larger parcels of land in vegetables (often as a primary activity) usually need to invest in a pump and pipeline system. The investment needed in material and 3 month's working capital for 1 hectare of land, using a motorized pump, is 2.0 to 3.0 million CFA (1-1.5 million for working capital, and 1-1.5 million for fixed investments).

The entire marketing system in the subsector seems to be based on credit. Many farmers have no choice but to provide produce to merchants on credit. Merchants are supposed to pay the producer upon sales, within 1 day to 1 week. However, many producers complain of merchants who do not honor their obligations, presumably because they were not able to sell the produce at a profit. Farmers can sustain substantial losses in this way.

It is commonly perceived, especially among the NGO and donor community, that vegetable production is a women's activity. Findings in this study would indicate, however, that women's control of production is much less than assumed. It is estimated that women control 30 percent of vegetable production, at best, although they are a primary source of labor. Male heads of households are perceived to own the land and planting is a man's domaine. When cultivation is extended to vegetables, this same pattern seems to hold true. At the producer level, women do participate in the marketing of vegetables, to the extent that they take produce to markets on behalf of the male head of household.

## 2. Local Commercialisation

Merchants are the prime moving force in the system. They provide the capital necessary for bulk purchase and transport of the product. Commercialisation is the most clearly-defined microenterprise activity in the subsector.

Because of the many levels of retail merchants, it is difficult to produce average levels of sales, net income, and return to labor for this activity. The smallest retailers may earn as little as 50 CFA/day for 12 hours of work. Larger merchants, although earning a smaller margin per kilo, turn over much larger volumes of product, and therefore can earn considerably more per day.

There is little to no investment in fixed assets required in the commercialisation phase. The level of permanent working capital required can, however, be important, and varies according to the level of activity. The average level of working capital necessary for an onion wholesaler is 200,000 CFA, assuming purchases of 1.2 tons at a time, with at least 50 percent of sales being made on credit. The amount of capital can be much higher than this for more expensive products, such as dried onions and dried okra. Retailers and smaller wholesalers of perishable vegetables, on the other hand, often enter the activity with no money, procuring initial stock on credit. Those retailers who have been able to start their activities with a small amount of savings are able to continue to buy and sell larger volumes at a time. The very small retailer beginning on credit will probably never achieve an appreciable volume.

There are tens of thousands of vegetable merchants operating in Mali. Women are very active in vegetable marketing, although at the retail rather than the wholesale level. Several factors seem to contribute to women's limited participation at the wholesale level, which is the most lucrative per person. First, few women have access to the level of capital needed to begin as wholesalers. Further, they have

little ability to accumulate the capital through their retail activities, as their profits are devoted entirely to providing for the family. Wholesaling also often requires extended periods of travel time, depending on the distance to the supply point. Women are often not able to take the time away from the home, and are not encouraged to do so by their husbands. Finally, wholesaling of non-perishable vegetables (such as onions) seems to operate as a sort of "old boys network", at least in Bamako. New entrants are not encouraged, particularly not women wanting to compete for this lucrative market. At the various levels of retail activity, however, women dominate, probably representing at least 90 percent of the participants. Again, this is primarily because no initial capital investment is necessary, little male competition exists for the market due to extremely low returns, and it seems to be a socially acceptable activity for women.

### 3. Transport

The type of transport used differs for perishable and non-perishable vegetables. Perishable vegetables are generally not transported for long distances, and a variety of small transport means are used. From farm to market place, producers often use their own carts or motor bikes. When available, and depending on the distance, small trucks (bachees) are used. Although owning a bachee is a small business in itself, and women are known to participate in this activity in Bamako, further study is needed on its profitability and growth potential.

Less perishable vegetables, such as onions, are hauled over long distances in 10 to 40 ton trucks. Little information is available on the ownership and costs of operating these vehicles.

### 4. Conservation

Traditionally, vegetables have been dried by individual producing families as a necessity. To our knowledge, vegetable drying is not currently being undertaken as a primary enterprise.

Appropriate drying technologies have been tested and introduced in Mali, through such projects as the Canadian CECI and the GTZ project in Bandiagara, although dissemination does not yet seem to be wide-spread. Solar dryers are currently being marketed by the Canadian project in Kati. The principal investment needed for the activity is a dryer. A medium capacity solar dryer is available for 55,000 CFA. Dryers with a 150 kilo capacity, requiring an electric ventilation system, sell for 1.5 to 2.0 million CFA. As these dryers are only now being disseminated on a larger scale by the project, the costs and profitability of establishing a vegetable drying business have not yet been calculated. Further study is called for on this subject, as it would seem to be a prime opportunity for the creation of new businesses.

Drying has traditionally been a women's activity. The extent of their possible participation in enterprise development at this level is difficult to determine, but should be pursued. One opportunity may be to assist some current retailers, earning relatively little money, to move into vegetable drying.

### 5. Export

Currently, there are only two principal actors at the export level, both large companies. No microenterprise activity exists, nor is it likely to.

The investment required in equipment such as trucks and a refrigerated room at the airport is large. In addition, a large amount of permanent working capital is necessary, primarily due to the length of accounts receivable, up to 3 months with European importers.

Although the acting PDG of FRUITEMA is currently a woman, women's control of and participation in vegetable export is nil. Mango exports were not looked at in this study, but women's participation in that activity is important. However, they are only active in the collection of mangos and their transport to Bamako. The large investment required, the lack of adequate infrastructure, and the high level of risk are effective barriers to entry for microenterprises, and therefore for women.

## **B. Driving Forces**

### **1. Access to Water**

The single largest problem cited by producers and providers of technical services in all regions visited is the lack of water, or adequate supply of irrigated land. Vegetable production is done as an off-season, secondary, activity to complement the primary cereal production activity. The growing period for vegetables is currently limited to the dry months. However, water is not readily available for part of this season, especially toward the end (from February through May) when primary crop planting recommences. In some areas like Bamako, where producers are situated close to a constant source of water (the Niger), they seem to produce vegetables almost year-round as a primary activity. The direct result of this lack of water is market saturation for the short growing period. All perishable vegetables arrive on the market at the same time, driving prices to extremely low levels.

Methods of accessing water are generally rudimentary and extremely labor-intensive. The usual method of watering vegetables is to draw water by hand from hand-dug wells, and then carry it by hand to the vegetables. The use of intermediate technology wells, although being promoted by some NGO's such as the Association des Volontaires Francais pour le Progres, and AETA, is currently minimal.

### **2. Input Constraints/Access to Information**

At the producer level, lack of information about improved inputs and appropriate growing techniques is a problem, leading to reduced crop yields. Extensive testing of appropriate seed varieties resistant to dry weather and pests has been undertaken, for example, by the Section de Recherche Fruitiere et Maraichere. Although improved seeds are available on the market, many producers do not seem to be using them. It seems this is due to both a lack of information and the inability to pay for seeds. Many producers also tend to specialise in one crop, planting it over and over. Rotation of crops is essential, however, to efficient vegetable cultivation.

At the export level, supply of packaging materials has become a major blockage. Previously, cartons for packing green beans were exported from Senegal. These cartons were of a high quality and cheaply priced due to government subsidies. Importation of cardboard cartons has now been banned to protect the single Malian producer. Exporters now have no option other than to purchase local cartons at an inferior quality and higher price.

### 3. Demand

European vegetable imports are substantial compared to Mali's production capacity, although the EEC import market for green beans does not seem to be growing. In addition, the period of highest demand in Europe for imported green beans corresponds to the season in which all African countries are producing. All produce therefore arrives on the market at the same time, lowering what are otherwise attractive prices. Due to climate, green beans can only be grown in Mali between November and February. Prices in France, however, rise from a low of 10 French francs/kilo in late January/early February to almost 30 francs in March and April.

Vegetable exports to neighboring countries is clearly important to Mali within the subsector, particularly the export of onions to the Cote d'Ivoire. Given that Niger exports 3,000 tons to the Cote d'Ivoire per year, compared to Mali's 490 tons, Mali should be able to capture a larger share of this market.

### 4. Access to Markets

Several factors inhibit Mali's equal access to European markets. First, the lack of consistent and appropriate means of transportation are a major inhibiting factor. Produce must be transported by air, but choices of carriers are limited. Most produce is shipped through Air Afrique and UTA. Produce is loaded onto passenger planes in small quantities only when space is available, so that this is not a reliable means. Also, only one of the regular flights arrives in Paris in time for the following day's market. The Air Afrique cargo planes also stop in Conakry or Dakkar, and again Malian exporters cannot be assured of adequate space.

As mentioned earlier, Malian exporters are also facing unfair competition from neighboring countries which heavily subsidize their own export activities. With only two enterprises currently exporting, there is no collective voice or bargaining power available to local exporters.

A major constraint in a rational, systematic commercialisation of vegetables in the domestic market is the lack of an adequate transportation infrastructure. There are few roads in the good condition necessary for the transport of perishable and fragile products. Further, there is a particular lack of roads between producing and non-producing regions of the country. Finally, there are no commercially-owned refrigerated trucks being operated. This lack of adequate transportation contributes to the saturation of markets on a regional level.

### 5. Government Policy

The Government of Mali effectively controls most agricultural production. Its agricultural development policies bear directly on the possibility of growth within the vegetable production subsector. For example, in the Office du Niger, government has enforced rice cultivation as the major agricultural activity through its control of water supply. Now that "maraichage" is being recognized as an attractive complement, and even alternative to, rice cultivation, the Office du Niger is beginning to promote it in the region. Also, the government directly promotes vegetable production through its existing permitter at Baguineda. A second permitter is being planned for Bafoulabe in the Kayes region.

## 6. NGO/Donor Intervention

Among its members, the Comité de Coordination des Actions (CCA-ONG) counts 79 NGO's carrying out 189 different projects relating to maraichage. The goals of most of these projects are to improve nutrition and to provide sources of supplemental income. Various types of projects are carried out, including technical training, supply of inputs, credit programs, research on markets for non-perishable products, and the creation of associations and cooperatives to assist producers to market their vegetables. Most projects have focused on women as their primary beneficiaries, both in gardening for family consumption and for additional revenue generation. The overall impact of NGO and donor intervention in the sub-sector has been to stimulate production. The promotion of women's gardening activities for family consumption purposes contributes to a decrease in the overall commercial market. The promotion of gardening as a source of supplemental income is increasing the number of farmers with excess produce to sell, which further exacerbates the problem of market saturation.

## V. OPPORTUNITIES FOR SUBSECTORAL EXPANSION

### A. Irrigation and Water Systems

Increasing the availability of water to producers over a longer period of time would enable them to increase the currently restricted growing period by several months. An opportunity therefore exists for investment in water supply infrastructures, such as digging deeper wells, and building small dams and irrigation systems. Opportunity also exists in disseminating information, promoting the use of, and financing, intermediate technologies in pumps, such as treadle and animal traction pumps.

### B. Increasing Markets

An opportunity exists for expanding the export of fresh vegetables to Europe, both through increasing the current green bean production and introducing new export crops. As Mali's current exports of green beans represent only 1 percent of total EEC imports, there is ample room to expand exports without affecting market prices. Adequate credit lines would have to be established within commercial banks to support the expansion of the existing exporters' activities, and to permit the entry of new actors.

### C. Conservation

Increased drying of products, and possibly the introduction of other conservation methods, are an important element in allowing producers to prevent losses and to generate revenue throughout the year. Conservation is not currently done as an enterprise, although some NGO projects are promoting improved methods of drying, and promoting the technology through groups and associations. Actually a traditional women's activity within the family, the possibility of assisting the development of women-owned microenterprises in this area should be pursued.

## **VI. LEVERAGED INTERVENTION**

Until the problems of access to water, and the lack of means of long-distance transport, are solved, it is not recommended that interventions be undertaken in the sub-sector which would have the effect of increasing vegetable production within the current three month growing season. The CCA-ONG can act as a leverage point to sensitize its members to the dangers of continued promotion of gardening activities.

Government agencies such as the Office du Niger, the DHV, and the perimeter in Baguineda, are points of leverage which should find ways to provide continuous supplies of water throughout the dry season, enabling farmers to extend the growing season.

Feasibility studies on vegetable drying as a new microenterprise opportunity should be undertaken by the projects promoting microenterprise development, such as the FED project and the Canadian PME PMI project. If found to be feasible, it is recommended that selected NGO's already carrying out gardening projects be selected as points of leverage to provide credit and technical assistance, particularly to women, to assist in business start-up.

With two companies now sub-contracting to 1,200 producing families, a gearing ratio of 1:600 exists. These two companies are therefore important points of leverage which could provide stable income for thousands of additional producing families in each growing season were they to increase their activities. Assistance should be provided to these exporters, particularly in access to adequate credit lines at commercial banks, to stimulate the expansion of their export capacity.

**ANNEX B**  
**AGRICULTURAL MACHINERY IN MALI**



## ANNEX B

### AGRICULTURAL MACHINERY IN MALI

#### I. RATIONALE FOR ANALYZING AGRICULTURAL MACHINERY IN MALI

Mali is a landlocked country with an agricultural based economy whose economic performance has been affected negatively by drought and the declining world price of cotton. Agriculture, the primary sector, accounts for about 50 percent of the GDP and employs more than 90 percent of the active rural population, or about 78 percent of the total population. Because important linkages exist between farm machinery and agricultural production, expansion of this subsector naturally plays an important role in increasing production of the primary sector.

The economic potential of the farm machinery industry is a direct function of cost. Thirty-three percent of farmers cultivate in zones managed by an agricultural service or parastatal<sup>1</sup>. However, only 33 percent of farmers use animal traction.<sup>2</sup> Assuming that animal traction could be profitable for at least some of the remaining 67 percent, lack of access to consumer credit prevents them from entering the market.

The 1987 census identifies more than 1800 artisans employed as traditional blacksmiths as their primary activity, with about 130 women<sup>3</sup>. It is important to note that recent census figures from Burkina Faso identify 18000 people employed as blacksmiths, the actual number in Mali is likely to be as high. With the emphasis on "action foregeron" by most of the parastatally managed zones and the current restructuring of SMECMA<sup>4</sup>, potential greater value added could be captured by the more than 2300 microenterprises headed by traditional and modern blacksmiths.

For this study we defined farm machinery as the tools and implements used as inputs to agricultural production, in particular land preparation. Using that as a guideline this analysis is restricted to the most commonly used agricultural machinery as inputs for agricultural production. Specifically, a cross-section of hand tools such as dadas; animal traction equipment such as ploughs and tractors.

The purpose of this analysis is to generate a greater understanding of the opportunities and constraints facing subsector participants. The following discussion will present the market for Mali's ag machinery, and the channels leading up to supply those markets. A discussion of the dynamics of the subsector, as well as the dynamics of the development of the individual enterprises, will lead us into a series of possible leveraged interventions to stimulate this important subsector.

---

<sup>1</sup>Grant study 1988

<sup>2</sup>From the Division of Machinisme Agricole, DMA 1985-87 Synthesis of Activities.

<sup>3</sup>However, our field studies did not reveal any female participation.

<sup>4</sup>SMECMA is the parastatally managed industrial producer of animal traction equipment.

## II. MARKETS FOR AGRICULTURAL MACHINERY IN MALI

The annual value of the overall market for ag machinery used for land preparation in Mali is crudely estimated at 7.7 billion cfa. The market is divided into three segments; hand tools, animal traction and motorized equipment.

### A. Hand Tools

Sixty-six percent of primary sector output is generated by traditional (daba) agriculture<sup>5</sup> thus, in terms of volume the hand tools market far exceeds the other two. Practically every household in Mali has at least one daba and probably more. However, its very difficult to estimate the market demand for dabas used in ag production. Estimates<sup>6</sup> indicate that there are approximately 505,000 ag producing groups (exploitations) that possess several dabas, picks, hoes, shovels and machetes. Including annual repairs and renewals, the annual value of the market is estimated at 4.6 billion cfa. The demand for hand tools will likely increase as the number of exploitations increase. Local production generated by both traditional and modern blacksmith is sufficient to meet annual demand.

### B. Animal Traction

As indicated above about 33 percent of farmers use animal traction equipment. The most commonly used implements are the plough and the multicultureur (plough with a weeder). The demand is greatest in the cotton producing zones of CMDT and OHV where the adoption rates average at least 65 percent. At a minimum, a farmer must have at least 4 hectares and cultivate a cash crop, or an alternate source of income, to generate the cash needed to pay for the equipment. Other factors, such as the availability of credit, draft animals, extension services and cash for a down payment, influence the farmers decision to adopt animal traction.

Farming systems research in Mali indicates that under a cash crop scenario the use of complete oxen technology (oxen, plough and weeder) is highly profitable.<sup>7</sup> However, the annual placement of animal traction equipment by the extension services has been steadily declining, see table below. It is important to note that since the 1983/84 liberalization of groundnuts, ODIPAC the parastatal that commercialized groundnut production, no longer extends credit to groundnut producers on the same scale. However, because the extension services are not the sole distributors of animal traction equipment, it is difficult to assert with certainty that overall sales are declining. In addition to ploughs and multicultureurs, there is a steady market for seeders, harrows and animal drawn carts. The value of this market is estimated to be 2.1 billion cfa annually. More than 85 percent of annual demand is met by local artisan and industrial production. The greatest potential for growth and value added in this market lies in repairs and spare parts. In the 1988/89 season SMECMA reported spare parts sales of 370 million cfa, up from 115 million in 1987. CMDT reports that 20 percent of the modern blacksmiths total revenue in 1990 was

---

<sup>5</sup>From DMA 1985-87 synthesis.

<sup>6</sup>Flash statistiques 1990

<sup>7</sup>Several studies on the profitability of animal traction have been undertaken. See Akinwumi Adesina in bibliography.

attributed to the production of spare parts. There is significant potential for microenterprise development in this market.

ANNUAL PLACEMENT OF ANIMAL TRACTION EQUIPMENT\*

	1986-1987	1987-1988	1988-1989
Multiculteur	3513	2078	1586
Plough	3505	2318	2264
Seeder	2983	2509	2688

### C. Motorized Equipment

After the 1988/89 season there were 1362 tractors of varying sizes and states of disrepair in Mali (DMA/DNA, 1985-1989). The demand for tractors is region and crop specific. Most are found in the Office de Niger (ON) zone where paddy rice is the principal crop. CMDT, the cotton parastatal is the other principal user. At most, tractor usage for land preparation in Mali is between 1 and 2 percent of total land cultivated, and according to ON, declining. In addition to maintenance and spare parts, rice farmers in the ON zone complain that the tractors are too big and heavy causing the soil to compact and diggettes to break. DMA reports that for 1985 and 1986 only nine bids for tractors were made in the entire country. The Massey Ferguson (MF) dealer sells anywhere from 2 - 10 tractors per year. This does not include illegal or unofficial imports which according to the MF dealer are increasing.

Despite the prohibitive price of tractors (2 to 10 million cfa) in Mali, there appears to be a private commercial market for tractor services among the poorer farmers who do not possess oxen or donkeys. Unemployed graduates and retired civil servants who find it easier to apply for loans go into the business of laboring fields for commercial gain.<sup>9</sup> The market for tractor services will likely diminish as the agricultural services are changing their philosophies on the appropriateness of tractors for malian soils. In addition to tractors, the motorized equipment market including mills, thresher, pumps, etc. is estimated to be anywhere from 1 to 2 billion cfa per year.

---

\*Source: DMA (1985-87) and DNA (1988/89) annual numbers reported by the extension services.

<sup>9</sup>A typical farmer in the OHV region pays 12,500/ha to have his field labored with a tractor; and 10,000/ha using animal traction. Additional costs (spraying, etc.) are incurred if the tractor is employed. The average exploitation is between 4 to 5 hectares.

85

### III. STRUCTURE OF THE AGRICULTURAL MACHINERY SUBSECTOR

#### A. The Subsector Map

As discussed above this analysis is restricted to the ag machinery products typically used in Mali. Specifically, dadas, ploughs, multiculteurs and tractors. This subsector analysis traces the progressive set of activities that lead to the production and sale of ag machinery in Mali. In addition to the actors in the industries themselves, various researchers, ag extension services, ONG's, and middlemen play an important role through out the vertical system. The schematic design, subsector map, on the following page lays out a visual depiction of the interaction between the artisanal and industrial producers of ag machinery. A description of the functions and alternate supply channels will follow.

##### 1. Functions

Vertically, the map traces the flow of products from the procurement of raw materials through the functions within the different supply channels to the final consumer. The functions include: raw material supply; component production; fabrication and assembly; product distribution retail sales and credit. Wholesale distribution is implicit in most channels but is relatively small. Most of the supply channels for ag machinery in Mali are vertically integrated.

##### a. Research

The DMA is responsible for researching, developing and testing new ag machinery in Mali. Ideally DMA works in collaboration with the workshops in channel 4, and SMECMA channel 5. The private importers in channel 6 should also collaborate with the DMA.

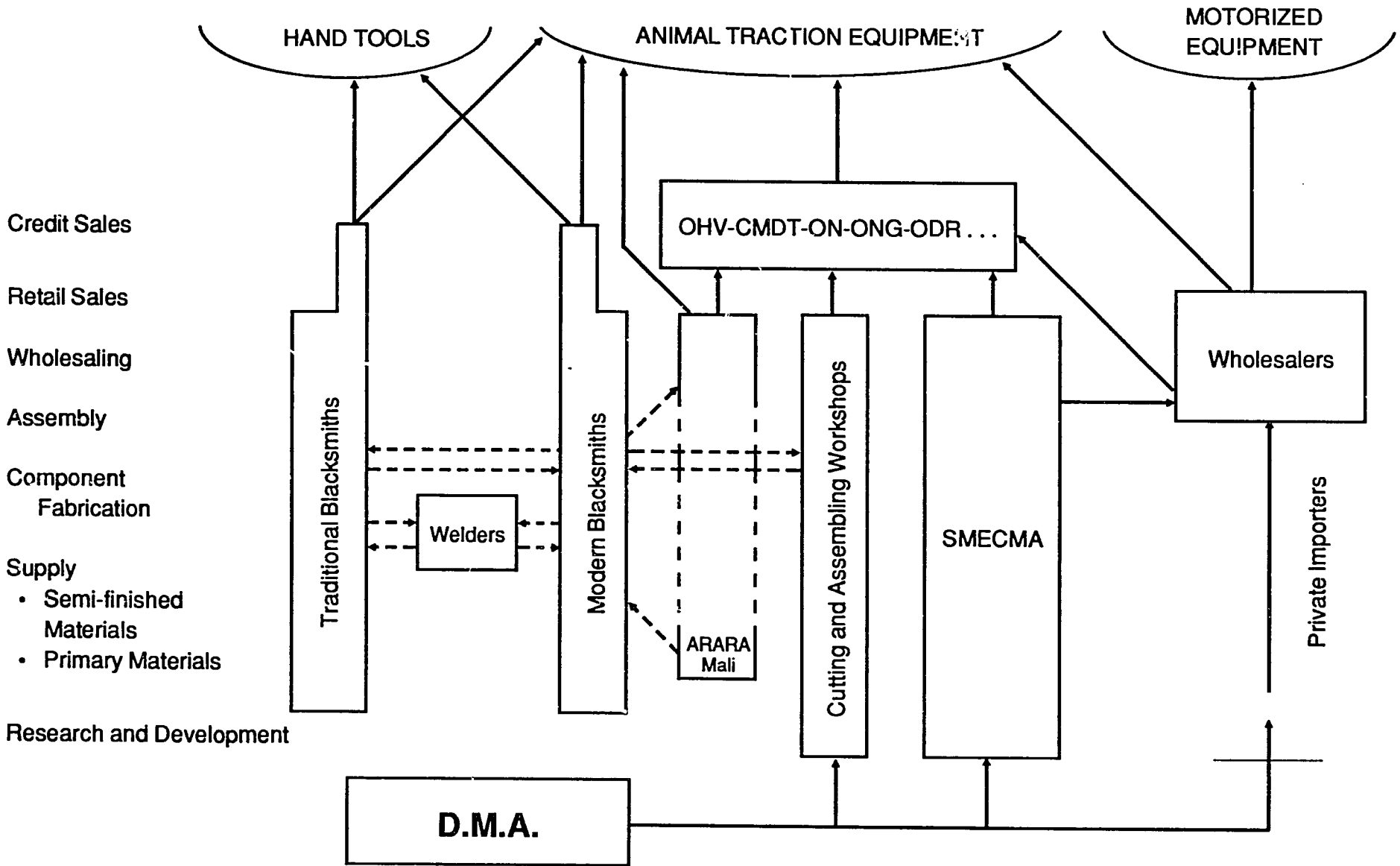
##### b. Raw Material Supply

The essential raw material for all agricultural machinery production is iron. Supplies for the different channels varies from domestic scrap iron to imported iron bars to semi-finished (components) to completely assembled imports. It appears that at least 4/5 of the producers employ scrap or imported iron. Iron is sold in all shapes, sizes and weights. A typical price is 200 cfa/kg in Bamako. Ploughs require approximately 20-30 kilograms of iron. Most of the iron and semi-finished components come from Holland, and much of the completely assembled material comes from SISMAR in Senegal.

##### c. Semi-finished Components

Semi-finished components are prefabricated parts that require welding and finishing. SMECMA and ARARA-Mali often import semi-finished parts. During the 1989 - 1990 season, ARARA produced via subcontract and in collaboration with OHV, 50 plows, 200 multiculteurs, 200 seeders and 175 TRP using semi-finished components.

# AGRICULTURAL MACHINERY SUBSECTOR MAP



18

#### d. Production

This function is where the transformation of raw material and components come together via cutting, welding, drilling, painting, etc. to form the final product. At this level differences in technology which determine the quality of the final product become apparent.

Production technology varies widely among the alternate supply channels. SMECMA is industrially based whereas the workshops in Niono, Koutiala and those privately owned and operated by blacksmiths are not. It is important to signal that the level and quality of equipment of these various producers differs and categorizes them as artisanal or industrial.

#### e. Assembly

Assembly consists simply of screwing the parts together to form one complete unit. The private importers of both tractors and some animal traction equipment perform this function.

#### f. Sales and Distribution

Direct sales and distribution occurs in all channels. In channels one and two, blacksmiths in urban and some rural areas sell large quantities (10-20 units) to individual villagers who in turn distribute locally. Intermediaries such as the ONG's and extension services intervene in Channels 2, 3 and 4. These organizations purchase either direct or via contract from the producer and provide credit, training, distribution or other services to facilitate movement of products from the producer to the final consumer.

#### g. Consumer Credit

The final function in the vertical system is credit. Consumer credit though limited, is given in channels 1 through 4. Both the traditional and modern blacksmith sell anywhere from 30 to 60 percent of their sales on credit. The producers in channels 3 and 4 do not give credit themselves, but the intermediaries that distribute their product often provide credit services.

There is a significant amount of subcontracting occurring in this subsector. Primarily modern blacksmiths are contracted to produce X units for an ONG or an agricultural service. Unequipped and untrained traditional blacksmith subcontract out their welding needs.

## 2. Coordinating Mechanisms

The map contains six principal production channels which are described below in section III C. The different actors at each stage of the production are linked to the next stage. This is depicted in the map with the following symbols: Solid lines represent the direct sale of a product; and dotted lines represent subcontracting.

An elongated box depicts vertical integration within a channel, when individual firms or households perform a series of functions. In the case where a firm subcontracts out an activity, but still maintains control of the product, the sides of the box are drawn with dotted lines.

## B. Technology of Production

The technology employed by the alternate suppliers, with the exception of tractors, depends on the level of training, and use of inputs namely raw material or semi-finished pieces. The technology of cutting, forging and welding iron varies among the different channels.

### 1. Cutting

Both the traditional and modern blacksmith perform this operation using burins and manual shears. Modern blacksmiths sometimes have access to mounted shear that costs considerably more than the manual shears. At the industrial level, cutting is achieved using drills, chain saws, and borers.

### 2. Forging

In general forging technology is identical for the traditional and modern blacksmith. The tools used to forge or shape the hot iron consist of locally fabricated hammers, anvils, pliers and a forge. The forge employed by the traditional blacksmith is made using local materials such as wood, mud, canaries, and animal skins. The blowing apparatus (soufflet de forge mecanique) is mechanical in the sense that its pedaled like a bicycle to generate air for the fire. Because of its ability to generate intense heat, the soufflet is being used more and more by the traditional blacksmith. This same type of forge is used for making spare parts at the industrial level. SMECMA employs hydraulic presses to forge the remaining products.

### 3. Welding

The technology and capacity to weld is the principal difference between the traditional and the modern blacksmith. Generally speaking, welding technology for the modern blacksmith is identical except for welding capacity, size and number of machines, to that at the industrial level. There is no evidence that suggest the quality of industrial welding is superior to the modern blacksmith. Welding equipment cost more than one million cfa.

## C. Alternate Supply Channels

There are six channels serving the hand tools, animal traction and motorized equipment markets. The first two channels serve the market for hand tools, in both urban and rural areas. Channels two through six compete for the animal traction market. These channels are comprised of one large producer, SMECMA, five medium-sized producers and importers and about 2326 microenterprises. Channel six, the private importers, serve the motorized equipment market.

### 1. Traditional Blacksmiths

This channel is vertically integrated from the supply of raw materials to production to distribution. The scrap iron is usually scavenged from old vehicles or old train tracks. Because of the traditional technology employed it takes a great deal of time and effort to produce an implement of

acceptable quality. Only a small portion of their production is done using imported higher quality iron. In fact, most will not attempt to use imported iron unless scrap metal is not available. Most of these blacksmiths are illiterate and find the idea of applying for credit completely out of reach. Therefore, their working capital fund is near zero. This is also complicated by the fact that they tend to sell a high percentage on credit.

Their clients are local farmers constrained by distance and occasional middlemen who purchase large quantities to take back to their villages. Their market is comprised of price sensitive clients who prefer to spend 20,000 cfa on a plough that probably breaks before the season ends instead of 30,000 cfa on a plough of higher quality. The largest part of their market is for dabas, though they produce ploughs, seeders (one piece is purchased from importers), multicultureurs, watering cans and other small hand implements.

Located in both rural and urban areas there are roughly 1861 traditional blacksmith enterprises operating in Mali. They represent approximately 76 percent of the total blacksmiths in Mali. Their paucity of working tools and formal training has forced them to rely on the more modern blacksmith for welding.

## 2. Modern Blacksmiths

Channel two represents the modern blacksmith, like channel one, it is also vertically integrated. Raw materials are supplied by local distributors of scrap iron or importers of higher quality iron. Subcontracting between modern blacksmiths and their regional extension services or NGO's is prevalent in this channel. In this case raw materials or semi-finished components are provided to the blacksmith from the service. The blacksmith transforms the raw material into the final product which is distributed by the service. The producers in this channel mainly use family labor and apprentices to produce low-medium-high quality product, depending on the quality of raw material employed. It is important to note that although the modern blacksmith possesses the technical skills to produce a high quality product, he may not possess the equipment, particularly the welding set to actually do so. It is estimated that less than 20 percent of the 465 modern enterprises are actually equipped. Forward integration into retailing occurs in channel two as well as channel one. Blacksmiths working on contract are assured of a market if their product meets the standards set by the subcontractors. Figures from CMDT indicate that 24 percent of the equipped modern blacksmiths total revenue comes from subcontracting.

## 3. Private Workshop and Importer

ARARA, created in 1986 as a private importer and distributor of animal traction equipment namely, ploughs, multicultureurs, seeders, and carts is depicted in channel three. To reduce costs and increase sales, ARARA changed its philosophy, by integrating backwards into raw material distribution, in this case semi-finished components from Holland. Production and assembly of the final product is accomplished via subcontracting agreements with modern blacksmiths in the OHV and CMDT zones. Blacksmiths on contract are provided with all major inputs<sup>12</sup> except, charcoal, welding rod and gasoil. In 1990 ARARA signed a 37 million cfa contract with OHV to provide 625 units of animal traction equipment. Eighty percent of the final products from this channel are distributed through OHV.

---

<sup>12</sup> Standard inputs exclusive of labor include iron, paint, bolts, charcoal, gasoil and welding rod.



#### 4. Public Workshops

Channel three and four operate in a similar manner. The principal difference is that one is private and the other is public. Through Dutch technical and financial assistance, the two major workshops in Niono and Koutiala<sup>13</sup> are vertically integrated and equipped to supply various kinds of animal traction and motorized equipment. The workshops are supplied with raw materials from the Netherlands which pass through either one of two paths. The first is complete integration at the level of the workshop where all production and distribution occurs. Semi-finished components that are furnished to local modern blacksmith who perform all the necessary functions except distribution make up the second path. If the quality of the final product is acceptable then the blacksmith is paid a certain sum per unit. The workshops integrate backwards into research and raw material distribution, and integrate forward into retail distribution of the final product at the village level. Boutiques that sell spare parts are set up in strategic locations. The clientele is comprised of local farmers, ag extension services and NGO's. These workshop also do research and development in collaboration with DMA.

#### 5. SMECMA

SMECMA, Societe Malienne d'Etude et de Construction du Materiel Agricole, the local parastatal responsible for manufacturing agricultural equipment is currently in the process of restructuring and privatizing. Created in 1974 SMECMA, sought to provide the rapidly growing rural population with inexpensive equipment required to increase agricultural productivity. Vertically integrated, it imports raw materials and semi-finished components. It produces and sells a wide range of animal traction equipment, namely ploughs, multiculteurs, seeders, carts and harrows. Historically SMECMA maintained strong communication links with DMA, which field tested all of the equipment produced by SMECMA before bulk production began. With the help of government subsidies it devoted one percent of its annual sales to research and development.

The installed capacity of SMECMA is 34,000 - 45,000 per year, however, its actual production is considerably lower, 6000 (1990 figures). By erecting various market barriers (import licenses) SMECMA had a monopoly on the animal traction market from 1974 to 1982. It distributed its products through SCAER, Societe de Credit Agricole et Equipement Rural, and until 1982 it had about 95 percent of the market. Since 1983 SMECMA has experienced a progressive reduction in sales due to late deliveries, and price increases, causing demand to exceed supply. The CMDT which accounted for 70 percent of SMECMAs sales withdrew and began to adopt a new approach to equip farmers, namely the "Action Forgeron" program. SMECMA faced with fierce competition from the modern blacksmith and the public workshops has seen its market share plummet from 95 percent to roughly 35 to 50 percent.

#### 6. Private Importers

The final channel depicts the private importers and distributors of animal traction and motorized equipment. These importers import completed units and perform minor assembly in country. There are approximately four importers and several traders who engage in this activity. Distribution occurs primarily from Bamako, although one importer does have a magasin in Kayes. Clients for this channel range from individuals who purchase single and bulk quantities, to village associations, to NGO's.

---

<sup>13</sup>There may a third workshop in Sikasso.

In reference to the animal traction market, the six channels differ chiefly by location, quality of product and income of final consumer. The traditional and modern channel serves the low income village customer. The products are usually inferior and often require repair several times in a production season. The progressive producers of channel 2 through 5 cater to the higher income farmer, usually cotton producers who demand and can afford a higher quality product. Competition is keen among these suppliers. A crude estimate of market shares would put channel one at 14 percent, channel two 27 percent, channel three 20 percent, channel four 2 percent, channel five 33 percent and channel six at 4 percent.

It is worth noting that most ag extension services are exempt from import tax on material designated as agricultural. Due to the OHV contract ARARA now receives tax exemption status. Private importers of complete units such as those in channel six are charged 6 percent for small equipment and 17 percent for tractors. Importers of raw material pay anywhere from 35 to 65 percent of the total value of the material in tax. SMECMA up until 1989 had tax exempt status. Apparently foreigned financed projects such the workshops are exempt from import tax liability.

#### **IV. ENTERPRISE DEVELOPMENT AND DYNAMIC FORCES**

##### **A. Enterprise Development**

The agricultural machinery subsector consists of roughly 2300 microenterprises, 5 medium-sized enterprises and one large. Two general enterprise development patterns emerge: the increasing number of modern blacksmiths engaged in subcontracting and more and more import substitution.

##### **1. Traditional Blacksmith**

Many traditional blacksmiths are looking to become modern. However, there does seem to be a significant number who will remain traditional as long as there continues to be a market for their products. They have become more reliant on the modern blacksmith for certain components. Contract welding is a variable costs for the traditional and non-equipped blacksmith. This additional cost ranges anywhere from 3600 to 5500 cfa per plough. Blacksmithing in Mali is primarily hereditary, in the three regions that were visited, every blacksmith that we interviewed had the trade passed down to him. Traditional family operations exist in both rural and urban areas. Estimates of returns to labor indicate that urban, in this case Bamako receive higher returns (3451 cfa/day compared to 834 cfa/day for rural blacksmiths. Rural producers with the exception of charcoal are subject to higher input costs. Their principal product appears to be dabas of all sizes and ploughs, amongst other auxiliary farm and non-farm equipment. The workshop is often informal and usually consist of a hangar and working tools produced by the enterprise. Investment capital is nearly zero as is working capital. The fact that roughly 60 percent of sales are on credit compounds the working capital problem. Raw materials are usually scavenged and thus the quality of the final product is poor. Fortunately for these enterprises there exist a ready market for low quality animal traction equipment. Potential for expansion is doubtful as the modern blacksmith products are of superior quality and competitively priced. In Sikasso, the price differential for ploughs produced by traditional blacksmiths and modern blacksmith is about 5000 cfa. The future market will likely be divided among consumers with high price elasticities and those consumers who are quality sensitive. See annex for typical production budget.

## 2. Modern Blacksmith

The modern blacksmith arose out of a need to place repair and maintenance technology of animal traction equipment in rural areas which was increasingly being promoted by the local ag extension services. Traditional blacksmith who showed initiative, motivation and management skills were chosen to be trained and equipped. Like their traditional counterparts, modern blacksmith suffer from a lack of working capital, often they are obligated to sell on credit or even barter.

a. **Family enterprise.** The size and quality of operation varies anywhere from 2 to 3 family employees working under a hangar to 5 to 6 hired employees working in a cement structure. Capital costs vary anywhere from 35,000 to upwards of 4 million cfa for equipment. The welding equipment with an average price of one million cfa can range from 30 to 50 percent of total investment costs. Annual gross sales including repairs and spare parts for equipped blacksmiths who supplement their income by contracting, range from 800,000 to roughly 5 million cfa. This does not include income from production of non-farm machinery items. Interestingly, a motorized grain mill is provided as part of the credit package from the services to assist the blacksmith in repaying his loan. We estimated that returns to labor for a typical blacksmith are about 5985 cfa/day, with subcontracting returns fall to 1365.8 cfa/day. These figures indicate that blacksmiths receive higher returns from direct sales, thus if those modern blacksmiths that are equipped had access to higher quality iron they could capture a higher percent of total sales.

b. **Workshops.** There are two major workshops in Mali, one in Niono and the other in Koutiala. These are groups of blacksmiths working together in a central place to produce units for CMDT and the ON. These workshops are heavily supported by local and foreign funds. The workshops though vertically integrated also engage in contracting arrangements with modern blacksmiths. These workshops operate as projects (financial and technical assistance) and as such their sustainability is dubious. The workshop in Niono with 52 employees grossed over 200 million cfa in sales in 1990. Total production costs were 192 million cfa. The shop began with a 65 million cfa investment base and has an annual working capital fund of 50 million cfa.

## 3. Private Importers

Private importers of both animal traction and motorized equipment are faced with shrinking markets as the demand is increasingly being met by modern blacksmiths. One importer of animal traction equipment complained about traders entering into the market to purchase inventory from him to supply NGO'S. It is not known to what extent this is being done. To effectively compete private importers are turning to the local market. In 1988 sales for the one importer of animal traction equipment were 72 million, 1989, 150 million and 1990 plummeted to 23 million. cfa.

## B. Driving Forces

### 1. Demand for each Market

a. **Hand tools.** Since dabas have several household as well as production uses the market will likely remain steady.

b. **Animal traction equipment.** The demand for animal traction will likely experience a slow increase in the parastatally managed zones. As mentioned above only 33 percent of arable land is cultivated using animal traction equipment. That leaves a rather large market. Profitability of animal traction equipment is a function of number of hectares and crop cultivated. Since Mali's principal cash crop is cotton, the local demand for animal traction equipment is tied to the world cotton market. Those farmers becoming more and more disenchanted with motorized equipment for paddy rice production also represent a potential market.

c. **Motorized equipment.** For the farmers who do not own oxen or donkeys motorized equipment will remain important. However, as credit becomes available those farmers are expected to purchase animals and traction equipment. Thus, in the long run motorized equipment will either remain constant or decline.

## 2. Consumer Credit

Credit is the single most important driving force in this subsector. Demand for ag machinery is directly related to the availability of credit. The main provider of credit for ag machinery are the ag services. Most loans require a group guarantee, primarily the village associations. The FED project has set up credit facilities in several regions.

## 3. Technology and Training

After credit this is the most important driving force. In fact the growth of individual enterprises is often a function of training and then credit. The "Action Forgeron" programs have trained a few hundred modern blacksmiths over the last few years. Technology in production as well as cost, explain differences in quality and range of products being made. Subcontracting arrangements between modern blacksmiths and extension services and ARARA have increased substantially.

## C. Input Supply Constraints

Blacksmiths, both modern and traditional complain about the difficulties of obtaining raw materials, and tools and equipment. The generally poor quality of final products is a function of the production technology and the quality of the raw material. Blacksmiths in the southern region claim it is cheaper (including the cost of transport) for them to come to Bamako to purchase their raw materials. Importers of iron are subject to a 35 to 65 percent import tax, thus driving the final sales price up to prohibitive levels for the average blacksmith. Until prices of imported iron are reduced the quality of final output produced by the traditional and many of the modern blacksmiths will continue to suffer. Imports of completed units are subject to only a 6 percent import

Transport of raw materials out to the village is a major constraint. The blacksmiths are obligated to pay (negotiated) by the kilogram (they purchase by the ton) which ends up being very costly. A blacksmith 30 kms outside of Bamako pay 5000 cfa/ton and purchases 20 to 30 tons at a time, three times a year. Late deliveries are also a problem.

94

## VI. OPPORTUNITIES FOR SUBSECTOR EXPANSION

The primary condition necessary for the development of the agricultural machinery subsector is the existence of markets for its goods and services. Markets in this subsector are constrained by lack of consumer credit. Growth in production faces supply constraints. As noted above the cost of imported iron is too expensive leading to a high priced implement that can not be sold. Transportation and infrastructure are also a problem.

Significant increases in disposable income and purchasing power undoubtedly is very limited, therefore there will be little demand for new goods and services, but rather a steady demand for the same goods and services. Many of the modern blacksmith are discovering new markets by adapting and modifying existing equipment. For example, many farmers complain that the ploughs are too heavy for the oxen and thus require an extra laborer to help steer the animal and the plough. The modern blacksmith can be instrumental in adapting and modifying equipment at the village level. As the demand for animal traction equipment will soon be satisfied, the market for repairs and spare parts will increase substantially relative to machinery sales. Local production of grain mills, threshers, pumps, etc offer opportunities for the blacksmith to diversify his product line. The ag machinery subsector has significant room for import substitution and local value added.

The consumer goods market offers increased opportunities for expansion of these microenterprises, currently both modern and traditional blacksmiths fabricate furniture such as metal beds and chairs, spoons, well covers and a wide array of other items.. Evidence from the Cant study suggest that furniture will be in greater demand as per-capita incomes rise, thus with proper development the blacksmith can capture part of this market. Servicing of pumps and grain mills and various other small engines are becoming a significant part of the modern blacksmiths revenue.

## VI. LEVERAGED INTERVENTIONS

The concept of leveraged interventions is a fundamental element in the subsectoral approach to economic growth. This concept rests on the fundamental question of how to get the greatest impact with available resources. Leveraged interventions are those which reach the greatest number of participants at the lowest cost. Leveraged interventions in the ag machinery subsector focus on credit, producer prices, price of raw materials and a federated association for blacksmiths.

### 1. Consumer Credit

Credit is available to blacksmiths to assist them in expanding their production. However, in a country with very little disposable income, individual consumers find it difficult to pay for ag machinery therefore, accessibility to consumer credit is critical in assuring a viable market for ag machinery. The ag extension services should increase their efforts to provide consumer credit.

### 2. Government Policy

Since most users of ag machinery are ag producers, one way to increase rural disposable income and hence demand would be to raise the producer price of various cereals or cotton. If the capacity to

respond exists, many producers will want to expand production, which may induce those traditional farmers to join the animal traction market.

The heavy tax of 35 to 65 percent levied on imports of raw iron undoubtedly drives the sales price up. Current government policy penalizes domestic producers of animal traction equipment and favors importers who only pay a 6 percent import tax. Government policy should be changed to encourage domestic production.

### 3. Key system actors - Ag Extension Services

The agricultural extension services should continue their efforts to train and equip local blacksmith. DMA should look into testing an alternative material for plough construction.

#### EVOLUTION DE PARC DE MATERIEL AGRICOLE AU MALI

	1986-1987	1987-1988	1988-1989
Plough	171,822	173,023	173,946
Multiculteur	88,301	90,379	92,065
Seeders	52,653	55,162	57,850
Carts	112,552	114,870	117,134
Tractors	1338	1357	1362

Source: DMA and DNA, numbers reported by extension services only.

#### 1990/1991 AVERAGE PRICES

	SMECMA	MODERN	TRADITIONAL
Plough	40185	30000	21000
Multiculteur	62755	40000	27000

Sources: Published list prices for SMECMA, and interviews.

## BIBLIOGRAPHY

- Adesina Akinwumi, A. Profitability of Animal Traction for Peasant Farmers in West Africa Semi-Arid Tropics: Evidences from Mali. Paper presented at 10th Annual International Symposium on Farming Systems research and Extension, Michigan State University, East Lansing, Mi. October 1990.
- Boomgard, J., Davies, Haggblade, Mead, A Subsector Approach to Small Enterprise Promotion and Research.
- Campagne Malienne de Developement de Textiles (CMDT), Rapport Annuel 1989-1990. CMDT, Bamako, Mali.
- Centre d'Etude et de Promotion Industrielle (CEPI), Promotion de l'Artisanat et des Petits Entreprises de production et de services en milieu urbain. 5 fevrier - 5 juillet, 1978. CEPI, Bamako, Mali.
- Division Nationale Agricole (DNA), Rapport Annual Campagne 1988-1989. Minister of Agriculture, Bamako, Mali.
- Division Machinisme Agricole (DMA), Rapport de Synthesis des Activities de la DMA 1985-1987. Minister of Agriculture, Bamako, Mali.
- Division Nationale de la Statistique et de l'Informatique (DNSI), Enquete agricole de Conjuncture Campagne 1989-1990, Resultats definitifs. Minister de Plan, Bamako, Mali.
- DMA, Caracteristiques et Prix du Materiel Agricole Vendu au Mali, December 1985. Minister of Agriculture, Bamako, Mali.
- DNSI, Flash Informations Statistiques, 1990. Minister de Plan, Bamako, Mali.
- A Field Manual for Subsector Practitioners. Draft GEMINI working paper, GEMINI, 7250 Woodmont Avenue, Ste. 200, Bethesda, Maryland.
- Grant, William and Petr Hanel (1988), A study of the Business Climate in Mali, Prepared for USAID under contract number PDC-1096-I-08-8043-00. DAI, Bethesda, MD.
- Operation Haute Vallee (OHV), Etude sur les Forgerons, September 1990. OHV, Bamako, Mali.
- OHV, L'Action Forgeron. OHV, Bamako, Mali.
- OHV, Questionnaires Evaluation de l'Action Forgeron, 1990. OHV, Bamako, Mali.

**ANNEX C**  
**SKINS AND HIDES SUBSECTOR ANALYSIS**



## ANNEX C

### SKINS AND HIDES SUBSECTOR ANALYSIS

#### I. RATIONALE FOR ANALYZING SKINS AND HIDES

The skins and hides subsector was selected for study and analysis for a number of important reasons which include: its use as a raw material for village and urban products and enterprises, contribution to the national economy as an export earner, even geographical distribution offering employment and revenues to men and a high percentage of women in both rural and urban populations through-out the country, and its role as a traditional craft (tanners, shoe makers, and leather workers) in Mali.

The subsector is also undergoing significant changes and facing uncertainties which are worth investigating and understanding so that appropriate interventions and actions may be planned and executed. The terms, skins and hides, refer to two separate animal by-products. Hides come from large animals, particularly cattle, whereas skins are derived from small ruminants such as sheep and goats. This report further distinguishes between two types of markets for these products which are the market for raw skins and hides and the market for finished leather goods.

The 1987 census identified 1,546 artisanal leather workers, 5,481 shoe makers, and 1,611 traditional tanners who were established as microenterprises in the national territory. These figures do not include other family members and apprentices who traditionally work alongside the owner of the business and make an important contribution to the preparation and transformation of the final product. The importance of women in these traditional activities is noteworthy; for example of the 1611 tanners identified, the census information lists 1510 as women. Significant numbers of women were also identified as leather workers and shoe makers.

The skins and hides subsector study and analysis on the following pages was undertaken to:

- Develop a greater understanding of the different participants, especially the Micro and Small Enterprises (MSEs) and their inter-relationship with others in the subsector;
- Identify major linkages, constraints, and opportunities for the subsector; and
- Characterize the major points of leverage and how they might best be used to eliminate blockages to dynamize growth in the subsector.

#### II. MARKETS FOR MALI'S SKINS AND HIDES

The principal market for Mali's skins and hides are: 1.) the export market for raw skins and hides and semi-tanned, "wet blue" hides; and 2.) the domestic market for finished leather products such as shoes and sandals, belts, purses, sacs and traditional leather goods used in the villages as a prime material for transport (saddles, grain and water hauling sacs), agricultural and household needs.

A

## II.A. Overview of the World Market Trade in Skins and Hides

According to FAO statistics in 1988, the total estimated value of skins and hides and leather products in international trade was approximately \$16 billion. The United States is the largest producer of hides, providing approximately 40 percent of the world trade. The USSR, European Economic Community, New Zealand, and Australia dominate world production of sheep skins. In Europe in 1986, purchases of raw, semi-tanned and tanned hides and skins was dominated by Italy (\$1.25 billion) and followed by Germany (\$400 million), U.K. (\$317 million), Spain (\$313.3 million), France (\$227 million), and the Netherlands (\$132.1 million). Table 1 below presents information on world trade of hides and skins for the period 1982 to 1986 in millions of pieces.

	1982-1984 (Average)	1985	1986
<b>World Total</b>			
Cattle hides/calfskins	266.1	272.5	278.9
Sheepskins	442.0	451.7	446.9
Goatskins	185.6	194.0	197.6
<b>Developing Countries</b>			
Cattle hides/calfskins	119.8	125.7	129.2
Sheepskins	213.7	212.8	217.5
Goatskins	170.5	177.7	181.4
<b>Developed Countries</b>			
Cattle hides/calfskins	146.3	146.8	149.7
Sheepskins	228.3	238.9	229.4
Goatskins	15.1	16.3	16.2

Source: FAO Commodity Review and Outlook, 1987-1988.

The European importers, acting as brokers, buy in large volume and generally prefer establishing long term relationships with their suppliers to ensure quality, reliable delivery dates, and easy transfers of payment. These merchants normally do not enter into speculative buying, but rather purchase with assured opportunities to sell. The world market price for raw and treated skins and hides fluctuates according to the market conditions which are dictated by the forces of supply and demand.

There are seasonal variations in price as the winter months usually bring increased customer demand for leather goods. A warm winter also means a decrease in demand for finished leather products. The market remains speculative with price variations reaching up to 10 percent or more within a few days time. World prices for skins and hides has decreased recently due to the world wide recession. According to the United States Hide, Skin, and Leather Association, skins and hides prices were at a high in April 1990 and have fallen since then to the present time. For example, the price per pound of butt branded steer hides was 88 cents in April 1990 and the price as of July 1991 was 65 cents per pound. The supply during this period has remained constant, but demand has been weak; during periods of recession, people have old shoes resoled and do not go out to buy new shoes or other finished leather products.

Grading and sorting is primarily done upon arrival of the bulk purchases, but this practice is diminishing due to the high handling costs in Europe. Thus, it is increasingly important for the exporters to assume this function of grading and classification, but the reliability of some of the exporters to properly grade and classify their skins and hides remains doubtful.

## **II.B. World Market for Mali's Raw Skins and Hides**

Mali is a small player in the world market and therefore is subject to market demand and prices beyond its control. The quality of its raw skins and hides (20\40\40, respectively representing 1st, 2nd, and 3rd. qualities) is below that of the normal standard classification (40\40\20), and thus the price it receives for its skins is inferior to that of its competitors from the developed countries and its neighbors such as Burkina Faso.

In 1988, according to the Malian Office of Livestock and Meat (OMBEVI) approximately 125,865 raw hides for a value of 377.6 million FCFA and 700,762 raw skins for a value of 561 million FCFA were exported to Europe, principally Italy, Spain, and France. Apparently, there is also unofficial exports to these countries, but data is not available concerning the volume and value of these exports. There is also clandestine trade with the neighboring countries of Burkina Faso, Ghana, and Nigeria of raw skins and hides of varying qualities which accounts for another 300 to 400 million FCFA in value.

Burkina Faso, because its export market is better organized and more competitive, can offer a higher price for Mali's top quality skins and hides which it in turn exports to Europe. The markets in Nigeria and Ghana are primarily for the lowest quality skins and hides and thus serve as an outlet for rejects that are not exportable to Europe.

Please refer to Table 2 on the following page for information on the declared total exports of skins and hides from Mali for the period 1984 to 1989. It can be noted, from the table, that the value of Mali's exports of skins and hides has remained relatively stable during the stated period with the exception of 1984 during which there was a serious drought. It must be noted that skins and hides as a percentage of Mali's total value of exports is not large, averaging approximately 2 percent during the period.

TABLE 2 DECLARED EXPORT OF SKINS AND HIDES, FOB VALUE IN BILLIONS OF FCFA, VOLUME IN METRIC TONS, AND UNIT VALUE IN FCFA PER KILOGRAM							
		1984	1985	1986	1987	1988	1989 Est.
FCFA Value		0.7	1.7	1.5	1.5	1.7	1.7
Vol. Metric Ton		750	2000	1750	1800	1950	2000
Value Per Kg.		900	855	855	833	860	865
Value of Total Exports	Mali	83.9	79.1	71.2	76.9	74.9	87.5
Skins/Hides as % of Total Exports		0.83	2.15	2.11	1.95	2.27	1.94

Source: International Monetary Fund, Mali Statistical Annex, January 1990.

### II.C. World Market for Mali's Wet Blue and Tanned Skins

It is estimated that the parastatal tannery, TAMALI, in 1990 exported to China, through an exclusive agreement with the GRM, approximately 58,000 hides tanned to the wet blue stage for a value of 290 million FCFA. It is interesting to note that TAMALI does not export industrially tanned skins or hides to countries other than to China even though the installed capacity exists to do so.

The traditional tanners are not an important supplier of tanned skins for international trade although there are some undeclared and clandestine exports of tanned skins to neighboring coastal countries, particularly Guinea and Liberia.

### II.D. Shoe Manufacture

Of the estimated total national expenditure of 17 billion FCFA on shoes each year, the local shoe makers capture no more than an approximate 5 to 10 percent of this market. There are, at present, no significant exports of locally manufactured shoes which use skins and hides as a primary raw material although several shoe makers reported infrequent small volume sales of leather shoes to neighboring coastal countries. TAMALI also has installed capacity to produce shoes, but their current production amounts to only one model, the "babouche", of 15 pair per day with production increasing to approximately 50 pair/day to meet rising demand during traditional Muslim holidays.

Shoe prices vary widely according to the quality and methods of production of the product. For example, locally manufactured plastic sandals sell for approximately 350 to 1000 FCFA. Locally produced leather shoes are generally made to order and prices range from 3000 to 5000 FCFA for sandals to 20,000 to 25,000 FCFA for a hand crafted pair of crocodile skin shoes.

### **II.E. Finished Leather Products**

This market can be classified as essentially local and is characterized by a certain class of "modern" leather worker who principally makes, using more sophisticated tools, techniques, and machinery, and sells finished products (wallets, poufs, hand bags and sacs, belts, and purses) to the tourist, expatriate, upper class, and the salaried civil servant. These leather workers use skins almost exclusively in the production of finished leather goods. The prices for these items vary according to the quality and type of skin used (sheep, goat, reptile, or serpent) and can range from 1500 FCFA for a simple wallet and up to 25,000 FCFA for the serpent lined handbags or sacs.

The traditional leather worker is generally found in the villages and uses skins to produce saddles, water hauling and transporting sacs, grain sacs, "gri-gris," adornments, and tying and fastening cord for domestic and agricultural implements. Another traditional leather worker is the Turaeg who makes leather products primarily for the tourist and expatriate and actively markets these items at hotels, restaurants, and places of tourist attraction.

Some of the finished leather products are exported primarily down to the coastal countries by the Tuaregs who travel to such places as Lome, Togo. Traders from the coastal countries also journey to Mali to buy or barter/exchange for finished leather goods.

## **III. STRUCTURE OF THE SUBSECTOR**

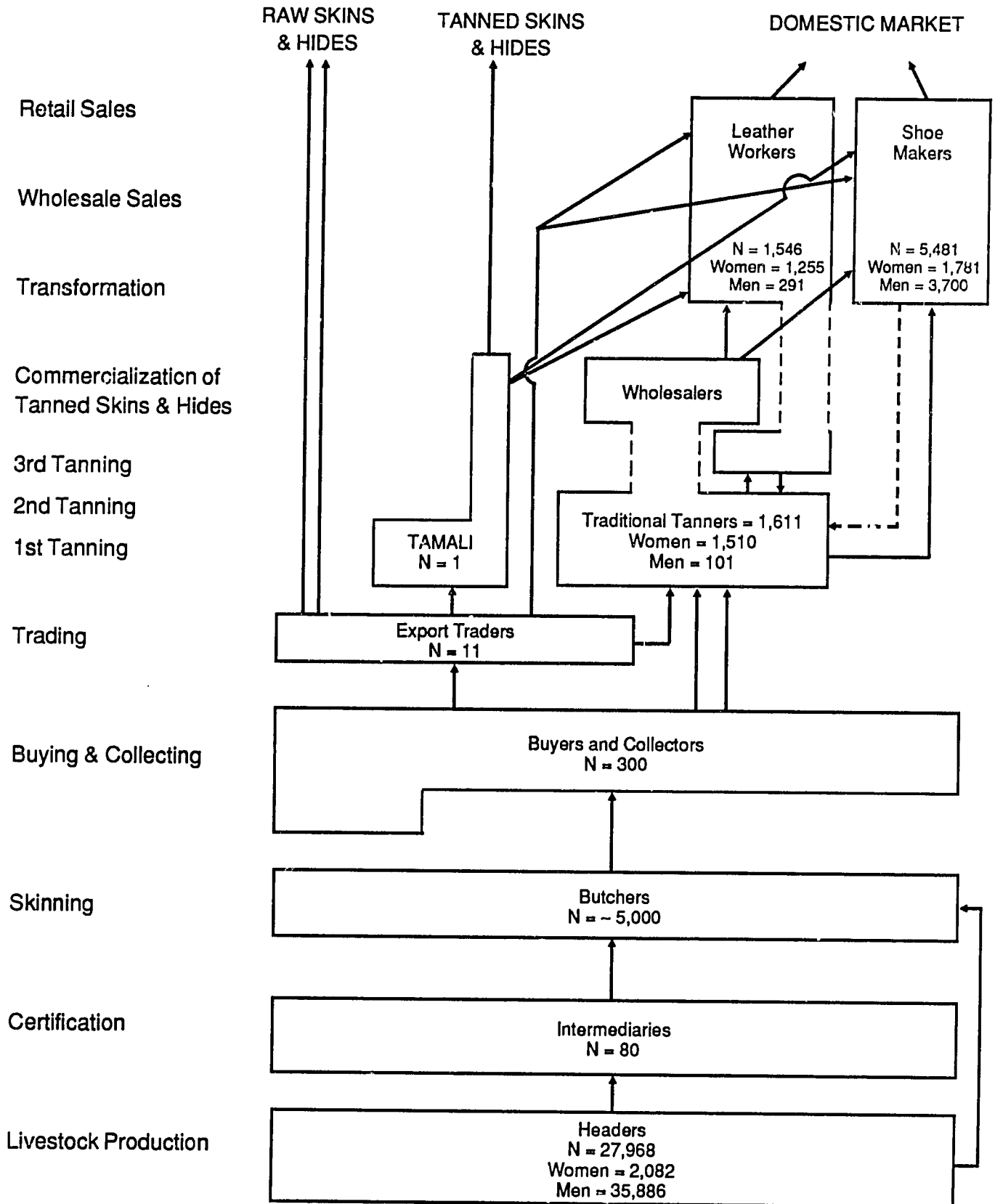
### **III.A. The Subsector Map**

There are numerous participants in the collection, transformation, production, and marketing and selling of raw, semi-tanned, and tanned skins and hides, and finished leather products for domestic consumption and export in Mali. This entire network is schematically described on the subsector map on the following page. The schematic design provides a visual depiction of the actors (animal herders, intermediaries, butchers, collectors, traders, tanners, shoe makers, and leather workers), functions, and supply channels in the subsector.

The final four markets: exportation of raw skins and hides; "wet blue" hides; leather shoes; and finished leather goods are drawn at the top of the subsector map and one can follow the transformations throughout the channels that take place through the vertical system leading down to the supply of livestock by the herders. This entire network is considered the skins and hides subsector in Mali.

As can be seen on the map, the different actors in each stage of the production channel are linked to the next stage, primarily as suppliers, transformers, and sellers of particular products. This is depicted in the map with the following symbols: solid lines indicate direct sales and dotted lines indicate subcontracting activities. An elongated box traversing several functions indicates vertical integration within a channel where individual firms or households perform a series of functions.

### SKINS AND HIDES SUBSECTOR MAP



10/1

### III.B. Functions

The map traces the vertical flow of products through the functions within the different industries to the final consumers. The functions include the supply of livestock, intermediation, slaughtering and skinning the animal, drying and curing, collection and classification of the skins and hides, tanning, finishing, and transformation of skins and hides into leather products. Commercialization, which are the last two functions along the vertical axis, includes both wholesaling and retailing activities.

The functions within the skins and hides subsector in Mali are essentially divided into two separate and distinct entities: 1.) supply and collection, the preparation of raw skins and hides and tanning "wet blue" hides for export; and 2.) supply and collection, tanning, finishing, and production of leather goods — primarily for the domestic market. It should be noted that the functions: supply, certification, skinning, and collection, are the same for all of the channels. It is only after the skins and hides are collected that there becomes a differentiation regarding their destination.

### III.C. Actors

The following sections under III.C. will identify all of the actors who perform the functions of: supply, certification, skinning, collection, tanning, commercialization of skins and hides, transforming leather into final products, and selling the final products to the various clients.

#### III.C.1. Herders

According to OMBEVI, there are currently an estimated 27,968 herders in Mali managing 4.95 million cattle (with an annual population growth rate of 2 percent), and 11.25 million small ruminants (with an annual population growth rate of 1 percent). The herders are dispersed throughout the national territory and generally migrate with their herds to seek pasturage and water.

These persons play an important role in the subsector as the producers and sellers of livestock. The quality of the raw skins and hides which is ultimately available to the subsector is largely a function of how well the animals are fed and cared for by the herders. Many are independent nomads with strong cultural, language, and traditional ties which have remained unchanged for generations.

#### III.C.2. Intermediaries

The intermediaries facilitate the marketing of livestock, primarily cattle, in Mali by either: 1.) guaranteeing the ownership of the animal in certain regions — Mopti, Gao, and Timbuctou; and/or 2.) buying from the herders and selling to the butchers. Although, there are no census figures available, it is estimated that there are 80 to 100 intermediaries active in the marketing of livestock through-out the country.

The system of guaranteeing the ownership of the animal is based on the individual marks that each owner places on his or her animal for the purposes of identification and protection against theft. In the area of Mopti, according to one of the intermediaries, there are over 342 identifying or ownership marks. For a fee of 1000 FCFA per cow, the intermediary will guarantee the ownership of the animal based on his knowing the individual mark of the herdsman selling the animal.

Intermediaries are also prevalent in the other principal market towns, but normally do not serve as guarantors of the ownership of the animal, but rather act as financial intermediaries who buy from the herdsmen and sell to the butchers.

### III.C.3. Butchers

The butchers are traditionally a caste dominated group and number approximately 5,000 persons. The butcher either pays a fee to the slaughter house (400 FCFA/goat and 2,500 FCFA/cow) for the slaughtering and skinning of the animal or performs this task himself. It is important to note that the skinning of the animal must be done properly in order to ensure that the quality of the skin or hide is maintained.

OMBEVI, in the past, has initiated training programs for the proper skinning of animals but unfortunately has no budget at the present time to continue these training activities. Improper skinning of animals, according to OMBEVI and the traders, presents a serious obstacle to improving the quality of Malian skins and hides and results in lost commercial value due to cuts, holes and other irregularities which causes the skin or hide to receive a lower classification.

### III.C.4. Buyers and Collectors

These persons either work as independents or for the large export traders. Although there are no census figures on the total number of buyers and collectors, it is estimated that there are at least 300 operating throughout the country. Their task is to buy and collect, treat and cure, and store the skins and hides from the butchers and slaughter houses. They are most often based in the larger towns and visit their suppliers daily to receive the fresh skins and hides. Many of them also have agents who travel out to the rural areas on a regularly scheduled basis to collect the dried skins and hides.

In the past, these persons received financing from the traders for many of their activities, however due to unfavorable market prices over the past few years and poor financial management by the traders, this practice has been restricted. A buyer may work both for a trader supplying an agreed upon quantity of skins and hides per month or period to that person and also work for himself in buying and selling surplus skins and hides to other persons such as the local tanners or other traders.

### III.C.5. Traders

The traders are located in Bamako and their principal clients are the large importing houses in Europe where it is estimated that they ship an estimated 900 million to 1.2 billion FCFA in value of raw skins and hides each year. The traders also supply the traditional tanners, the shoe makers and leather workers, the parastatal tannery TAMALI, and Nigeria, Ghana, and Liberia with raw skins and hides. The traders are limited in number, with there being approximately 11 establishments active in this business. Of the 11 establishments, 4 are understood to be the largest volume dealers.

There is considerable cooperation among the traders as they negotiate contracts with specified delivery dates by the container load, with each container weighing approximately 5 metric tons, with the European importing houses. Thus one trader may negotiate a contract for the delivery of several containers of raw skins and hides, and because of his own limited supply, will contact his associates to



complete the containers. The traders travel, on occasion, to Europe to market their products and to maintain contact with their buyers and establish new clients.

### **III.C.6. Tanners**

Two principal types of tanning are performed in Mali: industrial and artisanal. The industrial tannery processes hides finished to the "wet blue" stage for the export market and the traditional tanners primarily produce skins tanned for the domestic market.

#### **III.C.6.a. Industrial Tanning**

TAMALI, which is the only operational industrial tannery in Mali, was created as a state enterprise in 1974 with financing and technical assistance from China. There are presently 70 Malian employees and 5 Chinese technicians who operate the tannery which has an installed capacity of tanning to the "wet blue" stage 350 hides/day and 1200 skins/day. TAMALI's current production is almost completely limited to the tanning of hides. Although, it will tan skins on an order basis, this activity is sporadic and not considered to contribute significantly to its overall production or profit margin. The tannery also has the installed capacity to mass produce shoes and other finished leather goods, but currently this activity is negligible.

#### **III.C.6.b. Traditional Tanners**

According to the national census which was conducted in 1987, there are approximately 1,611 traditional tanners, of which 1,510 are women, in Mali. This activity is dominated by the caste system whereby the skills of this trade are passed down in certain families through generations. Some of these tanners are also integrated vertically upward in that they not only tan the skins, but also dye them, and then transform the skins into tourist items or domestic products for use in the village or urban centers.

Normally, the tanners work in lots of ten or more skins at a time and use primarily locally available raw materials for tanning the skins. Most of the traditional tanners can be found in the northern regions of Mali (Mopti, Gao, and Timbuctou) and are usually found grouped in certain villages or clans in towns. Essentially the tanning technology is rudimentary and has unchanged through the centuries. Clay jars, skinning knives, chicken manure, soda ash, water, and the fruit of a native tree comprise the primary tools and raw materials for tanning skins.

A tanner charges between 200 to 250 FCFA per skin and the process takes approximately three days to complete. Many of the tanners do not work full time at their profession, but rather engage in this activity as a source of cash income to supplement their farming endeavors.

### **III.C.7. Production of Finished Leather Goods**

As there is virtually no export of finished leather goods from Mali, the primary market for these products is domestic. Presently, there is no industrial manufacturing of finished leather products, rather all the finished items are hand made one at a time. These products are made by two groups of persons: shoe makers and leather workers, both of whom represent the most skilled crafts persons in the subsector.

107

These two professions are also defined by caste and the skills are passed down from generation to generation within the same families or clans. The clients for these artisans are generally: tourists, expatriates, salaried civil servants, and upper class Malians. These two groups of workers prefer to work on firm orders from their clients, particularly for the higher priced items, and receive up to 50 percent of the cost of the product prior to starting the work.

Both of these groups also perform the last stage in the tanning process whereby they finish and soften their leathers with oils and by hand beating the leather to make it soft and supple. They also dye the leathers according to the tastes of their clients and the type of item which they are making. Some of the dyes are natural products available locally while other dyes are imported from Europe.

### III.C.7.a Shoe Makers

It is estimated that there are approximately 5,481 local shoe makers in Mali. There is some differentiation in this class of shoemaker as the skills and the technologies used by these persons vary greatly. The "modern" shoemaker which represents probably no more than 15 to 20 percent of the total population are found in the major cities and are often grouped together (operating out of stalls and not out of their homes) such as those found in the leather workers market across from the National Institute of the Arts. These persons work with the skins of sheep, goat, snake, crocodile, and iguana and cow hides.

The shoe makers make a variety of types of shoes and sandals with a range of prices and qualities. A typical sandal will cost from 3,000 to 5,000 FCFA and a shoe made of crocodile, iguana or serpent skin can cost as much as 20,000 to 25,000 FCFA. The sandal will be made using goat skins and the process is done entirely by hand with no stitching by machine. On the other hand, the high quality expensive shoe made with exotic skins will use the best leather cowhide sole possible (imported from France), and the stitching will be done by machine.

The traditional shoe makers generally work out of their homes and often tan the skins themselves. These persons work primarily with goat and sheep skins and the craftsmanship of their finished products is not as good as that of the modern shoemaker.

Both of these groups of shoemakers will also make other finished leather items, in competition with the leather workers, to maximize their income and productive capacity.

### III.C.7.b. Leather Workers

The leather workers number approximately 1,546 persons and are geographically distributed throughout the country. As with the modern shoe makers, some of the best skilled leather workers work in stalls near the national Institute of Arts. These persons make leather sacs and bags, wallets, poufs, purses, belts, and other items which might be specially desired by their clients. The leather workers work almost exclusively with goat, sheep, reptile, crocodile, and serpent skins. The prices of their products vary from approximately 1,500 FCFA for a simple wallet to 20,000 to 30,000 for a sack made of serpent or crocodile skins.

One distinguishing group of leather workers is the Tuaregs who come from northern regions such as Gao and Timbuctou. Tuareg women assume an important role in all aspects of their production process. They are almost completely integrated from tanning the skin to completion of the final products. Generally, their finished products are different from those of the other leather workers.

The Tuaregs work exclusively with goat, sheep, and camel skins and produce items such as desk sets, leather boxes for video and music cassettes and computer disks, vanity boxes, leather wrapped knives, and etc. There is also a considerable amount of leather tooling, engraving, and design work performed by these crafts persons which distinguishes their work from that of the other leather workers. They also make products for traditional domestic use such as bags for hauling and transporting water, grain sacs, and saddles for horses and camels.

### III.D. Channels of Supply

The subsector map is illustrated by four channels of supply. For the export market, these channels are fairly simple and straight forward, whereas for the domestic market the relationships are more complex and there can be numerous suppliers.

#### III.D.1. Industrial

The supply of skins and hides for the two industrial channels, which consist primarily of the commercialization and export of: 1.) raw skins and hides, and 2.) hides tanned to the wet blue stage; is characterized by its limited transformation in these channels and the actors are fewer in number.

Skins and hides are made available to the industrial channels through the supply of the livestock from the herders to the butchers, often with the intermediary acting as the broker or guarantor for the sale of the animal. The butchers will sell to the buyers and collectors or to the traditional tanners. It is at this stage that the skin or hide is dried and stored by the collectors and buyers, who are located throughout the country, until a sufficient quantity is available to be transported to the traders in Bamako. There are also clandestine sales of raw skins and hides to neighboring Burkina Faso by the buyers and collectors.

The traders will receive the skins and hides and prepare and classify them for export or sell them directly to TAMALI. The export market for the Trader's good quality raw skins and hides is principally Europe, and the poorer quality ones are sold to Ghana and Nigeria. Also, some of those skins that are classified as fourth quality will be sold to the traditional tanners. The traders will sell, on occasion, limited quantities of inferior quality skins directly to the shoe makers and leather workers.

TAMALI has an exclusive agreement with the Chinese to supply 110,000 hides tanned to the "wet blue" stage each year. However, according to current data, the tannery is only producing approximately 60,000 hides per year. The tannery is located next to the slaughter house in Bamako where it receives most of its supply. The traders, until recently, were compelled to supply TAMALI with raw hides. The GRM has recently removed this condition and the traders are currently negotiating with the tannery a new price schedule for the provision of hides.

TAMALI will also be supplied with skins by the traders when it has received a special order from European clients for tanning to the wet blue stage. This activity, however is intermittent. Some

tanned skins and hides, primarily the rejects from the tanning process, will also be furnished to the shoe makers and leather workers on occasion.

### III.D.2. Traditional

The traditional channels of supply are more complex than those of the industrial channels due to the larger number of actors involved and more transformation taking place in these two channels. It must be noted, however, that these two channels mainly use skins as their prime material. This is particularly true of the leather workers who work almost exclusively with skins. The supply of skins and hides through the herders, intermediaries, and butchers is essentially the same as that of the Industrial channels which has been described in III.D.1.

The traditional tanners can be supplied by three different groups: butchers, buyers and collectors, and the export traders. The origin of the supply for these persons depends primarily on their geographic location. For example for those traditional tanners who are located in Bamako, their suppliers are all of the above. If the tanners are located in the rural villages or smaller towns, their suppliers would be primarily the local butchers or the buyers and collectors. The volume of their business also determines, to some extent, whom they buy from. The tanners who have a large production volume would most likely buy from the collectors and buyers as the latter persons have sufficient product available, whereas the local butchers can not supply large numbers of product.

The shoe makers and leather workers are normally supplied with tanned products by either the traditional tanners or the wholesalers. If the shoe makers and leather workers have a special large volume order, they might buy raw skins from the export traders or semi-tanned skins from TAMALI. If they buy raw skins, they would contract with the tanners for the tanning processes and maintain control of the product.

## IV. DRIVING FORCES AND CONSTRAINTS

In seeking opportunities and positive changes for the subsector of skins and hides, it will be useful to understand the driving forces and constraints which can indicate possible avenues for effecting change.

### A. Supply

The principal driving force in the subsector in Mali is the supply of various qualities of the raw material, skins and hides, which is an animal by product. It is important to note that this supply is directly linked to animal production factors, to domestic consumption of meat, and the export of livestock to the coastal countries.

The drought of 1984 had a tremendous negative effect on the supply of skins and hide, minus 11 percent change in 1985 from the previous year, as animals died from starvation. The years, 1988, 1989, and 1990, registered positive growth in the livestock population for both cattle and small ruminants. Climatological factors, as well, are an important consideration in the growth in the herd size and consequently the supply of animals for slaughter and domestic consumption of meat.

Local demand for meat consumption supplies the subsector with its raw skins and hides as a by-product of the slaughtering of the animal. In the period from 1987 to 1990, total cattle slaughtered were 345,000, 357,000, and 375,000 respectively and total small ruminants slaughtered were 1,740,000, 1,800,000, and 2,100,000 respectively. It is estimated that the human population growth in Mali has been relatively constant at 2.6 to 2.8 percent per year whereas the growth in the livestock population has been irregular. With a per capita income of approximately \$230 to \$260 per year and an agriculturally based economy, meat consumption averages 6.10 kilos per person per year whereas the consumption of cereals averages 212.43 kilos per person per year according to Ministry Of Plan's Household Consumption Study of 1988-1989 as reported in Table 3 below.

**TABLE 3**  
**GLOBAL FOOD CONSUMPTION**  
**(IN KILOS PER PERSON PER YEAR)**

Food Products	Rural Areas	Urban Areas	Total Mali*
Cereals	245.20	168.9	212.43
Animal Fats	2.89	4.81	3.28
Meat	4.85	10.90	6.10
Fish	9.09	11.68	9.62
Tuber Leaves	0.24	0.11	0.21
Fruits	1.02	7.83	2.41
Sugar & Sugar Products	3.25	14.83	5.63
Tubers & Pulses	2.66	5.23	3.19
Milk & Milk Products	9.75	4.81	8.74
Leafy Vegetables	0.55	2.86	1.02
Dried Vegetables	0.51	1.33	0.68
Harvested Wild Foods	10.43	2.11	8.73
Vegetables	6.72	17.11	8.85
Bread & Pastries	3.58	5.37	3.24

Source: National Direction of Statistics and Information  
Household Consumption Study (1988-1989).

\* The total Mali category is not a simple average of rural plus urban data, but rather appears to be weighted/factored as an average according to percentage of rural population plus percentage of urban population data.

In the same study, meat purchases averaged 12 percent or 55,175 FCFA of the total food purchases (447,986 FCFA) for each household unit which is grouped together for eating. Thus, the weak purchasing power of individual households limits the consumption of meat, which, in turn, restricts the supply of skins and hides to the subsector.

According to IMF data, the monthly wages and salaries for contractual workers and government employees was frozen from 1985 to 1989 which further limited consumer purchasing power due to the effects of inflation on these salaries. Also there is no processing or packaging industry currently operating in Mali to supply neighboring or world markets with packaged meat whereby additional skins and hides would be supplied to the subsector, thus the sole supply of skins and hides is determined by the domestic consumption of meat.

Livestock exports to neighboring coastal countries also limit the availability of animals for slaughter and domestic consumption. Exports of live animals contribute significantly to the foreign balance of payments. For example in 1988, according to IMF data, livestock exports totaled 22.1 billion FCFA or 30 percent of Malian exports. Livestock exports have, in the past, and will continue in the future to be an important export commodity for Mali.

There are also seasonal variations in the slaughtering of animals due to climatological factors which effect grazing patterns and livestock herding, consumer demand, and variations in price. Herders are reluctant to sell their animals during the rainy season because it is at this time of the year that the animals are being fattened which will increase their value. The herders also move their livestock according to the availability of grazing lands. Important Muslim holidays such as "Tabaske" results in the slaughter of sheep which floods the market with skins.

As discussed earlier in this report, the supply of quality skins and hides to the subsector has been a problem due to such factors as improper care and feeding of livestock, lack of adequate veterinary services, marking the animals for ownership, improper skinning techniques, and inadequate drying and curing procedures. The industrial tannery, TAMALI, rejects 10 to 15 percent of the raw hides it receives prior to processing these hides. Burkina Faso, by paying a higher price, competes directly with Malian traders, for the top quality skins and hides available, thereby reducing the best quality supply for direct export.

## **B. Demand**

### **1. World Market for Raw and Tanned Skins and Hides**

The world market for skins and hides has been on the decline over the past few years. The current export trade of Mali's skins and hides, although important to the national economy, is a minuscule amount in the world market. Mali's raw skins and hides and tanned "wet blue" hides do not compete in quality or price in this competitive market, but rather follow the market in the lower ranges of prices offered.

As the parastatal tannery is being privatized, there is currently no agreement concerning the future operation of the tannery by the Chinese or other local or international investors. Internal demand for TAMALI's "wet blue" hides and other products is negligible and thus this industrial operation relies almost exclusively on its exports to China.

112

## **2. World and Local Market for Mali's Shoes and Finished Leather Products**

There currently is very little export of shoes and finished leather products from Mali. The export market for these goods is sporadic and primarily oriented toward the neighboring coastal countries. There is no existing industrial activity of mass producing either leather shoes or finished leather products in Mali. Interviews with shoe makers and leather workers indicated that traders and merchants do occasionally buy from them, but the volume of this trade was not of a significant quantity or done on a regular basis.

The shoe makers and leather workers are almost entirely dependent upon their local clientele for their sales. These clients are tourists, expatriates working in Mali, salaried civil servants, and affluent Malians. This market is currently undergoing significant changes due to a number of factors:

- During the past several years, according to the Ministry of Tourism, the number of tourists and business persons visiting Mali was relatively stable at approximately 32,000 persons per year. However, estimates for this year are considerably lower due to recent political events;
- There has been a significant increase in the imports of shoes, sandals, and other substitute leather goods. For example, official estimates (National Direction of Economic Affairs) declared that the imported value of shoes in 1987 was 415.4 million FCFA and in 1989 that value had risen to 746 million FCFA. These imports have competed directly with and negatively affected domestically produced leather shoes and finished leather products.
- With support from the IMF for the Structural Adjustment Loan, several thousand government employees have lost their jobs and another 4,000 to 5,000 employees are scheduled to be laid off in the future which will further reduce the market base for domestically produced leather goods.
- The purchasing power of potential local clients has been severely affected by wide fluctuations in the growth of the economy. Please refer to the following Table 4 for data on the growth of the Gross Domestic Product.

**TABLE 4**  
**GROSS DOMESTIC PRODUCT**

	(At Current Prices)				
	1985	1986	1987	1988	1989*
Total (in billions of FCFA)	475.0	528.2	568.8	578.2	641.8
	(In Percent of GDP)				
Consumption	114.3	101.2	93.9	96.2	91.6
Primary Sector	47.3	51.7	48.7	49.0	49.6
Secondary Sector	14.8	12.8	11.8	11.8	12.2
Tertiary Sector	33.5	31.1	34.3	33.7	32.7
	(Annual Change In Percent)				
Real GDP	-0.7	18.6	1.0	-1.0	9.9
Nominal GDP	2.5	11.2	7.7	1.7	11.0

Source: International Monetary Fund, Mali Statistical Annex, January 1990.

\* Preliminary Account Estimates.

The domestic market for shoes and sandals is also supplied, principally, by two local manufactures, Mali Plastique and SOACAP, and imports of plastic shoes and sandals, primarily from China. Competition in this market is very stiff, and the imported varieties have captured greater market share because of lower prices due to huge production lots, more advanced technologies, and better durability and quality.

There has been a steady and continual decline in the national production of plastic shoes from 731 thousand pair in 1985 to an estimated 468 thousand pair in 1990 as reported in Table 5 below.

**TABLE 5**  
**PRODUCTION VOLUME OF LOCALLY MANUFACTURED**  
**PLASTIC SANDALS AND SHOES**  
(In Thousands of Pairs)

Year	1985	1986	1987	1988	1989	1990*	1991*
Total Pdn.	731	732	603	428	591	468	476

Source: National Direction of Statistics and Information Economic Accounts of Mali, Preliminary Results, 1989.

\* Preliminary Estimates



Declared imports of shoes increased dramatically from 1987 (415 million FCFA) to 1989 (746 million FCFA). There is also considerable trade in shoes which enter the country clandestinely, either in small quantities carried in by returning family members or by large import firms. Unquestionably, local shoe makers and leather workers have lost considerable domestic market share for their finished products because of the cheaper cost and more reliable quality of imported and locally manufactured plastic shoes and sandals and substitute leather goods.

### **C. Technological Change**

The technologies used to process and transform skins and hides in Mali are rudimentary and labor intensive. This is due to a lack of: capital to make new purchases of machinery and tools; high cost of electricity to run machines; inadequate training or "know how" to understand and make appropriate use of technological innovations; high government tax on imported machinery; the traditional nature of the artisanal skills employed which are passed down through family members from generation to generation; and production techniques employed whereby each item is handcrafted piece by piece in lieu of mass assembly.

It must be noted, however, that many of the technologies are appropriate as the volume of production is consistent with the current demand for finished leather goods. Introducing new labor saving devices and producing higher volumes of goods might not necessarily result in positive results.

#### **1. Tanning Techniques**

The industrial tannery, TAMALI, was built with Chinese technical and financial assistance in 1974, and there have been no new major changes in the processing equipment since that time. The traditional tanners are primarily using raw materials that are available locally and which use is more labor intensive than using imported chemicals for tanning their skins.

It must be noted, however, that there are certain dangers in introducing new technologies and chemicals, many of which are highly toxic, into the tanning process. There are concerns of waste disposal of the toxic wastes from the tanning process and improper handling of these chemicals by both the industrial tannery and the traditional tanners could result in significant health risks and hazards to both the tanners and those persons, animals, and crops located nearby the tanneries.

#### **2. Leather Working Skills**

The majority of these persons have learned their trades from other family members. The National Arts Institute trains a very limited number of leather workers each year (4 to 5 persons), but the impact of these graduates on improvements in the industry appears to be marginal.

#### **3. Design and Product Conception**

The shoe makers and leather workers make traditional leather products (shoes, purses, wallets, belts, sacs) which are generally commissioned by their clients, but there is very little experimentation or

infusion of new ideas and products. A limited number of the shoe makers and leather workers have attended international fairs to promote their products through sponsorship by the government, but the results have not resulted in increased sales or contracts for quantity purchases of leather goods.

#### **4. Machinery**

Without a noticeable increase in demand, which does not seem eminent at the present time, new labor saving machinery for the industry as a whole is not warranted. The industrial tannery is presently not operating at capacity because of supply problems. The other tannery in Kayes is closed. Thus, investing huge sums in capital intensive new machinery to up-grade TAMALI's equipment without assuring a steady and increased supply of raw hides and stable market demand would not give better results.

From observation, both the shoe makers and the leather workers are using labor intensive tools to transform skins and hides into finished leather products. Some of the leather workers did have sewing machines, but this was noted as an exception to what was normally found in their shops. Most of the tools that were being used were produced locally.

As the current market for finished leather goods is restricted, investing in more modern equipment and machinery as a labor saving device and for production in lots is not deemed necessary because there are no time constraints placed on the artisans nor is there a demand for larger production volumes. In addition, purchasing machinery or specialized tools requires sufficient outlays of capital, increases overhead and spare parts costs; and import taxes on these items are often 100 percent of the value of the equipment.

#### **5. Marketing Techniques and Business Management Skills**

With the exception of the leather goods produced and marketed by the Tuaregs, the marketing techniques of the shoe makers and leather workers are very limited. These skills should be considered as technological innovations in that they are essential to increasing production volume, sales, improving the quality and diversity of finished products, employment, and profits. When interviewing the craftsmen, it was apparent that there were no financial records being kept concerning costs of raw materials, labor, overhead, cash flows, and daily or monthly sales to clients. In an increasingly competitive environment with imported shoes and substitute leather goods gaining market share, the artisans need to better understand who their present and potential clients are and how to market their products to those persons.

#### **D. Government Policy**

Government policy has had a significant influence on the dynamics of the subsector. For example, in 1974 the government collaborated with the Chinese to establish TAMALI by granting exclusive agreements to the Chinese to export semi-tanned hides. As a part of this agreement, the export traders were compelled to supply TAMALI with raw hides to meet the production quota of exporting to China of 110,000 semi-tanned hides per year. In exchange, the traders were granted licenses to export skins and their remaining supply of raw hides. This policy was recently removed and the traders are no longer required to supply TAMALI with raw hides in exchange for export licenses. TAMALI, as a

parastatal, has been subsidized by the GRM which will stop by the end of 1991 as the tannery will be privatized and sold. Government policy also taxed the exports of raw skins at 2.5 FCFA/kilo and raw hides at 5 FCFA/kilo. This policy was rescinded in 1989 with encouragement from the IMF to encourage greater Malian exports.

It is important to note that there has been considerable increases in the imports of plastic shoes and sandals and other goods, principally from China, which has been done at the expense of the local manufacture and production of both plastic and leather goods. Both of the local companies who mass produce plastic shoes and sandals have complained that they can not compete with these imported products, presumably because of the high tariffs on their imports of raw materials and machinery and the low tariffs on imported finished and mass produced plastic products.

The GRM has historically favored an overvalued currency which has kept imported products relatively cheap while restricting the export of Malian raw materials and finished products. There have also been very limited resources available by the government to assist artisans and crafts persons in the subsector improve their technical skills and research new product designs and export markets. The government, according to IMF data, does not plan increased expenditures to the livestock sector over the next couple of years which will continue to limit improvements in livestock care and consequent quality issues for skins and hides.

## **E. Key Actors**

There are several key actors (intermediaries, traders, and TAMALI) which exert a strong influence, both negative and positive, on the subsector.

### **1. Intermediaries**

In the northern areas of Mali (Mopti, Gao, and Timbuctou) the intermediaries play an extremely important and powerful role in the commercialization of livestock and have resisted attempts by both the government and village chiefs to limit their role. It is in this area that the intermediaries, through the traditional system of marking animals, principally cattle, serve as guarantors of the ownership of the animal at the time of the sale of the animal to the butchers. This system of marking the animals has been practiced for generations and has served to deter thefts as each herder has developed their own mark which is distinct, identifiable, and known by the intermediaries. Unfortunately, marking the cattle reduces the quality of the hide as it leaves permanent scars which lowers the commercial value of the hide.

The government is cognizant of this problem and has tried to implement changes by eliminating the ownership marks on cattle through convincing the herders that the scars lower the commercial value of the animal. Unfortunately, these efforts have not been successful and have been sabotaged by the intermediaries as their influence and power would be seriously diminished. The intermediaries control the livestock market and do not wish for the system to change as their economic security is based on knowing the identifying marks and the owners of the livestock. It has even been suggested that the intermediaries have resorted to stealing cattle to ensure that their influence in the system remains unchanged. One intermediary has stated that the commercialization of livestock will not happen without the consent of the intermediaries in these areas of the country.

## 2. Traders

The traders are a very important group in the subsector and exercise considerable leverage. They are small in number and supply both the export and domestic markets with skins and hides; thus, the traders serve as a focal point for positive change as they are an essential and integral component of the skins and hides business in Mali. Recent government policy changes have had a favorable impact on their trade as they no longer have to pay export duties and are not required to supply TAMALI in order to receive their export licenses.

One of the key problems, as mentioned earlier, in this subsector is the quality of the skins and hides which are available in mali. This problem is pervasive throughout all of the production and supply channels. The traders have recognized this problem and have urged the government to promote programs to educate both the herders and the butchers concerning animal care, marking, and skinning. One trader has gone so far as to invest his own money, reportedly 3 million FCFA to product television announcements concerning the quality and value of skins and hides.

The traders are presently informally organized and have expressed interest in forming a trade association to better: 1.) develop and organize their supply channels; 2.) improve their drying, curing, treatment, and classification system; 3.) promote their products in the European markets; improve their management skills; and 4.) lobby the government to implement policies and interventions which would improve the supply and quality of Malian skins and hides.

Several of the traders have expressed interest in integrating into their operations the tanning of skins and hides. Presently, they are only cleaning them to remove excess fat and meat, washing them with a solution of water and arsenic, drying them, and applying a disinfectant and insecticide to prevent, during storage and transportation to Europe, insect infestation. With the uncertainties in both the local and international tanning industries (which will be discussed in section V.), some of the traders are interested in capturing additional value added through locally tanning their products.

## 3. TAMALI

According to IMF preliminary data, TAMALI's operating profits/losses respectively (in millions of FCFA) for the years 1984 to 1988 were as follows: -36.4; 44.7; 51.4; 85.0; and 85.0. It must be noted that for the years 1987 and 1988, the 85.0 million FCFA profits are estimates, and it is widely believed that the tannery has been operating at a loss which contradicts the IMF preliminary data.

Under its structural adjustment loan program with the IMF, the GRM is privatizing many state owned enterprises, including TAMALI which is scheduled to be offered for public ownership by the end of 1991. Currently no buyers have been identified, but the GRM has been holding negotiations with potential interested parties. The Chinese and the GRM are also discussing the future operation of the tannery, but no decision has been declared by the Chinese concerning their future relationship with TAMALI.

It is interesting to note that there is also another tannery, TAPROMA, located in the town of Kayes which was built in 1978 with GRM support. Its installed capacity is 50,000 hides/year and 50,000 skins/year. According to the interviews, this formerly state owned tannery was operational for only six

months after it was built. The primary problems that forced its closing were: inadequate supply of skins and hides; lack of operating capital; and inadequate infrastructure (electricity, water, and transportation) to support industrial processing activities.

At the present time, it is clear from the above information that there are serious problems in the operation of industrial tanneries in Mali. This situation is unfortunate because it also exacerbates the problem of supplying quality tanned skins and hides for the domestic market to be used by the shoe makers and leather workers to produce finished leather goods, which, in turn, would improve the quality of their products.

## **V. OPPORTUNITIES FOR SUBSECTORAL EXPANSION**

From the above analysis, it should be clear that there are serious problems encountered in the subsector of skins and hides. There are, however, opportunities which exist that, if pursued prudently, could result in creating more value added, employment, and profit for Malian enterprises operating in this subsector.

### **A. Improved Tanning Technologies**

Presently, European industrial tanneries are closing because of high labor costs and increased environmental regulations. There is only one industrial tannery in Mali which is being privatized, whose future is uncertain, and only processes hides to the "wet blue" stage. Thus, several of the large exporters have expressed interest in integrating into their business the tanning of both skins and hides to take advantage of the diminishing capacity in both Europe and domestically to tan skins and hides. One of the largest exporters, Mali Reptile, has requested financial assistance (50 million FCFA) from the Canadian project, PAPME, which aids small and medium enterprises with technology development and financing, to buy processing equipment so that the company may develop the capacity to tan skins and hides locally.

### **B. Improved Animal Husbandry, Skinning, and Classification Techniques**

Unquestionably, improving the quality of Mali's skins and hides presents an opportunity which would favor the whole subsector. Correcting traditional problems of animal care through improved veterinary services, eliminating animal marking, and providing more consistent classification standards would result in a higher quality skin and hide being available for the both the export and domestic markets.

### **C. Expanded Markets Through Increased Exports**

Clearly, the growth potential for selling leather products in the domestic market is limited. Mali does have a comparative advantage in its low labor costs that could be exploited. The artisans have the basic leather working skills, but lack experience in marketing their finished leather products in the international market. Although, the government has assisted, on occasion, artisans to attend international fairs, there have been no systematic efforts made to develop the export potential of Mali's finished leather goods.

#### **D. Product Diversification**

The present line of products being offered to clients is limited due to the lack of new ideas for product diversification and understanding of international market needs. The garments, athletic equipment, and upholstery industries could be possible markets for expansion. Primarily, these types of products would be for export and the artisans would need training and marketing assistance in understanding how to supply this market with quality products at competitive prices and reliable delivery schedules. Targeting this market would be a slow process and probably require much trial and error on the part of the artisans to satisfy the high quality standards that the clients expect.

#### **E. Current Positive Environment to Support Private Sector Development**

With the encouragement of the international donor community, the GRM has undertaken a series of policy initiatives and programs to liberalize the economy and provide the private sector with new opportunities for business expansion. The financial institutions are also basically sound and liquid and seek new customer accounts, and there are significant amounts of donor credit channeled through the banking system to assist businesses with credit needs. The regulatory environment has become more favorable toward supporting exports from Mali; and the donor community has initiated a significant effort (training, technical, and financial) to support enterprise development.

### **VI. LEVERAGED INTERVENTIONS**

One of the fundamental elements in the subsectoral approach to economic growth is the concept of leveraged interventions. Essentially the concept is based on the principal of seeking the greatest impact or growth of promising enterprises in the subsector with the limited resources which are available. Leveraged interventions are those which reach the greatest number of operators at the lowest cost, usually by identifying nodes where technological or behavioral change can be most easily effected or the greatest numbers of beneficiaries reached with the fewest concentrated interventions.

#### **A. Export Traders**

The 11 export traders play an extremely vital role and are influential in all aspects of the subsector through their knowledge, experience, and contacts within the internal supply market, with the local artisans, the industrial and traditional tanners, the international export market, and with GRM officials in both the technical and regulatory ministries.

The export traders are very cognizant of and affected by the problem of the supply of quality skins and hides and they are well situated to encourage and support efforts by the GRM and international donor projects involved with improved livestock amelioration, production, and slaughtering techniques.

These persons also travel to Europe to meet with their clients and attend international promotional fairs for the skins and hides and finished leather goods trade, and are aware of new technologies and product designs for finished leather goods.

Providing the opportunity for these persons to attend a workshop to: discuss the subsector, and in particular the problems of quality, export marketing, product diversification, and financial constraints;

and develop recommendations and specific interventions to dynamize the subsector would be a cost effective way to begin positive efforts for change.

## **B. GRM and Donor Support of Private Sector Development**

Currently in Mali, there are significant endeavors by the international donor community in collaboration with the GRM to encourage the development of private sector initiatives through training and financial assistance to entrepreneurs and group associations. Institutions such as the Canadian funded PAPME project, the National Art Institute, the new Ministry of Artisanry and Tourism are all potential points of leverage that could dynamize the subsector.

### **1. Organizational and Managerial Development**

During the interviews with the different artisans, butchers, collectors, and traders, each group indicated that there was the need to form trade or artisans associations and some efforts have been made to initiate such activities. However, at the present time, these efforts are considered minimal and require further encouragement.

By being better organized, the trade associations could receive group assistance in accomplishing their objectives to promote their crafts or the association could direct its membership toward projects which provide direct benefits to the small entrepreneur. Both the new Ministry of Artisanry and Tourism and donor financed projects which provide training and technical assistance to artisan's associations in organizational and managerial development could assist these nascent associations in the skins and hides subsector.

If the microenterprises were better organized into trade/artisan associations or cooperatives, these groups could also seek financial assistance from the banks or through donor sponsored projects.

### **2. Improving Product Diversity and Marketing Skills**

The National Institute of Arts has a program to train shoe makers and leather workers, but most of this training is traditional in nature and does not introduce new techniques, skills, and product designs into the training program. Improving the quality, diversity, and productive capacity of selected artisans, by upgrading the curriculum and focus of the training offered by the National Institute of Arts would allow the artisans to seek new markets, especially international, for their products.

In collaboration with providing new training approaches, it would be important for the training institution to teach marketing and business skills so that the artisans could be better prepared to more effectively manage their businesses and seek new markets for their products. The Institute has organized crafts fairs locally and internationally and these efforts should be further encouraged and expanded. The new Ministry of Artisanry and Tourism also could assume a vital role, in collaboration with the National Institute of Arts, in promoting leather crafts both for the domestic and export markets. Both of these institutions should conduct market studies for Mali's finished leather products to ascertain what leather products are in demand, new market potential, and

#### **D. Promote New and Smaller Scale Industrial Tanneries**

As the future of TAMALI is uncertain and its production is limited to tanning only hides to the "wet Blue" stage, there is a lack of assured and quality tanning capacity for both the domestic and international markets in Mali. Due to the plant closing of industrial tanneries in Europe, this opportunity would be particularly attractive for establishing new and smaller scale industrial tanneries to develop new markets for products with value added for local tanneries.

There are two concerns, though, which would require careful consideration. The first would be the impact that the creation of new tanneries would have on the traditional tanners and whether or not their livelihood would be jeopardized by increasing the number of industrial tanneries. The second problem would be that of the treatment and processing of the hazardous chemical wastes from the new tanneries. Obviously, there must be safeguards and proper disposal procedures to ensure that the environment is not contaminated and human and animal health endangered.



**ANNEX D**

**MALI MICROENTERPRISE STRATEGY  
SUBSECTOR ANALYSIS**

## ANNEX D

### MALI MICROENTERPRISE STRATEGY SUBSECTOR ANALYSIS

#### I. RATIONALE FOR THE GARMENT SUBSECTOR

The Malian garment subsector employs 16,764 people in clothing production<sup>1</sup> alone (this total is similar to the number for Burkina Faso: 17,000 according to the Burkina Faso Garment Subsector Analysis) and represents a major portion of household consumption expenditures, 90,118 CFA per household annually (Enquete Consommation). This represents 11% of total household expenditures. In addition to garment manufacture, Mali has two types of clothing importation: frippery (used clothing) and new ready-to-wear. This analysis largely focused on Bamako where sales of imported new ready-to-wear are very strong. It is likely that new ready-to-wear clothing is sold much less in rural areas.

To determine the relationship between frippery, new imported ready-to-wear, and locally produced clothing, several key questions must be addressed. To what extent are the different types of clothing substitutes for one another? What effect does import fraud have on small enterprises? What effect has the change of government had on the garment subsector and what effects are foreseen in the future? Could local tailors increase their production of ready-to-wear and capture more of the ready-to-wear market?

#### II. MARKETS FOR MALI'S GARMENTS

Local manufacture is strictly for domestic consumption. The ready-to-wear industry in Mali is relatively undeveloped even for domestic consumption, exporting aside. Mali is well known particularly in West Africa for its high style custom tailored clothing and distinctive cloth dying.

Total revenues for the clothing industry in Mali can be estimated at 85 billion CFA based on consumption figures. This total consists of 11.5 billion CFA in tailor services and 35.5 billion CFA on frippery and ready-to-wear and 37.5 billion CFA on cloth. Frippery imports have increased dramatically in recent years from 82.5 million CFA in 1985 to 459.5 million CFA in 1990. Part of this increase might be accounted for by the large number of people rumored to be importing new ready-to-wear declared as frippery to customs agents in order to reduce their import tariff. The total also does not take into account the significant amount of frippery imported illegally from countries like Guinea and Burkina Faso. 1990 ready-to-wear imports were valued at 55.5 million although the number is likely much larger when import fraud is considered.

The market for garments is divided into four major segments: urban ready-to-wear clothes mostly consisting of imports, institutional (school uniforms and workclothes), traditional and modern

---

<sup>1</sup>This number is similar to the 17,000 total number of tailors found in the Burkina Faso Garment Subsector Analysis. The Mali total came from the 1990 population census.

malian styles custom-made by tailors, and general rural and lower income urban market place sales. The characteristics of the first segment are a range of quality and western styles at higher prices targeted at primarily the young urban populations. Capacity to produce large volume at a low price characterizes the second segment. Although the prices and quality vary significantly, the third segment can be characterized by more moderate prices. It consists of malian styles targeted at a wide range of clients. Price competitiveness and lower quality characterize the fourth market segment.

### III. STRUCTURE OF THE SUBSECTOR

#### A. THE SUBSECTOR MAP

The large number of tailors who mainly comprise the garment manufacturing industry have direct relations with their clients thus the marketing chain is very simple. The quality ready-to-wear industry consists mainly of importer/wholesalers and retailers. There are a small number of tailors in Bamako manufacturing quality ready-to-wear for these same retailers. The frippery industry consists of importers, distributors and retailers. These participants are all represented in the subsector map.

##### 1. Functions

Within the garment manufacturing sector, the functions begin with the purchase of cloth by the client who brings the cloth to the tailor for custom-fabrication. The functions are then cutting and measuring the cloth and the sewing of the garment. For larger scale manufacturing of ready-to-wear the function includes purchase of cloth or fabrication of cloth in the case of Comatex, a large factory producer of cloth and to a lesser extent, clothing.

The functions in the quality ready-to-wear industry are concentrated on the distribution of clothing from importers to retailers.

In the frippery industry the functions are also concentrated on distribution. Of the eight importers, two actually sort, wash and repackage clothing into bales. The other six import pre-sorted bales ready for distribution. The clothing is then sold through wholesalers and retailers.

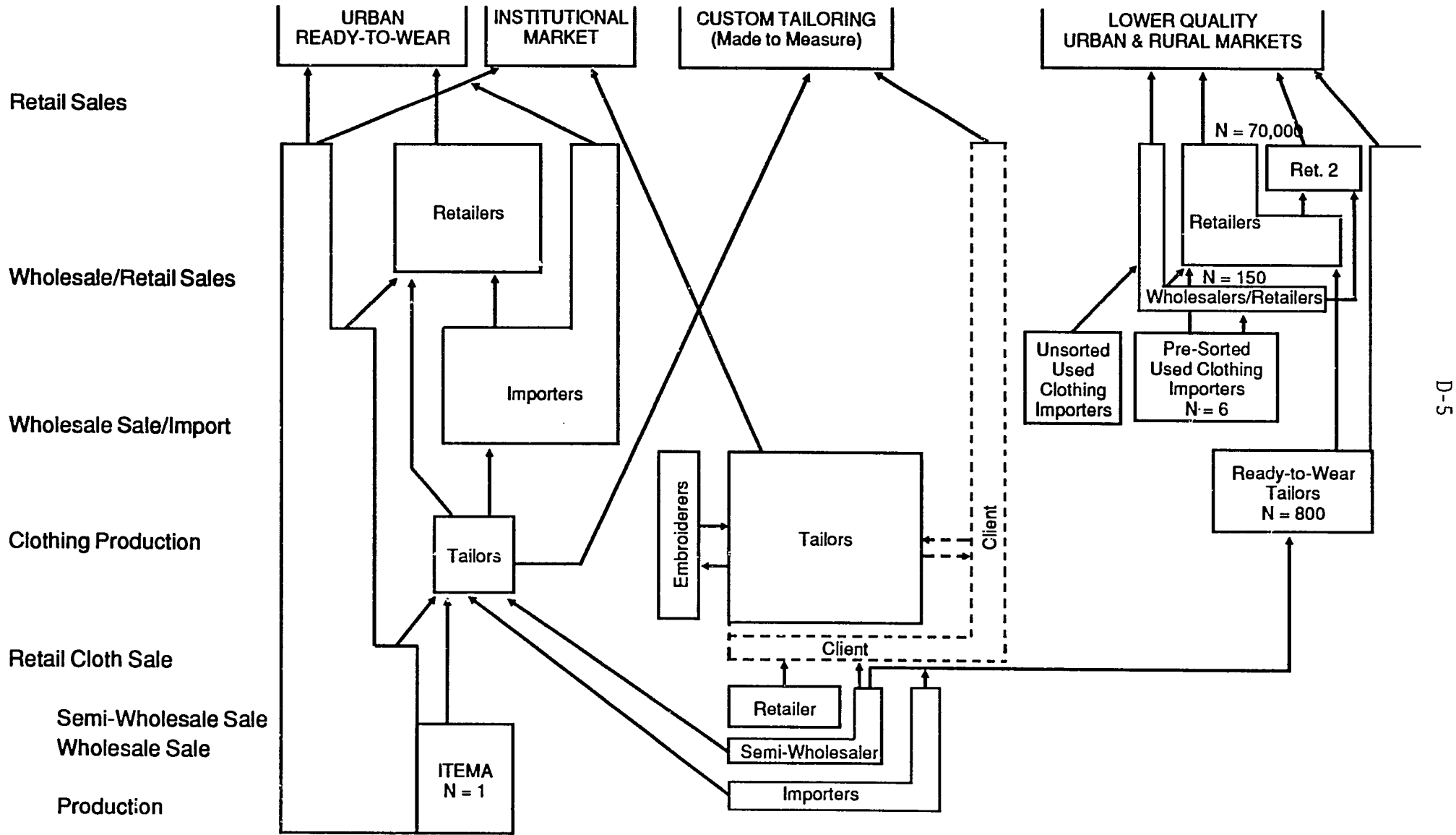
#### B. ALTERNATE SUPPLY CHANNELS

There are five different supply channels in the garment subsector and are all represented on the subsector map.

##### 1. Local Factory Production

Comatex is the only large scale manufacturer in Mali. manufacturing cloth as well as t-shirts, undergarments, and sports jerseys. Cloth sales represent 90% of their total revenue. Their products are sold through 9 Comatex retail stores located throughout Mali and to other retailers. They also produce sports and other types of uniforms for the institutional markets.

# GARMENTS SUBSECTOR MAP



126.

Comatex employs 60 permanent workers in garment production and annual revenues are 19 million CFA. Comatex is upgrading with new equipment that will allow them to produce lighter weight lower cost t-shirts.

## **2. Quality Ready-To-Wear**

Importers and retailers target young urban people with western style imported clothing. Most importers have their own retail boutiques while they also supply other smaller retailers. Generally the quality of clothing sold in boutiques is higher than the clothing sold on the street and in markets. French imports are usually found in boutiques while cheaper Asian imports are sold in markets and on the street.

There are a small number of local tailors who produce quality ready-to-wear for the urban market. They sell to the importers and retailers. Frequently they have experience or have received training in other countries like Burkina Faso, Senegal, and France, and have a higher skill level than average. The institutional market is an important market for these tailors also.

The size of enterprises varies, but a typical enterprise would have three or four employees plus the owner. The capital investment needed would be a minimum of 1 million CFA.

## **3. Custom Tailoring**

The largest number of tailors fall into this category. There are two types of tailors in this channel: one producing high quality stylish clothing at elevated prices and the second producing lower quality at moderate prices. Both types of workshops specialize in either men's or women's styles, although some workshops do both. Usually the client brings the cloth to the tailor and orders the style desired from a wide variety of choices.

### **a. High quality workshops**

The high quality workshops often employ one apprentice and two or three tailors in addition to the proprietor. One person is responsible for cutting and embroidery, another for sewing, and the apprentices complete the finish work. The owner's principal investment is in the machines: typically one sophisticated embroidery electric machine and two basic electric machines.

The capital investment required is at least 1.5 million. Many high quality shops are owned by fonctionnaire women or wives of fonctionnaires. These women have capital available for investment and are well connected to bring desirable clients to the enterprise.

Many of these tailors have received formal training or experience in other countries or are expatriates from Senegal. High quality tailors are few in proportion to the lower quality tailors. One major reason for this could be the lack of opportunities for training. The number of tailoring schools in Mali has recently increased, but before this there were very few opportunities for formal training.

#### **b. Lower quality workshops**

The lower quality workshops usually employ the owner and an apprentice or another tailor, although many also work alone in the market places. They use two manual machines and have very little differentiation of tasks. They often subcontract embroidery work if the client has asked for embroidery. They usually have had little formal training.

### **4. Frippery**

Frippery reaches the market through one single channel.

#### **a. Factories**

There are two importer/repackagers who import the clothing unsorted from the United States, France, and Belgium. They break down the bales, wash and sort the clothing by type and then repackage into bales with a predetermined number of items (such as 100 pairs of mens pants or a fixed number of kilograms of smaller items). Both factories are located in Bamako. Bakeba has about 40 employees and has been in business for two years. Somafri has about 100 permanent employees and other temporary employees. The value of Somafri's equipment is 5.5 million CFA.

#### **b. Importers**

In addition to the two importer/repackagers, there are also six importers. The clothing brought in by these importers is already sorted and packaged in 45 kilo bales by type of clothing, like the finished bales of the factories. These imported bales are also graded by quality. According to the retailers and distributors, the quality of clothing available at the importers is higher than at the factories. This is probably because the factory bales are of mixed quality rather than the graded quality of the importers.

The importers employ about five employees each. The cost for an annual patente is approximately 600,000 CFA in addition to a 40% tax on profits and import tariffs. The capital required is less than for the factories because the importers are not investing in equipment like the factories.

All six importers are located in Bamako. Frequently retailers from all over Mali travel to Bamako to purchase bales both from the importers and the factories.

#### **c. Distributors**

The distributors buy bales from the factories and from the importers. There are about 150 distributors mostly located in Bamako. They break bales down and sell individual items to retailers. Some retailers will also buy entire bales and the distributors also will sell directly to clients at a retail level. Many distributors enjoy close relations with the importers and factories and can buy on short-term credit. It is difficult for retailers to become distributors because they don't enjoy these relations and can not buy on credit. They must have the capital available to buy larger quantities.

#### d. Retailers

Frippery importers and distributors estimate the number of retailers at about 10,000. Sometimes they pool their resources for a buying trip to Bamako, sharing transportation costs and benefitting from a lower price by buying in gross from the factories and importers. There are many women involved in retail sales of frippery although the actual percentage is difficult to determine.

They contract out for washing and ironing of clothing at 25 CFA per item. They can pay a daily municipal tax of 100 CFA for each day they are in the market or pay an annual patente of 26,000 on average. Retailers bear the burden of transportation costs as distributors and importers do not ship out to the regions.

An example daily budget for a retailer in a rural market is:

Sales:	5,000 CFA
Cost of goods sold:	3,000
Transportation:	110
Patente (tax):	55
Washing and ironing:	<u>125</u>
Net Profit =	1710 per day

Retailers often work twelve hours a day, seven days a week and make buying trips to Bamako once every six weeks to buy several bales each time.

#### 5. Cheap Ready-To-Wear

These workshops usually involve one tailor and one or two apprentices. Their workshops are often located in urban markets. They sell to the frippery retailers who come to Bamako on buying trips. The retailers then sell the clothing along with their frippery items. Prices are higher than frippery items. Some of the styles are copied from western style imported clothing but are generally of lower quality.

Their primary investment is in their machines which usually number two or three. Some have added electric motors to their manual machines to improve efficiency. These tailors typically work ten hours a day, seven days a week. A typical monthly budget would be:

Sales:	160,000 CFA
Cost of goods sold:	96,000
Market tax:	6,000
Salaries:	13,800
Depreciation:	<u>600</u>
Net Profit per month:	43,000 CFA

Women are also involved in garment production in this channel. They produce baby clothing and baby accessories in their homes, which are then sold to ready-to-wear street and market retailers. The women will go the market and take orders for clothing items from the retailers and then return with the finished items. Frequently the women were trained in one of the tailoring schools or centers.

#### IV. ENTERPRISE DEVELOPMENT AND DYNAMIC FORCES

##### A. ENTERPRISE DEVELOPMENT

###### 1. Garment Manufacture

There are many more people employed in custom tailoring than in any other type of garment manufacture. There is some movement from the lower quality tailor in channel 3 into channel 5 but tailors are somewhat prevented from doing this by the capital needed to purchase cloth. Tailors need a higher degree of skill and capital to purchase cloth for production in channel 2, and need to develop further the marketing chain with retailers and importer/retailers of stylish ready-to-wear. Within channel 3, movement from the low quality segment to the high quality segment is affected by access to training and capital to invest in sophisticated machines. Channel 1 requires industrial levels of investment.

###### 2. Frippery

Within channel 4 it is difficult to evolve from distributor to importer because of the need for good contacts with foreign suppliers. It is even more difficult to start a factory because of the industrial investment requirements. A system of credit exists between importers and distributors with established relationships. Retailers find it difficult to become distributors because of capital requirements and are not accorded credit by importers.

There seems to be a gap in the distribution system in getting the frippery from the Bamako importers and factories to retailers in the outlying regions. There are very few distributors outside Bamako and thus retailers either make buying trips themselves or group together to share the costs of buying trips. Some also travel to Guinea and Burkina Faso.

###### 3. Imported new ready-to-wear

Due to capital requirements, it is difficult for retailers to evolve to the importer level. Most importers travel themselves on buying trips to France or Asia to whichever country they are importing from. Their capital requirements include transportation and lodging for buying trips, and the cost of the clothing purchased, and the import tariffs. Many importers are not officially licensed importers so they do not pay for an import license.



It is interesting that there is such a large number of importers (about three or four hundred in Bamako) who operate on a moderate scale. They perform all the functions of importing, distributing, and also retailing directly to the consumer.

## **B. DRIVING FORCES**

### **1. Domestic Demand**

If income levels increase there will be an increase in demand for inexpensive clothing in the lower income population.<sup>2</sup> Frippery is more cost competitive but retailers and distributors complain about the quality of the frippery available and report that it is difficult to find enough quality frippery to satisfy the demand. If local tailors could improve their efficiency and lower their costs they could increase their share of the market significantly.

### **2. International Demand**

If international demand for frippery continues to increase, this may create more opportunities for local tailors to satisfy the cheap ready-to-wear market.

### **3. Technological Change**

Most garment manufacture is done by manual sewing machines and very few tailors will have the capital available to change over to improved sewing machines. A sophisticated embroidery machine can cost as much as 1 million CFA. More research is needed into costs of machines and import tariffs on sophisticated sewing machines. Some tailors smuggle the quality machines in because they are so expensive and difficult to buy in Mali.

Cheap ready-to-wear tailors could improve the efficiency of the production process and lower costs.

### **4. Barriers to Entry**

In the early 1980s, the government intervened on behalf of Somafri, the frippery importer/factory. Somafri enjoyed significant reductions in import tariffs that effectively blocked other importers from participating in the frippery market. Somafri claims that the protection was granted to allow it time to recoup its capital investment in equipment and because it employs a much larger number of people than the simple importers. Others in the industry claim that the protection was granted because of Somafri's ties to Madame Traore, the former Malian president's wife.

---

<sup>2</sup>Recent calculations in Lesotho put the elasticity of demand among the poorer third of the population at 1.57 (see Grant, et. al, Lesotho Subsector Study, 1991), calculations in 1988 in Mali estimated the overall elasticity of demand for clothing to be 1.39, while world wide estimates are around 1 (see Grant and Hanel, 1988).

That protection was lifted in 1989 reportedly due to market liberalization measures imposed by the International Monetary Fund, although Somafri still pays a lower import tariff than the simple importers until 1995 (Somafri pays 71.6% on the value of total import and simple importers pay 99.1%).

Capital requirements prevent tailors from changing from custom-made to ready-to-wear garment production.

### **5. Input Supply Constraints**

Retailers and distributors report that quality frippery sells the best but is hard to find. It is possible that increased world demand for frippery is responsible for the decline in quality of frippery imported into Mali.

### **6. Government Policies**

There is a lot of uncertainty across all channels about what effect the change of government will have on their enterprises. One immediate effect has been the reduction of daily municipal taxes for market and street retailers of frippery and of imported ready-to-wear, as well as tailors located in public markets.

An association of ready-to-wear retailers and importers has recently been formed in Bamako (Association des Commerçants Détaillants des Prets-a-Porters et Divers du Mali). Membership already numbers 200 consisting of both boutique owners and market vendors. Their agenda presently is focused on stopping harassment and bribery demands from Bamako police and Economic Affairs agents, and creating clean, organized market areas where they can sell their merchandise.

## **C. GOVERNMENT INTERVENTIONS TO DATE**

The government protection of Somafri that existed for about 8 years was lifted in 1989. The factory Bakeba started about this same time. This change may partly account for the significant increase in frippery imports in recent years. In 1991 taxes on the value of imports were raised for factories from 66% to 71.6% and were decreased for simple importers from 110% to 99.1%. This will only be in effect until 1995 when the rates will change to 51.6% for factories and 59% for importers. Import tariffs for new ready-to-wear have just been increased significantly. Many schools require uniforms which are manufactured by tailors in channels 3 and 5.

## **V. OPPORTUNITIES FOR SUBSECTORAL EXPANSION**

Three main opportunities for expansion are: lowering costs and increasing production of cheap ready-to-wear, increasing production of quality ready-to-wear, and increasing the number of quality custom tailors.

132

**A. Lowering cost and increasing production of cheap ready-to-wear.**

Further study is needed to determine whether cost could be dropped through production line manufacture. There is demand for cheap ready-to-wear that is not being met by the supply of frippery. The distribution chain to meet this demand already exists somewhat through the frippery channel where cheap local ready-to-wear is presently being sold by frippery retailers.

**B. Increasing production of stylish ready-to-wear.**

For the stylish ready-to-wear market the local tailors produce a very small percentage of the total amount consumed. An increase in opportunities for tailors to increase their skill level and to operate ready-to-wear workshops could stimulate growth.

**C. Increasing number of quality custom tailors.**

With opportunities for training and capital to invest in sophisticated sewing machines, tailors from the lower quality segment of channel three, custom tailoring, could move into the higher quality segment and improve their income earning potential.

## **VI. LEVERAGED INTERVENTION**

**A. Geographic Clustering**

The demand for stylish ready-to-wear is concentrated in urban areas where the more highly skilled tailors are also found. Efforts to stimulate stylish ready-to-wear production should center in urban areas.

**B. Improved linkages through the Wholesalers/Distributors**

The frippery distribution chain provides excellent access to the large rural market for the cheap ready-to-wear production. The stylish ready-to-wear tailors could also take advantage of the existing distribution chain with importer/distributors and retailers.

**C. Further study is needed on tax policy towards tailors. Extremely high taxes on sophisticated machines and the number of machines may be impeding growth in quality custom tailoring and ready-to-wear.**

In addition, more study is needed to determine what effect the 1995 decreases in frippery import tariffs will have on cheap ready-to-wear tailors.

113

**ANNEX E**

**MALIAN WOODFUELS AND VILLAGE ENTREPRENEURSHIP**

124

## ANNEX E

## MALIAN WOODFUELS AND VILLAGE ENTREPRENEURSHIP

## 1. RATIONALE FOR ANALYZING THE COOKING ENERGY SUBSECTOR IN MALI

Woodfuel has been the dominant form of cooking energy for the people of Mali from time immemorial, in apparently abundant supply virtually at the village perimeter as long as anyone can remember. On the basis of 1987 data, 1,248,347 Malian households — or 91.5 percent of the total — employed firewood as their principal "combustible de menage" while 24,383 households, or 1.79 percent of the total, were using charcoal (with only 4,169 or 0.31 percent of the total using butane gas and the residual either in kerosene or unknown).<sup>1</sup> However, the cooking energy and woodfuel system is in crisis in Mali, suffering from both the "natural" effects of increasing lack of rainfall, the process of desertification, and from a complex set of related sociological and political economic effects. The purpose of this work is to propose a solution to the Malian woodfuel crisis which takes as its point of departure village-level entrepreneurship operating on the basis of an ecologically-sound, economically long-term forest regeneration strategy.

Driving south into the Malian Sahel just below the unstable rim of the Sahara Desert, one encounters a village with the confounding name of Bambadiougou — in Bambara, translated somewhat loosely, The Village of the Mean Crocodile. Besides the gripping imagery which the name projects Bambadiougou grabs one's attention for a simple fact: except in the immediate aftermath of an infrequent torrent, not an obvious drop of water can be found today in Bambadiougou or anywhere else in a region where locals claim without demonstrable irony to have lived in virtual swamp 30, even as few as 20, years ago. Moreover, one is hard-pressed to imagine either a climate or ground cover that could sustain water-craving reptiles anywhere short as many as 400 kilometers to Bambadiougou's south, at least as far south of Mali's capital, Bamako, as the tiny village lies north. Thus, Bambadiougou's name and pluviometry offer paradoxical evidence of the impact of the "natural" forces of desertification on Mali's woodfuel-dependent economy. By eliminating not only crocodile-infested rivers and marshes but with them large swaths of Malian forest, desertification has struck at the heart of the Malian domestic cooking energy system.

---

<sup>1</sup> From *Recensement General De La Population Et De L'Habitat. 1987 Volume 0, Ensemble Du Pays*, Bureau Central de Recensement, Direction Nationale de La Statistique et De l'Informatique (DNSI), janvier, 1990, Tableau H-12, p 230

135

The seriousness of the Malian woodfuel crisis also arises from an important transformation in the village culture and political economy in a society where 78.03 percent of the population and 79.26 percent of the households lived in the rural area in 1987.<sup>2</sup> Almost certainly the "natural" fall in rainfall in Mali would not have led to the extent of deforestation currently observed without the increasing play of other factors of a social and economic nature. Lack of rainfall kills trees and forests. This is the direct effect of droughts on woodfuel supply. However, lack of rainfall also kills agricultural crops, renders agricultural incomes less stable for villagers, and drives villagers to seek out (alternative) sources of cash revenue, particularly in drought years in a rural economy still dominated by a subsistence economy. At the same time responding to forces felt in many African societies, Mali has experienced increasing urbanization in recent decades, a process no doubt intensified as more frequent rainfall deficiencies rendered rural living less tenable, particularly in the drought-beset north. With the accelerating transfer of population to the cities, more and more woodfuel consumption has thus tended to be monetized and move through cash-income generating markets over time and these markets in their turn have sent robust woodfuel demand signals to increasingly impoverished Malian villages which have responded, only consistently, with increased supply. After introduction to market-oriented woodcutting as a drought year survival mechanism, woodcutting as a cash crop, thus, began to take on a permanent role in normal Malian village economic life. In a year of normal rainfall, woodcutting varies with the natural rotation of the non-drought seasons, peaking during the drier months, waning with the wetter months when traditional crop care absorbs most of the villager's time. In drought years woodcutting becomes a year-round activity. With increasing numbers of villagers involved in some form of woodcutting for some part of the year, the cut has risen to meet each year's expanding urban demand, a phenomena which alone explains the almost astounding fact that except for the modest seasonal blip associated with the wet season — or "hivernage" — there has been no perceptible rise in the price of woodfuel in Mali for almost seven years in the face of a burgeoning urban population buying increasingly in monetized markets.

Although large numbers of Malian villagers are involved in the woodfuel "cash crop" to make ends meet, no one really knows how many "exploitants" are involved since the activity is interstitial to farming and virtually impossible to measure. It's safe to say, however, that the numbers are significant — if our fieldwork was at all representative or perceptive. In our interviews we were particularly struck by the number of respondents who had entered market-driven woodcutting within the last decade, many within the last three to five years. We can get some idea of the numbers if we consider that both woodfuel forms together consumed in 1990 in Mali an estimated 4.97 million metric tons of Malian timber.<sup>3</sup> Cutting and hauling this wood to rural roadsides for urban distribution with now more than 20 percent of the Malian population living in cities would have amounted to as much as 17,000 man years of labor (an estimate formed on the basis of field observations of 240 kilos of wood per cutter per day).

The preponderance of the same rural households involved in the urban-directed, market-oriented cut of woodfuels are also firewood users themselves. 994,577 out of 1,081,134 rural households, or

---

<sup>2</sup> From *Recensement General De La Population Et De L'Habitat, 1987 Volume 0, Ensemble Du Pays*, Bureau Central de Recensement, Direction Nationale de La Statistique et De l'Informatique (DNSI), janvier, 1990, Tableau H-16, p 234.

<sup>3</sup> Data from an unreleased Eaux et Forets study.

91.99 percent of the total,<sup>4</sup> use woodfuels at an estimated rate of 650-750 kilogram per person per year.<sup>5</sup> Some part of this effort would be the gathering of standing or fallen dead wood — "bois morte" — by women and children in regions where the village perimeters have not been depleted through drought or overcutting. Perhaps as much as another 60-70,000 person years are devoted to Malian woodfuel harvesting for rural consumption. In any given period huge quantities of forest will inevitably be cut or gathered outside the market economy quite simply because woodfuel cutting, gathering, and consumption is a Malian way of life, particularly in rural areas.

Thus, on all counts the cut at the village level continues to increase. Moreover, Mali remains a country with a high rate of demographic expansion (at 2.6-2.8 percent per annum — with the monetized urban areas growing at well over 5 percent).<sup>6</sup> Even without the dearth of water and desertification's contribution to deforestation, unchecked population growth would almost certainly sooner or later threaten Mali's woodfuel-producing forests with a "Malthusian crisis" of significant proportions. What is Mali to do? Eventually, of course, secondary ecological effects set in that only compound the initial impact of overcutting. Like all ecologies a forest can only stand so much distortion. Although it is a subject to which an ecologist could speak much more profoundly than an economist, it cannot be overlooked that once a particular ecology reaches a certain threshold of disentropy, its disintegration can accelerate rapidly. Addressing the question of domestic energy consumption and production in Mali is an urgent undertaking. Finding an ecologically balanced economically sensible solution to Mali's domestic energy imbalance — current or, in the best of all worlds, looming — is the fundamental purpose of this piece.

The cooking energy subsector in Mali was also chosen for study for a reason which is less conjunctural and more textbook "economic" in its formation, the multiplier consequences of cooking energy production and consumption on all economic activity in Mali. By affecting directly and forcefully the real return to labor in Mali, the cost of cooking energy penetrates Mali's entire economic system. Particularly, if domestic energy becomes more costly, the entire Malian economy becomes poorer. These secondary multiplier effects reinforce our interest in the cooking energy subsector — and in no small part because Mali finds itself on the horns of a delicate political dilemma. Raising woodfuel prices significantly would be economically very painful to the common Malian and be certain to provoke strong dissent, whether or not the current price acknowledges the destabilizing externalities imposed on the Malian ecology — which it clearly doesn't. Many observers caution that a sudden rise in woodfuel prices would provoke civil disturbances in the urban areas in Mali and consequently raising woodfuel prices would be politically very risky for the responsible Malian political authorities. Yet without raising domestic energy prices, there is

- (i) no hope for conversion to alternative energy forms currently relatively too expensive to invite consumer interest,

---

<sup>4</sup> From *Recensement General De La Population Et De L'Habitat, 1987 Volume 0, Ensemble Du Pays*, Bureau Central de Recensement, Direction Nationale de La Statistique et De l'Informatique (DNSI), janvier, 1990, Tableau H-16, p 234.

<sup>5</sup> From Hagen, Roy, and Konandji, Hamadi, "Une Investigation Preliminaire De La Fixation Des Prix Et De La Commercialisation Des Produits Forestier Au Mali: Les Aspects Legislatifs," *Energy Initiatives for Africa*, Mai, 1986, p.7.

<sup>6</sup> Gran, William and Hanel, Petr, *A Study of the Business Climate in Mali*, USAID, September, 1988, p. 71.

- (ii) insufficiently strong incentives to promote consumer conservation, and
- (iii) not much hope at all for rationalizing the village economy's economic exploitation of Mali's precious forests.

Mali like many countries is hooked on cheap energy and all the more conflictually because she is so poor, one of the poorest nations in the world with a per capita income of not much more than \$260US.<sup>7</sup> Alternative, more long-term "efficient," less externality-bearing energy sources are by and large unaffordable for most Malians today, sources such as butane and, intuitively even more appealing for Mali, prospective solar systems. Thus, policymakers in Mali find themselves somewhere between a rock and a hard place. Can subsector analysis provide (buffering) solutions?

By and large all the players in the subsector of Malian woodfuel are medium-scale or below. Smaller-scale enterprise is infrequently, if at all, dominated by large players in the system (with one possible exception to be discussed as our argument is developed). At the cut what we see in Malian woodfuel is almost a classic Informal Sector world where woodfuel entrepreneurship represents the determined response of heat-inured, incredibly hard-working, stoic villagers to the dilemma of rural underemployment brought on in the initial phases by rainfall deficiencies. Currently, low woodfuel prices and insufficient awareness of potential profitability from active forest regeneration reinforce each other to keep forest regenerating entrepreneurship marginalized. Villagers must be convinced that they could measurably improve upon their currently favorable daily wage from unreconstructed woodcutting (800-1000 CFA) by investing in a forest regeneration strategy — a matter of their perception of the returns on an investment with a relatively lengthy gestation period (at least five years) and the degree to which actual returns to forest regeneration and tree "harvesting" can be nudged to the point where they compete favorably with all other forms of rural self-employment.

Any supply-side strategy trying to convince Malian villagers to view trees as another permanent agricultural crop also encounters strong cultural resistance at the village level. For many Malian villagers it is inconceivable that the forests would not regenerate themselves left to their own devices whatever the cut. Early visits to the Malian countryside, in fact, convinced the research team that without an imaginative, economically common-sensed, market-based solution, consistently applied, the good faith efforts underway on many fronts at raising the consciousness of Malian villagers concerning forest regeneration would be for naught. It does not seem an overstatement to warn that the last tree could be felled before recognition of the irreversibility of the phenomena involved occurs. Study of Malian woodfuel supply and distribution thus poses both an exciting opportunity and a daunting challenge to those who believe development through the energies of competent, hardworking entrepreneurship from below can lead us forward. Harnessing the energies of village entrepreneurship to the task of re-establishing an ecological balance and domestic energy self-sustainability in Mali is anything but a straightforward subsector assignment. Not only must smaller-scale entrepreneurship be shaped and supported but this intervention must take place strictly respecting the ecological requirements of forest regeneration while still making economic sense at the individual and social level. This is the difficult task to which we shall address ourselves here.

---

<sup>7</sup> World Bank official documents.

176



## 2. THE MARKET FOR DOMESTIC COOKING ENERGY

TABLE 1  
URBAN/NATIONAL HOUSEHOLD ENERGY CONSUMPTION FOR MALI, 1988-89

Kayes	Koulikoro	Sikasso	Segou	Mopti	Tombouctou	Gao	Bamako	Country
10186	2563	2573	11874	4274	15374	8743	30891	9036
1127	126	506	1085	379	3885	1780	10653	1751
555	279	151	20		33	824	4253	558
1148	1137	87	272	1302	6826	765	1360	1179
8704	9031	12114	9199	4063	6091	3303	12562	8561
21720	13136	15431	22450	10018	32209	15415	59719	21085
2.43	1.63	1.61	2.29	1.73	4.73	2.32	3.90	2.39%
Total Typical Household Consumption, Country:								883649
% Typical Household Energy Consumption, Country					2.39%			
% Typical Household Firewood Consumption, Country					1.02%			
% Typical Household Charcoal Consumption, Country					0.20%			
% Typical Household Butane Consumption, Country					0.06%			
Total Typical Household Major Cooking Energy Consumption, Country:								11345
% Firewood in Major Cooking, Country					79.65%			
% Charcoal in Major Cooking, Country					15.43%			
% Butane in Major Cooking, Country					4.92%			

Table 1 tells us pretty much how cooking energy CFA breaks down in Mali — although in some respects it leaves us with as many questions as answers. The table also tells us a little more than we need to know in that it also includes energy for household lighting — which accounts for the large amount of kerosene consumed relative to firewood. Most importantly, one doesn't know if firewood consumed rurally has been imputed in a reasonable fashion, a crucial consideration. For these reasons it's difficult to say whether the relative weight of the three major cooking energy forms (firewood, charcoal, and butane) in typical household consumption countrywide is completely accurate. One tends to suspect household energy should probably enjoy a more substantial weight in the typical household budget than the 2.39 percent of consumption cited. Particularly, one would suspect that firewood would be more than 1.02 percent of the consumption basket of the typical Malian household. One would have to question whether urban consumers would riot over price rises in a good which occupies that small a percentage of the household budget — and, as we mentioned in the introductory paragraphs, it is almost universally assumed by Malian political observers that virtually any rise in the price of firewood would incite urban dwellers to disturbances. One might like to see comparative national figures to know whether the amount of cooking energy consumed here is heavy or light with respect to other Sahelian countries.

What's clear from these figures, however, and the reason for their inclusion is to make the point that firewood energy dominates the Malian market. It's the cooking energy of choice across a broad spectrum of households. Charcoal, which is consumed entirely in the urban areas, is much less significant as a cooking energy source. And butane is still insignificant, amounting to only 0.06 percent of the total cooking energy CFA expended (consulting Table 1).

To take up briefly the theme of butane conversion, that is, a change of energy form from woodfuels to butane, the conclusion of this study is that for four reasons it is unlikely that Mali will witness widespread conversion to butane gas anytime in the near future — in spite of government policies

strongly advocating such conversion. First, butane gas would seem to make little sense to the typical consumer in terms of **operating costs** at current prices unless the consumer is irresponsibly wasteful in her use of woodfuels (see Table 2, p. ). Second, butane is quite costly up front for most Malians. The tank, burner, and pot rack cost roughly 16,000 CFA, almost 2.5 times the monthly per capita income. Investment in the necessary equipment could hardly be expected to take place until relative operating costs swung dramatically in butane's favor. This eventuality would almost certainly have to be brought about by the politically touchy strategy of taxing woodfuels very heavily, doubling, even tripling their price according to most experts — perhaps even more than tripling in view of the social resistance — before an adequate conversion incentive could be put in place. It is also crucial to point out that it is virtually impossible that butane's cost would drop further than the current 240 CFA per kilo (a price which is heavily subsidized at roughly a 20 percent level by the European community). Third, butane commits Mali to long-term energy dependency and balance of payments difficulties in lieu of a domestic fossil fuel supply. It's a one way street to future economic trouble. And fourth and lastly, Malian habits runs strongly in favor of woodfuels. In well-informed Bamako firewood remains overwhelmingly the cooking energy of choice in spite of strong efforts at promoting butane gas as an efficient substitute — not merely because butane is more expensive, which it is, but because it also runs against the grain culturally. For all these reasons it seems unlikely butane is going to pull Mali's energy rabbit out of the hat — and consequently we will essentially put it aside as a subject of discussion — with our apologies if they are necessary.

Further discussion of woodfuel consumption takes place in the course of examining the "functions" on our subsector map (see p. 9). We have designated consumption as one of the six subsector functions.

### 3. THE SUBSECTOR MAP

Our Subsector Map for cooking calories has essentially been reduced to that for **woodfuel** production, distribution and consumption. It is drawn in Figure 1. We might also have included here another channel describing butane bottling, distribution, and consumption. However, the activity is so straightforward and simple and its competitive position so weak that we have dropped it from the analysis in the name of brevity.

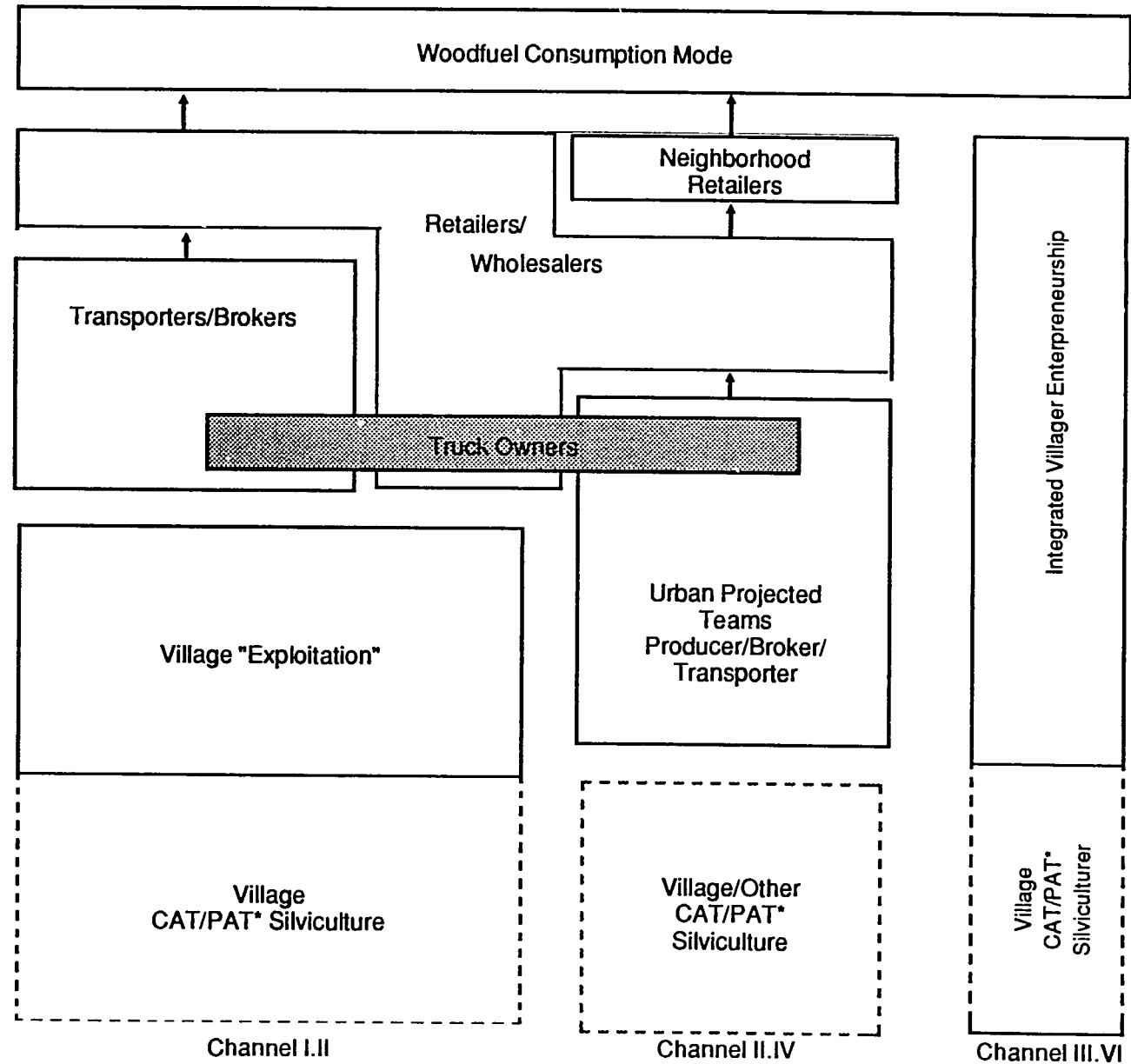
#### Woodfuel Participants

The following is a quick list of the **participants** in the vertical woodfuel system. There are two types of producers, those who specialize in charcoal and those in firewood. There are transporters and broker-transporters who move product from the rural areas into the cities. There are the truck owners who rent equipment to the delivery agents. There are integrated wholesaler-retailers ("demi-grossistes") in the urban areas. No strictly wholesalers exist to our knowledge. There are block-level retailers. And finally according to our analysis there are consumers who participate by choosing both the energy form and the delivery system for that form, affecting greatly in their choices system dynamics.

# WOODFUELS SUBSECTOR MAP

## FUNCTIONS

1. Choice of Energy Form
  2. Retail Distribution
  3. Wholesale Distribution
  4. Rural-Urban Transportation
  5. Wood Fuel Production
    - Forest Transport
    - Firing-Bagging
    - Bundling
    - Cutting
  6. Silviculture/Forest Management
    - Cut a Tree
- \*CAT-PAT = Cut a Tree-Plant a Tree



### **Woodfuel Functions**

Concentrating on woodfuels, we have identified six principal functions in the vertical system of domestic woodfuel energy production.

### **Silviculture - Forest Management**

First, in terms of functions, we must make the crucial observation of our work. Except in a few rare circumstances of virtually no social or economic consequence, among them the vestiges of a parastatal enterprise, the Opération d'Aménagement Et Production Forestière (OAPF), there is that we could find in Mali in anything approaching representative quantities neither silviculture nor forest management nor anything anywhere in between in either firewood or charcoal "production." There may be a few scattered projects with admirable results here and there run by this or that NGO. The Peace Corp apparently has several projects under way. We've heard of these programs but can't be sure of their scope or effectiveness in the time allotted.

Generally speaking, however, we are convinced that Malian forest regeneration is virtually entirely dedicated to commercial lumber, "bois d'oeuvre." Moreover, from what we can tell there is only a very limited amount of the latter. Villagers who cut trees for woodfuel in Mali unequivocally do not replant trees or in any other way "manage" the forest and with very few exceptions fully expect the forest will regenerate itself as it always has — in spite of widespread awareness on their part of government propaganda preaching the perils of overcutting and the wisdom of planting. Thus, Function 6 does not actually exist in any meaningful sense in the current Malian context. The principal task we have set for ourselves in this work is to understand how to imaginatively and forcefully introduce Function 6 to the subsector map.

### **Fuel Production - Forest Transport**

The production system for firewood and that for charcoal are virtually equivalent except for the departure in which the actual conversion of wood into charcoal and its sacking takes place. Charcoal is produced from felled trees by interlacing the felled and chopped timber with appropriate foliage, by covering the resulting stack of timber and foliage with properly ventilated earth, and by then firing the pile for up to a week, sometimes longer if several large trees are fired at the same time. According to the experts there are good, better, and best ways to produce charcoal from wood of varying qualities with differing humidities and with different types of foliage and stacking — and these choices affect not only the quality of the final product but the amount of raw timber consumed in the process. However, we only observed one system for firing the material in our fieldwork, the earthen mound system just described. The villagers do not appear to be terribly concerned with the dryness of the wood cut. If the wood is wet, they just fire the stack longer. Thus, standing trees remain fair game.

Charcoal can be produced in the forest and then sacked and transported to the roadside as charcoal or it can be produced either in the village or at the roadside after transport of the raw wood. The choice is apparently made as a calculus of the labor time invested and would seem to depend on how far the firing-site is from the "charboniers" household. Since one must dismantle the earthen cover to allow the charcoal to cool before sacking there are obvious advantages to doing the actual firing near one's household — since coming and going from a firing site quite removed from one's household can

be time consuming. On the other hand, as most authorities have long observed, it is much more efficient to transport charcoal than raw wood so that some far away tree sites at smaller scales might argue for prior transport of the raw wood nearer home and other tree sites at much larger scales not so far away might argue for on site charcoal production — with variations in between. We heard of both processes although only observed charcoal fabrication in the vicinity of the villages.

Firewood is bundled into "fagots" for sale after the tree is felled. Any tree species not protected by village customary law is generally considered acceptable. Fruit and karite trees and some other varieties with medicinal qualities are those usually protected from cutting. Bundling may occur either in the woods before forest transport to the roadside (often by donkey cart — or "charrette"), at the roadside, or after transport to the urban area. It appeared to us that those villagers who actually sold their product at the rural roadside to casual customers in something of a retail operation tended to bundle their product into fagots while they waited for a sales — if they were not preoccupied with agricultural work. The non-intermediary, retail roadside customer would be accustomed to purchase by "fagot" as that is the way most wood is sold in the urban markets (even if it is subsequently split). On the other hand those villagers that were anticipating the sale of an entire truckload to intermediaries generally did not bundle their product and stacked logs individually in piles that belonged to them or to their extended family. Villages were seen with as many as twenty to thirty unguarded piles in the course of our travels. In some villages it appeared a little bit of both was going on, some bundling for casual retail and some unbundled piling for intermediary transport. Additionally, bundled wood is often hauled in large truckloads straight from the village. So obviously the bundling might occasionally be determined by prior arrangement with a particular client or simply what's there when a big transporter trying to load up comes by and buys up everything in sight. One way or the other it didn't appear that bundling entered into the actual price calculations per volume of wood — although a little more precise questioning on that point would have been useful. If an urban wholesaler-retailer employs a log splitter ("fendeur"), it would not be uncommon for the latter to use his spare time to bundle, particularly if the initial purchase was in larger logs.

### **Rural-Urban Transport**

The discussion of rural-urban transport will be deferred for the moment, until the section on Channels and Linkages since the channels are affected significantly by the nature of the transport arrangement. Since questions of intervention were originally thought to pivot around transportation's role and its putative relative gain in the system, this function is also discussed in some depth in a section addressing System Dynamics.

### **Wholesale - Retail Distribution**

It appears to be the case — unless we simply overlooked a central phenomenon which we doubt — that few pure wholesalers in the strictest sense of the term exist in the urban distribution system. Most everyone who sells wholesale in the city also sells retail to anyone who comes to his door — and at generally the same price he sells to larger volume clients (the appropriate term in French for these dual agents is "demi-grossiste"). In Bamako, there is no central distribution point for either charcoal or firewood that we could find and wholesalers-retailers are pretty much arrayed uniformly around town by quartier. Also, at the consumer distribution level, many wholesalers-retailers deal in both woodfuel commodities although some do specialize. If our observations are at all representative, one would tend to think that most distributors of charcoal also sell firewood on the side but not necessarily the other way

around. Many smaller dealers just sell firewood since charcoal usually represents a larger capital investment.

In the Malian woodfuel subsector the true retailer in the sense of an urban redistributor moving product from the quartier-based wholesalers to the neighborhoods is the marginalized urban informal sector personified. Since the block-level retailer makes his (or her) living by offering directly to households the advantages of near home delivery, the most this agent can make is whatever it's worth to the "femme de menage" to not make the less than burdensome trip to the already decentralized, nearby quartier wholesaler-retailer. Since in charcoal retailers sell in handfuls or small stacks arrayed on the ground and in firewood often in de-bundled logs of wildly varying dimensions, sometimes split, sometimes not, it would be the devil to estimate income at this level. Finally, we simply didn't try (perhaps for fear of actually learning). Suffice it to say that earnings at this level are a pittance. This is strictly a survival activity. Retailers in this system only measure the abysmal depth of poverty in Mali. It is inconceivable that savings could emerge from this block-level retail activity which might lead to expanding entrepreneurship and as long as the wholesal-retail itself remains quite decentralized pure retailing would not appear to be potential foci of development.

### Consumption

The actual good being consumed in this subsector analysis is cooking energy. From a technical point of view, we are examining the delivery of calories "to the pot." In fact, there are three tiers — defined by two choices — in our market. The final good consumed is cooking energy. In the market for cooking energy the consumer has at least two choices to make. The first level market choice is the form of energy delivery. In Mali there are four usually cited forms of cooking energy delivery: (i) firewood (ii) charcoal, (iii) butane gas, and (iv) kerosene (which is mostly used for lighting, not cooking, and will not be considered here). Each of these forms of energy delivery is further differentiated by a stove configuration, essentially a second level market choice. This second level choice affects the relative efficiency of the form chosen in terms of calories reaching the pot. The consumer has a number of alternatives, many of which she can evaluate only intuitively by trial and error. The consumer is looking for the best way to deliver calories to her cooking vessels — according to her values and within her means. Her choice may entail relative cost comparisons but also other factors such as convenience of use and compatibility with other household chores also inevitably enter the decision. Additionally, culturally imparted habits play a significant role as do dispositions associated with social and economic class. The "appropriateness" to one's position in life with which the technology resonates can often be an important consideration. **Perceptions** play a significant role in these market determinations — as does, of course, the consumer's budget constraint.

Table 2 is an attempt to think like an economist and evaluate the relative cost efficiency "to the pot" of the various cooking systems — to understand at least the economic logic of the Malian consumer.

TABLE 2<sup>8</sup>

Cooking Energy Form	Price per Kilogram (CFA)	Raw Kilocalorie per Kilogram	Price per Raw Kilocalorie (CFA)	Efficiency Factor (Calories to The Pot)	Price per Kilocalorie to The Pot
firewood	12	3.43	3.5	.30	11.67
charcoal	75	7.1	10.56	.25	21.12
butane	240	11.5	21.00	.50	42.00

In Table 2 the figure of 30 percent for the firewood efficiency factor (revealing actual calory delivery to the pot) is established on the basis of using the ceramic "foyer amélioré, version Teliman." A 30 percent rating implies that 70 percent of the calories are wasted on the way to the pot. Thus, if a household uses firewood and converts to the "foyer amélioré," it can almost double the cost-effectiveness to the pot of charcoal and almost quadruple that of butane. The choice of firewood as the cooking form would seem reasonably straightforward if the energy CFA matters — on the assumption the household can afford the modest investment in the "foyer amélioré" (circa 1000 CFA). Moreover, given the role played by the other sociological factors mentioned earlier, factors strictly favoring the use of firewood, even if the "foyer amélioré" isn't used or is too expensive (unlikely since it is frequently given away), the "real" cost advantage which charcoal or butane might then enjoy vis a vis the less efficient forms of firewood energy delivery would even then likely disappear with the premiums accorded these sociological preferences. In fact, it's little wonder at current prices that Mali is a woodfuel culture and economy — notwithstanding the attendant ecological risks.

Naturally, global calory consumption can be influenced by technological change eliminating energy waste in the form of the calory delivery system chosen by Malian households. Conservation efforts at producing less wasteful forms of energy delivery such as the "foyer amélioré" have, of course, aimed at eliminating the waste from indifferently focused woodfuel calories (that is, they have aimed at producing more calories to the pot for any given consumption of the raw material itself). It is said a fairly impressive 68 percent of the households in Bamako now use the "foyer amélioré" — and according to 1987 census data 557,232 of the 994,577 rural households which use firewood as their principal form

<sup>8</sup> Table 1 was constructed using current prices obtained from our fieldwork, estimated raw calorie efficiencies supplied by G. Edward Karch and Michael Boutette, in *Charbon: Production Et Utilisation a Petite Echelle*, USAID, Africa Bureau, 1983, in USAID's *Energy Initiatives for Africa* series, and estimated efficiency factors provided by Projet Foyer Amélioré (a joint project of the German development agency GTZ and the Direction Nationale des Affaires Sociales). We did not use the Karch/Boutette efficiency factors which we felt were seriously prejudiced against firewood (since these writers were making a case for charcoal). By all accounts they also overstated the efficiency to the pot of butane.

of cooking energy use the "foyer amélioré" (or 56.03 percent of the total), an important advance.<sup>9</sup> To the extent adoption of these conservation technologies has been or could be in the future more successfully implemented, important gains have been or could be achieved in energy consumption.

Perhaps the conclusion one can draw from the foregoing is that a sound domestic energy policy in the Malian context should also consider very closely supply-side effects. Supply systems of woodfuel must be brought in dynamic balance with an unindulgent projection of future demand for domestic energy (the growth of which we doubt very much can be affected all that much). Having argued for a supply-side strategy as a kind of First Principal, it is equally important to point out that we're all whistling past the graveyard unless we do everything in our power to address forthrightly the internal demographic forces which along with the external forces of climatic desertification is driving the Malian domestic energy system to the brink of disaster through deforestation (compounded by the attendant rural economic forces already described in detail).

### Channels and Linkages

Both charcoal and firewood woodfuels have the same channel configurations: firewood represented in our Figure I subsector map by channels I, II, and III and charcoal by IV, V, and VI. In monetary volumes the set of charcoal channels enjoys approximately one-fifth the weight of its firewood analogue (again, consult Table 1, p. 4)

Since the movement of goods through the three principal channels we have identified is largely a question of the nature of the linkages within each channel we will discuss these linkages here as we discuss their respective channels.

#### Channel I(IV)

The major distinction between Channel I and Channel II as we understand them is that in Channel I a rural villager, almost always without upfront capital, initiates the cut and moves the product to his point of sale — which might be a major roadside or might be the village itself wherever the village is located. The point of sale might even be the site of the cut if there is larger-scale trucking access there, an eventuality that becomes more and more problematic as deforestation forces the cut further off-road. The mud associated with the "hivernage" also interrupts forest access during those months.

The distinguishing feature of Channel I is, thus, that it is driven by surplus agricultural labor. Product delivery through it is pursued intensively by the villagers during the dry season. In drought years the work continues during the "hivernage" because subsistence crops have often been decimated forcing the household to buy food, in general important base income is down, and time remains plentiful. Significantly for our work, Channel I can produce devastating ecological deterioration from overcutting, particularly in drought years when cash needs are intense. At the same time Channel I would be one of the principal loci of grass-roots entrepreneurship based on long-term forest regeneration (along with Channel III). This is Channel I's challenge for us in terms of social and economic innovation. It should

---

<sup>9</sup> From *Recensement General De La Population Et De L'Habitat, 1987 Volume 0, Ensemble Du Pays*, Bureau Central de Recensement, Direction Nationale de La Statistique et De l'Informatique (DNSI), janvier, 1990, Tableau H-16, p 234.



be obvious to the reader that the crux of our intervention problem in this analysis is that it isn't enough to simply set village entrepreneurship loose through any kind of leveraged intervention. Without the proper long-term focus and incentives consistent with forest regeneration, one can have little doubt that this potentially creative and productive entrepreneurship would be completely capable of cutting down the very last tree in Mali for firewood (with perhaps the exception of the culturally embargoed fruit and karite trees and a few others with medicinal virtues). Resolving this forceful contradiction is our assignment here.

The firewood in Channel I is usually stocked, that is, cut, transported somewhere by "charrette", and then stacked, usually bundled somewhere along the way, and finally sold off by the villagers as a cash crop (charcoal moves similarly with the obvious exception that at some point along the way to the road the raw wood is fired and sacked). Most importantly, at the conceptual level, in Channel I we have a clear delineation between the villager as producer and a set of other agents acting as distributors-merchandisers. In this channel little if any capital is fronted by the urban wholesale-retail distributors or, even more significantly, by transporter-brokers who also link rural production and urban distribution.

Transporters-brokers are a form of wholesaler in the system under discussion if they control the working capital which is instrumental in moving product (otherwise they are merely agents of the urban wholesaler-retailer who stands behind them with the liquidity). It is useful to think of the wholesaler-retailer as someone who actually holds the "patente" on an urban site from which he sells product directly to consumers (and sometimes to other smaller retail distributors) — and the broker as someone who moves product from rural areas to urban ones. However, it is important to understand that often the distinction between these latter agents is blurred. Sometimes the source of the working capital to put the operation in motion comes from the wholesaler-retailer, sometimes from the transporter-broker. Obviously, the agent who puts up the money calls the shots and as a consequence the price upon delivery to the urban quartier distribution point will differ according to who has had the liquidity to move the product. Relatively few of these primary agents, the transporter-broker or the wholesaler-retailer, could be found in the course of our fieldwork who actually owned the large-scale transport vehicle itself, namely, the 10 and 30 metric ton trucks which haul the preponderance of the wood along the major routes into the urban zone. Since neither broker-transporter nor wholesaler-retailer, however, enter Channel I before the villager's point of sale, as such they concede in this channel some of their potential earnings to the villager himself. In this channel as in all others, virtually nothing falls into the hands of the neighborhood block-level retail distributor who remains the truly impoverished economic agent in the woodfuel system.

The important point for our larger discussion is that the capacity to front the relatively expensive transportation component of this activity confers market power and earnings on those who can mount the effort — although just how substantial the earnings remains a subject of considerable speculation amongst our research team. The subject will be discussed in detail beginning on p. 1717. What we initially suspected and in many ways still hope to find is the presence of substantial economic rents in the transport function, the returns from which we could transfer to the village through a smart intervention. The idea was that by increasing the overall returns to woodfuel activity at the village level through purposeful intervention one would command an important incentive with which to promote the crucial element of forest regeneration. Earn sizeable returns through control of transportation and product brokering if you plant or keep on earning what you can from simple cutting. This was what we had in mind proposing to Malian villages. Obviously if there is no way to redistribute gains fairly within a channel toward village entrepreneurship — either because the gains don't exist or because the redistribution would be impractical from the operational standpoint of an intervention — then the only way to improve returns at the village level is through raising the price to the cooking energy consumer

(probably through taxation) and assuring then somehow that the return flows back **bureaucratically** to the village — a maneuver with an onerous political logic. It would be nice if we could avoid the latter form of intervention.

### **Channels II(V)**

Channel II essentially by-passes the village order and often, in fact, the villager himself and is characterized predominantly by production teams which are fronted by urban working capital, either put in motion by a transporter-broker, by a wholesaler-retailer, or in some instances even by a combination of the two pooling their capital. The transporter-broker or the wholesaler-retailer obviously obtains a better price for the commodities he will sell in the urban centers in Channel II than in Channel I. Just as obviously those in the woodfuel system with the liquidity and the organizational capacity to proceed in this fashion do so when they can.

The production team is "hired" under various arrangements that amount to piece work with an upfront working capital payment in species, i.e., the payment is in food and other basic living supplies. These advances are then deducted from an agreed upon purchase price at the end of the usually several month trek into the woods. To our knowledge none of these teams are put together on the basis of an hourly wage or weekly or monthly salary. Also, although these teams are apparently usually recruited from among the urban unemployed, they might also be recruited at the village level, depending on the time of the year. During a typical "hivernage," village labor is occupied with agricultural crops and urban unemployed would tend to be more heavily recruited. There are, however, obvious advantages to hiring rural labor when possible since its expectation wage is lower and it is probably savvier about the forests — although it might be pointed out that many urban unemployed are merely displaced villagers who probably don't give up much in terms of forest smarts. The relatively heavy movement of charcoal through this channel would seem to be explained by the fact that charcoal is produced relatively more efficiently with teamwork than firewood. Moreover, as we've mentioned earlier there are labor-saving advantages to keeping the workforce in residence at a site that integrates both cutting and firing until the product is bagged and hauled.

### **Channel III(VI)**

Channel III, integrated villager production and distribution, whether in firewood or in charcoal, largely consists of individual villagers, at most a small group of villagers acting together, probably as a family. These agents produce and then transport product to the cities which they sell, sometimes to wholesalers-retailers (in which case they've simply cut out the transporter-broker), often, however, directly to the consumers in a neighborhood retail operation. Some even operate door to door out of their transportation means (whether camionette or "charrette"). A fair number of urban merchants complained to us that the activities in Channel III more and more represent an imposing phenomena impacting adversely their earnings (particularly this was the case in our interviews in Mopti and Segou). Also in Channel III we see direct sale on the part of villagers to some medium scale commercial accounts like restaurants and smaller factories.

Channel III is depicted in our subsector map not because it probably amounts to much in the great scheme of things now but because Channel III does represent an interesting form of grass roots entrepreneurship that we would eventually like to see promoted. Channel I is another possible venue, of course, one where village entrepreneurship would stop short of rural-urban transportation and urban

product distribution, however. In Channel I the gains to these functions could not be captured by the village. For this reason the transformation we will suggest later would envision an intervention enlarging Channel III substantially by adding to the village production in Channel I two components, product transport-distribution (forward linkage) and forest regeneration (backward linkage).

#### 4. SYSTEM DYNAMICS

In Mali incidence of drought kills forest, renders agricultural production unstable, drives villagers into cities, creates monetized urban woodfuel demand expressed in formal markets, which generates "cash crop" opportunities for self-employed Malian village "entrepreneurs" suffering from income fluctuations. In turn these villagers respond to the market signals, proceeding to cut, bundle, and offer to the urban market more Malian forest, compounding deforestation that began as a "natural" phenomena with economic behavior that generates an ever more destructive circularity. Behind the woodfuel system we find an evergrowing demand for woodfuels fed by an overheated demographic engine. Thus, Mali finds itself today in the contradictory situation that the best "informal" entrepreneurial energies in its villages might actually undermine the rural ecology upon which the entire economy depends for its survival. Low woodfuel prices and-or insufficient awareness of potential profitability from active forest regeneration reinforce each other to keep entrepreneurship directed at forest regeneration virtually non-existent in Mali.

Villagers must be convinced that the forest can be and is being lost. Moreover, they must be convinced that they could make more in the long-run than their current daily (or hourly) wage from pure cutting (somewhere near 800-1000 CFA for a full day's work if the product is hauled to the roadside) by investing in a forest regeneration strategy — a matter of their perception of the forest's "natural" regenerative potential and of the potential return on an investment with a relatively lengthy gestation period. Obviously, if a villager believes that the forest is going to reconstitute itself all by itself as it always has and that he can continue to cut essentially for no investment, he'll continue to do so, merely moving further into the forest for the cut on the assumption that sooner or later he can return to cutting closer to the village. To change his behavior in that mindset, someone must make the economic argument that in the long-run if he plants he can earn even more than through simple cutting — whatever the forest's "natural" potential. One must also consider that at this juncture most woodcutting is supplemental and not primary village income. A relative gain argument will carry less weight in the villager's mind for that reason. Thus, it is crucial that the ecological case also be made that deforestation is a serious problem and that the cut can't continue at the current pace forever. A successful intervention must carry both a consciousness-raising ecological and an economic component.

Currently, any supply-side strategy trying to convince Malian villagers to view trees as another permanent agricultural crop at the village level encounters, unfortunately, strong cultural resistance. The suggestion of planting was met with good-natured amusement on more than one occasion, particularly in verdant villages where deforestation although present was less obvious. Strong economic incentives seemed all the more crucial in these cases to motivate behavior changes. On the positive side, it was observed that villagers near major roadways in forest depleted zones appeared much more willing to consider the *quid pro quod* of tree cultivation for some economic advantage such as access to cost-based transportation services, access to credit which could be used in product brokering, or outright cash payments.

Even if the villager perceives ecological trouble, one must consider whether he can afford to forego current consumption, in view of the dire straits in which he finds himself with agricultural yields falling because of droughts. The villager must be convinced to sacrifice in some measure the current

income from cutting in exchange for future income. Why not cut today — with idle hours which have no current or future opportunity cost that the villager easily understands — if there is no prospect of increased income. A price increase at the consumer level with rewards which are immediately and effectively returned to the village would validate these improved long-term prospects while also offering an immediate village gain.

One element of current village customary law is crucial to consider in this context. There are no current prescriptions whatsoever on either gathering or cutting woodfuel on "idle" forest common lands and current practice allows anyone to process woodfuels wherever they can be found as long as the tree is on common land. There is also no current experience with allocating these common lands for private-initiative forest regeneration. The only current constraint on cutting on village common land is the next village's perimeters. Without the protection of property rights (or minimally long-term custodial usufruct), no villager with his head on right would consider planting or any other form of costly silviculture or forest management. The significant observation, however, is that something akin to the concept of private property already exists at the individual and family level in Malian villages. It would be impermissible, for instance, for another villager without permission to cut a tree on land that was under recognized agricultural cultivation by an individual or a family — as it would be impermissible, even unthinkable, to tamper with the agricultural crops themselves. Those with whom we spoke were certain that village customary law could be extended to embrace property rights for forest regeneration plots if the concept were properly introduced. There also exist ambiguities in Malian land tenure custom concerning exploitation of extra-village territories nationally. Just where village boundaries are drawn isn't a question of cartography in Mali. In these vague forest interstices many non-village teams, usually projected with urban-based working capital, are at work cutting trees, mostly for charcoal production in a process described as Channel V earlier.

Table 3 gives us some idea of how prices (and potential returns) break down throughout the vertical system. A villager can cut somewhere in the vicinity of 40 bundles of firewood in a day and haul it to a nearby roadside if he lives in a village with reasonable road access. At that rate he would produce for the market somewhere on the order of 240 kilos of firewood and earn close to 1000 CFA in a day. His hourly rate would depend on how far from the road he would need to go to find the wood (see footnote 24).

No serious attempt was made to prove in this study that planting trees would compete effectively with other ongoing agricultural activities — basically for the reason that the common village lands where the cut occurs carries no apparent opportunity cost. The cutting site is chosen in the first place for not being in agricultural or any other kind of use (as we've just pointed out, if it is in agricultural use village customary law prohibits cutting by anyone other than the farmer of that plot himself). Furthermore, it was felt that could vary so wildly that it would be impossible to generalize. The cost of the seedling itself runs anywhere from 50 to 150 CFA on the market, depending on the degree of subsidization. However, nursery activity can be developed in the village, in which case the cost of the plant itself would fall to practically nothing. Moreover, the distance of the site from the village, village customs concerning animal closure, and, most of all, the available rainfall during the first year (always the big unknown in Mali) would vary significantly according to the context and in varying forcefully affect the cost of planting and nurturing a new tree.

**TABLE 3**  
**PRICES/(COSTS) IN VERTICAL WOODFUEL SYSTEM**  
**SUBSECTOR PRICE OVERLAY**

COSTS/PRICES (PER KILOGRAM)	FIREWOOD (calculated at 6 kilo / fagot)				CHARCOAL (calculated at 75 kilo / sack)			
	10 TON TRUCK		30 TON TRUCK		10 TON TRUCK		30 TON TRUCK	
	OWNED	RENTED	OWNED	RENTED	OWNED	RENTED	OWNED	RENTED
1. PRICE TO VILLAGER EN BROUSSE	2.50	2.50	2.50	2.50	9.18	9.18	9.18	9.18
2. PRICE TO VILLAGER AT ROAD	4.17	4.17	4.17	4.17	11.76	11.76	11.76	11.76
3. TRANSPORT COST	+B:E74	7.22	+B:G74	7.22	+B:E76	7.88	+B:G76	7.88
4. WHOLESALE PRICE	12.50	12.50	12.50	12.50	25.00	25.00	25.00	25.00
5. CONSUMPTION PRICE	15.00	15.00	15.00	15.00	75.00	75.00	75.00	75.00

(i) the investment in the seedling; and

(ii) the time involved.

- in planting the seedling
- in watering the seedling/sapling periodically during its first half-year, and
- in cloturing the sapling from animal foraging for several dry seasons

Beyond this, forestry experts have wildly varying opinions about just what form of forest regeneration one should undertake. Counsels run anywhere from strict plantations, that is, trees in rows, to "natural" forest management, with various cut-a-tree-plant-a-tree (CAT-PAT) versions of planting combined with forest management in between. Not infrequently the experts also apply a fine-tuning spin to the notion "natural" regeneration so that what's natural and what's not becomes as much a question of taste as one of fact. Costing out forest regeneration a priori is virtually an impossible activity. What is clear is that the costs associated with these factors must make sense to the villager as a long-term investment at the village level for him to make the economic — as opposed to the ecological — choice to regenerate forest.

It goes without saying that one of the great difficulties in converting Malian villagers to forest regeneration is the five to even seven or more year gestation period for regeneration to pay off. Economic agents respond to demonstration effects. If Abdou is in the forest regeneration game and making money, Youssouf can be counted on to take note and consider entry if his opportunity set is comparable. What Mali needs is to get forest regeneration going is successful forest regenerators — but the big problem is getting enough people to take the first step that the idea gets around you can make a CFA in tree "cultivation." It should be emphasized here that it is commonly perceived now that under certain circumstances planting trees for construction lumber — "bois d'oeuvre" — pays as a competing agricultural activity. And, in fact, one can witness some of this activity in eucalyptus and meline (??) here and there in Mali. What we need is to get firewood to the same level of both actual profitability and perception of profitability as construction lumber. Once this perception has been seeded, forest regeneration will become an accepted form of rural behavior — but not likely before.

One must also observe that villager returns from woodfuel production are also prejudiced by an enterprise-sapping 6000 CFA monthly tax on woodfuel cutting. By reducing villager monthly income directly, this tax indisputably handicaps promotion of forest-regenerating entrepreneurship at the village level. The current tax as it is structured also serves no forest management purpose since it is not proportionate to the amount cut. A villager can cut as much or as little as he chooses during the month under the current structure. If one is to penalize peasants at all — an approach that flies directly in the face of what is suggested here — then the penalty should be in some fashion associated with the ecological damage done. One forestry expert whose advice has been keen makes the point that a "coupe" tax should be assessed only after determining the ecological limits of the forest environment in question. One should be taxed at the village level for over-cutting — but not for the act of cutting itself. The current tax on the cut has as its sole objective intimidating the Malian villages which can't afford to be intimidated. Moreover, the taxation's deleterious effect is compounded by its administration by a quasi police force, an often arrogant, sometimes corrupt, although not altogether incompetent bureaucracy known as Eaux Et Forets. We found Eaux Et Forets agents to be bright and articulate, whatever their morale character, which we only encountered as hearsay. They would appear, however, to suffer from

a condescending sense of superiority to the villagers they oversee and this perception is unquestionably the worst feature of their administration.

Lastly, we must discuss perhaps the thorniest of the dynamic properties of the vertical system of woodfuel production and distribution — a phenomena mentioned in the introductory paragraphs. Woodfuel is an elemental component of the real wage basket cheap or otherwise. There is, thus, tremendous urban political resistance to woodfuel price increases among consumers and commensurate caution on the part of politicians and bureaucrats in regard to implementation of a woodfuel consumer tax. This is particularly so in an environment where debt-driven austerity has kept the minimum wage frozen since 1985. It's quite easy to tax widely dispersed villagers. Urban consumers on the other hand have the nasty habit of rioting — and it is widely assumed that riots would occur if woodfuel prices were driven up by a consumer tax. Most policymakers are aware that any solution to woodfuel cutting and gathering's impact on deforestation will require a gradual rise in domestic energy prices to promote conservation, the use of alternative fuels, and rational long-term forest management at the village level. They are also aware that their jobs are at risk if they intervene to raise woodfuel prices.

## 5. SYSTEMIC CONSTRAINTS AND ENTERPRISE OPPORTUNITIES

No doubt owing to our prejudices, we began our research "nosing around" for economic rents in the distribution system. Some people begin small-scale enterprise development work looking for technologies that aren't productive to propose better ones, some instinctively look at a related question, product quality, often focusing on export, some look at regulatory inconsistencies, some at policy more generally, while still others focus in immediately on credit constraints. Since the leader of this team tends to be relatively more interested in marketing linkages, not only their information content but also their competitiveness, from the beginning we made an attempt to understand

(i) Who was earning significant returns in the important channels and were those returns fairly distributed towards competent, hardworking small-scale initiative takers, particularly toward entrepreneurial energy exhibited by those in production?

(ii) If somebody was taking a bigger slice than they deserved in terms of competence, initiative, and energies expended, How could opportunities be redistributed to those currently undercompensated who did exhibit these qualities?

(iii) Could we stimulate entrepreneurship in the village through this redistribution at the same time contributing to a restoration of forest ecological balance (and certainly in any case without doing further harm to it)?

Particularly, we were concerned with the question of stimulating village level entrepreneurship in such a way that the hard work embodied in both forms of woodfuel "production" would not only earn a fair return on the energy expended but a return that was so attractive as a substantial and stable source of rural revenue that it would become transparent economic folly to destroy the productive asset itself, namely, the forest. We wanted to create a set of incentives which would convince villagers to look at the forests not merely as the common lands surrounding their generational abode but, indeed, as a form of harvestable agricultural land the crops on which were merely woodfuel producing trees.

**TABLE 4**  
**TRANSPORT COSTS FOR BOIS DE CHAUFFAGE/CHARBON**  
 (estimated costs on the basis of 160 annual trips @ 200 KL RT)

COST ITEM	AMOUNT IN CFA	
	10 TON TRUCK	30 TON TRUCK
1. DEPRECIATION + INTEREST (depreciation calculated on the basis of original purchase price + initial refurbishing charges, 10 year effective vehicle life)	3188	10313
2. MAINTENANCE (prorated from approximate annual charges after refurbishing)	8750	12500
3. INSURANCE	2500	3750
4. FUEL	16800	30000
5. SALARIES (including social sec + per diems)		
DRIVER	3750	3750
APPRENTICE	750	750
6. OTHER LABOR CHARGES	1000	2000
7. FEES		
TRAFFIC LICENSE	6000	12000
ROAD TRANSPORT TAX (+ TRANSPORT CARD)	1500	3200
PARKING TAX		
ENTRANCE TICKET	500	125
ENTRANCE TAX		1750
EXIT TICKET	400	500
EXIT TAX		750
CROSSING TAX		975
BRIBES	3000	5000
<b>TOTAL COST PER TRIP</b>	<b>48138</b>	<b>87363</b>
COST PER BUNDLE OF BOIS DE CHAUFFAGE	32.09	29.12
COST PER SACK OF CHARBON	437.61	397.10
COST PER KILOGRAM OF BOIS DE CHAUFFAGE	5.35	4.85
COST PER KILOGRAM OF CHARBON	5.83	5.29



Early examination of the vertical system of woodfuel production, distribution, and consumption appeared to reveal the possibility that economic rents accrued from truck ownership and control of the transport of woodfuel from the forests or rural roadsides to the quartier-based urban distribution points. The team was first struck by the fact that few of the agents in the system owned their own transportation and that trucking services were frequently rented at what appeared initially to be very high rates for the usual one-day round trip a load of woodfuel represented. These putative rents were viewed as a **systemic constraint** on enterprise development at the level of the village, a constraint which could serve as an **enterprise opportunity** if village entrepreneurship could be capacitated to undertake transport through a "sectoral intermediary firm" intervention.

The "sectoral intermediary firm" would offer cost-based trucking services (i.e., truck renting and maintenance), forestry extension advice, and eventually, once responsible forest management had been demonstrated, village-level credit access. Medium to long-term credit would be instrumental in promoting forest regeneration with its long gestation period — if by regeneration we mean tree planting and tree nurturing. Credit access, it was conceived, might also lead eventually to actual truck ownership, perhaps on a cooperative basis among sets of villages, even better further down the road on a competitive individual basis. Lastly, short-term credit would allow village entrepreneurship to acquire the liquidity necessary to enter product brokering. The village could then capture at least some of the returns to marketing.

The goal envisioned was privatization of woodfuel production and distribution at the village level. Village entrepreneurs would control their economic destiny through long-term rational exploitation of the forest ecology as well as through mastery and control of the transportation and marketing linkages. The logic of such an intervention would be simple enough: substantial gains in return for demonstrable forest regeneration, gains which could be withheld in the event planting did not occur. Transportation for planting was the leverage envisioned.

Our noses were also set on the transportation scent early on when we obtained anecdotal evidence from one of the few actual truck owners we were able to find that when he had the working capital to broker product he could net, clear of his "operating costs," which weren't fully specified, between 50,000 and 60,000 CFA for the typical one-day haul of woodfuel (in his 10 tonne truck). Since according to our calculations the most a peasant could make in a month, if he worked virtually every day cutting and hauling roughly the same 10 tonne load, was somewhere in the vicinity of 20,000 CFA, after paying the obligatory 6,000 monthly forest cutting tax, we were lead to feel immediately that the gains from transport or at least from transport and brokering combined were large. 20,000 CFA typical monthly income from simple woodcutting may be a lot of money for a Malian villager currently. Nevertheless, the disparities in returns to these separate activities were gripping — particularly, if you'd ever watched how hard Malian cutters work.

It was also reliably reported early on that the owners of most commercial transportation in Mali are the big merchants of Bamako whose wealth is renowned. According to our sources these merchants invest in trucks, hiring a driver-transporter at a nominal salary who runs the truck on his own along with a non-salaried apprentice paid only a per diem. With a conscientious, competent driver-transporter (a crucial component), the merchants are said to reap a large return on account of the substantial transportation supply constraint and limited competition. Lack of widespread access to adequate credit keeps others from entering transportation.

We were willing to believe the foregoing anecdotal evidence for another reason. Virtually no one in the woodfuel system itself that we met could apparently manage the feat of truck ownership

themselves. Intuitively one would tend to believe that in a system with such an upside potential as domestic energy, right in the guts of the economy, we would see at least some players emerge in the end with multiple commercial sites and finally with truck ownership — if either transporter-broker or wholesaler-retailer margins were, in fact, substantial. In general, however, players in the distribution system appeared to be rarely more than medium-scale and usually smaller-scale. Although it would always be nice to have more time to do a broader sampling and though confidentiality barriers almost always obstruct a perfectly clear view as one goes about developing this sort of analysis, the price data in our financial overlay (Table 3) would seem to reveal that returns in the vertical woodfuel system are rather evenly distributed. It is, of course, always hard to tell what commercial agents actually make on their capital. However, it struck us as very unlikely that any one wholesaler-retailer had anywhere near a corner on even a portion of the urban market — in Bamako or in any of the other places we visited all too briefly for more than a quick look. Those strong players in wholesale-retail we found enjoyed little more than a locational privilege at the quartier level. We looked hard for the BIG PLAYER and really could not find a trace of one aside from the mysterious corps of truck owners (who seemed to loom anonymously in the background behind the subsector). We found this astonishing. And it tended to further focus our attention on the returns to transportation ownership earned by economic agents actually outside the woodfuel subsector.

However, a thorough investigation of actual woodfuel transportation costs produced murky cost estimates which failed to demonstrate conclusively that transport charges were excessive. It could not be demonstrated beyond a doubt that economic rents, i.e., non-competitive, excess profits, existed in the subsectoral rural-urban transportation "function." Thus, we could not be sure that returns from transportation could be redirected toward village entrepreneurship through a "sectoral intermediary firm" offering cost-based transportation services. A close look at Table 4 and then Table 3 reveals that most of the apparent gain to the transportation "function" might be explained by the costs involved.

Particularly nettlesome was the matter of how to accurately evaluate the costs of transport with vehicles purchased substantially after they had been fully depreciated in other transport activities and run for years and years thereafter on jerry-rigged spare parts and tires which it was observed firsthand could actually be held together with what amounted to twine. Was this twine evidence of entrepreneurial shrewdness — good enough to get the job done — and substantial hidden returns or only evidence of outright penury? The team still doesn't know (see Appendix III for a fuller discussion). What's certain is that it cannot be claimed with any integrity that reassignment of the transportation activity to the village through the energies of a "sectoral intermediary firm" might all by itself provide the incentives to convince villagers to begin to think of trees as agricultural product and regenerate forest through tree cultivation — although it remains certain that short this transformation there is little hope for the Malian forests or its woodfuel-dependent economy. On the other hand it is also important to point out here as we have in Appendix III that more work should be done on this point. Neither did our research conclusively disprove our initial suspicions and this fact should not be overlooked.

Having been unable to convince ourselves that the original transportation leverage point (apparent constraint revealing potential opportunity) would serve project ends all by itself, we proceeded to examine other constraints in the system to see what kind of leveraged opportunities these might present. Our principal concern remained how to reward entrepreneurship within the village in a way not inconsistent with village culture by converting that culture to the notion that the forest is a crop like any other to be harvested in accordance with its ecological requirements — certainly no longer a public good theirs for the taking (the current dominant belief).

These other constraints examined were, briefly recapitulated:

1. Prices are too low at the retail level, constraining margins everywhere in the vertical system but particularly at the village level. If the villager does not perceive that the forest is degenerating, the price signal is the only way to convince him to consider regeneration. In lieu of an intra-channel redistribution such as that suggested with transportation, one must ask where else would the revenue come from to effectively convince the villager to invest in forest regeneration if not from the consumer? The price to the consumer of cooking energy must rise? Current prices do not cover the externalities reflected by deforestation. Current cooking energy users are consuming tomorrow's forests by failing to regenerate them. With prices at their present level, villagers cannot be convinced to invest in long-term forest regeneration. The price to the consumer of cooking energy must rise.

2. Village land tenure customs applicable to common lands do not protect those lands from woodfuel overcutting. Even land with nominal ownership (but not actual usufruct) can be cut for woodfuels by anyone from the village. What's missing is any prescribed relationship between exploitation and regeneration. Property rights, whether individual or collective, would not only establish the notion of responsibility but also that of reward for investment energy. It goes without saying that one would not reasonably plant on common land if anyone could cut the tree down to prepare a tea. Also, beyond village perimeters — and even in ambiguous village interstices — anyone can cut woodfuels on what is apparently, if vaguely, the land "of the Malian people." Unfortunately, in these inter-village spaces teams of cutters with no conceivable debt to the land, often placed in motion by urban capital, can lay waste to forest, unaccountable to any authority as long as they've paid a nominal cutting tax. This makes little sense.

3. Energy taxation is currently at the wrong point in the system to promote long-term forest-regenerating village entrepreneurship. The tax as it stands is also configured entirely wrong to prevent over-cutting. Taxing someone who is underemployed and impoverished merely forces him to work harder to achieve the same obligatory, survival-mandated income outcome. Peasants would cut trees at night if they could in some drought-stricken regions of Mali. They need the money. Taxing them makes no economic or moral sense.

4. Lastly, the often arrogant, sometimes even corrupt bureaucratic intervention at the village level by Eaux Et Forets is self-defeating, raising the costs to villagers without encouraging them to change their behavior.

## 6. (LEVERAGED) INTERVENTIONS AND ECOLOGICAL BALANCE

Whether the following constitute truly leveraged interventions, the reader must decide for himself, remembering that our goal here is not maximum enterprise gain for least intervention cost. This subsector intervention is about political economic and cultural transformation promising both entrepreneurial advance and ecological balance. We are aiming at cooking energy self-sustainability in Mali. Thus, our intervention point must be construed not purely in terms of the entrepreneurial gain promised but also in terms of the deleterious externalities resolved. The solutions proposed follow (on the assumption that economic rents do not accrue to the transportation function).

1. Woodfuel prices at the retail level must be raised — gradually but firmly — whatever the attendant political risks. Mali's economic future hangs in the balance and confronting the dilemma cannot be deferred. This adjustment of relative prices must be done, however, in such a way that the public

resources generated are transferred to the rural sector to endow village-level entrepreneurship (either individual or cooperative) with substantial gains and an incentive to long-term cultivation. This would appear to imply

1.1 removal of the current cut tax imposed on village informal entrepreneurship.

1.2 imposition of a tax, rigorously enforced, on woodfuel consumption.

1.3 redistribution of the revenues generated by means of this consumption tax through a **decentralized, non-governmental network of regional development "sectoral development firms"** subsidizing forest regeneration through tree-planting at the village level; this network could also be capacitated to:

- Deliver forestry extension;
- Endow villages with transportation capacities (initially, through truck renting), allowing village entrepreneurship to enter the distribution function, re-enforcing thereby natural market profit incentives; and
- Cautiously and responsibly deliver rural short-term and eventually long-term credit to promote investment in forest regeneration and transportation assets as well as marketing working capital which would permit product brokering.

**Any rise in the price of cooking energy through taxation should be matched with a commensurate rise in the minimum wage.**

The proposed consumption tax should be viewed as strictly a short-term strategy aimed at accustoming Malian consumers to pay fully the long-term costs of energy consumption, while introducing Malian villagers to forest management and cultivation. This tax should be phased out as soon as the market mechanism has adjusted to a long-term logic consistent with Mali's demographic variables. The latter must also be brought under control if Malian forests are to be saved from over-cutting - since woodfuel consumption varies much more strongly with the absolute number of households than it does to either price or income effects.

2. Land tenure laws must be changed to eliminate the current asymmetry in village customary law which permits anyone to cut for woodfuel anywhere on village common lands. Existing notions of village family and individual property rights for conventional agricultural should be extended to common land treatment of woodfuels. Individual village entrepreneurs should be encouraged to assert property rights on forested common land and village common land should be set aside for collective village management (to supply directly village woodfuel needs).

3. Malian land without a village identity should be homesteaded to forestry entrepreneurship. All urban-projected exploitation of rural woodfuel production should be licensed (and never permitted without verifiable forest regeneration and planting).

4. The Eaux Et Forets police force should be disbanded and the agency itself integrated diplomatically into the new policy, perhaps as an umbrella administrator of the decentralized "sectoral intermediary firm" network. The latter should interface with the village. **EAUX ET FORETS MUST NOT BECOME THE PRINCIPAL DELIVERY MECHANISM OF FORESTRY CONVERSION RESOURCES TO MALIAN VILLAGES.** Malian villagers will not respond to Eaux Et Forets insinuations.

5. Further research should be done into the difficult issue of possible rents accruing to transportation ownership. Transportation rents would constitute a significant **constraint** on enterprise development at the level of the village if they were found to exist. Redistribution of transportation returns toward the village by promoting village access to cost-based transportation would represent a significant **leveraged opportunity**. On the basis of these returns, an intervening agency could devise a stronger market-based forest regeneration strategy by offering villagers the choice of planting for increased access to transportation services delivering increased entrepreneurial gain. This would avoid the need to resort to the difficult to impose and administer consumer tax advocated above. Simultaneous credit access would permit product brokering at the village level and this would further increase the prospects of culture transforming village-level **profits**. The research team still feels intuitively there is reason to suspect there are substantial returns to control of woodfuel transportation.

**APPENDIX I****Transport Costs**

The figures concerning transport costs are very tentative. They represent essentially a second, very difficult study of an eccentric niche in the Malian transportation system, woodhauling. We don't pretend to have enough information to present the figures we have with a high degree of confidence. They are merely the best we could come up with under a time constraint that was imposing at best - self-defeating at worst.

The central difficulty in constructing this kind of table arises from the need to impute a value to the truck's depreciation when, in fact, most of these trucks were "fully depreciated" according to tax laws by a former owner before they entered woodhauling. It would not be unusual at all for a truck to begin woodhauling with ten years of wear on it. We've heard of cases where the truck was as old as fifteen years. Beyond the question of depreciation there's the inextricably associated one of maintenance. You buy an old truck and then refurbish it to put it back in shape. If we include this initial act of improvement as part of the vehicle's purchase price, which would not be unreasonable in this writer's opinion, then operating maintenance charges would be significantly, if not dramatically, reduced - if this reconstitution of the vehicle were done properly. Not only would operating maintenance charges be reduced but the lifespan of the truck would be extended. Unfortunately, for our investigation experiences vary widely, some skimp in the refurbishing, some don't (and obviously pay for it later - but how much?).

The real crux of the problem of evaluating transport costs is that these trucks, many of them used Mercedes, properly maintained can run virtually forever. What's an appropriate depreciation charge on a truck that runs forever? Technically, it would be zero. All the charges become maintenance charges. However, you can hear anything in the woods concerning estimated maintenance charges. Of course, nothing actually runs forever. At some point someone drives it off a cliff - or it gets trashed in a riot. But some of these units approach immortality according to reports we've listened to. It is particularly important just how you ask the questions. We tried to specifically ask for purchase price, refurbishing charges, yearly maintenance charges thereafter, and, of course, estimated average life of these vehicles. We've gotten answers that are, simply put, all over the map in regard to these key cost components.

To the difficulty of estimating depreciation and maintenance charges - which the owner himself rarely calculates explicitly and in any event pays sporadically as the occasion arises without much accounting - one must add these other conundrums:

- (i) the number of trips feasible in any time frame
- (ii) the frequency with which the truck runs loaded or empty on the way out; if the truck runs loaded on the way out of town that would at least double revenues without changing the charges appreciably, thus reducing by as much as one-half many of the charges attributable to the return woodhauling leg
- (iii) the actual labor activities of the driver and apprentice who might participate in both a maintenance and loading the vehicle if that's the agreement
- (iv) the actual weight of the completed load itself since load capacities of the vehicles are virtually never respected, and, lastly

(iv) the actual weight of a unit of load of either material if the charges are measured in these units, a figure needed calculate the transportation cost per kilo of the material in question; this is particularly important to know with respect to firewood bundles which are anything but standardized (charcoal is more predictable but still a sack of it will vary).

Also, of course, trip lengths vary and with them the fuel charges. Trip lengths are, of course, increasing gradually over time as the deforestation rings spread out from the urban centers. Besides depreciation and maintenance, fuel charges are the largest cost component in transportation, with a liter of diesel fuel at 210 CFA currently.

Take all these factors into consideration and you can get estimates of cost per kilo of material per trip which can vary by a factor of two, even three. With the transportation component occupying as much as two-thirds of the total costs involved in delivery of firewood to the urban wholesale distribution point, it becomes enormously important to the analysis we're presenting just what real transportation costs are. If these charges prove to be exaggerated and are, in fact, reasonably low, then there are substantial margins in transportation which could potentially be transferred to the village as an incentive to long-term forest management, given a tightly managed, carefully configured intervention (the argument is presented in the body of the text). On the other hand, if these charges are, in fact, quite burdensome, that margin disappears and you have to think of some other way to get the villagers to behave in a long-term ecologically and economically rational fashion. Transportation might even under the latter circumstance further undermine the village economy.

We've tried to present what we know in the hopes that others will pursue better information and use it to consider with clearer parameters the option of moving transportation closer to the village in order to give the village greater economic leverage.

161

## BIBLIOGRAPHY

1. Bonnet-Madin, Joffre, Montagne, and Strasfogel, "Contribution à L'Etude de la Consommation de Bois de Feu en Zone Rurale au Sahel," Association Pour L'Arbre Au Sahel, 1980
2. *Recensement General De La Population Et De L'Habitat, 1987 Volume 0, Ensemble Du Pays*, Bureau Central de Recensement, Direction Nationale de La Statistique et De l'Informatique (DNSI), janvier, 1990
3. Hagen, Roy, and Konandji, Hamadi, "Une Investigation Preliminaire de la Fixation des Prix et de la Commercialisation des Produits Forestier au Mali: les Aspects Leislatif," *Energy Initiatives for Africa*, Mai, 1986
4. Grant, William and Hanel, Petr, *A Study of the Business Climate in Mali*, USAID, September, 1988
5. Dewees, Peter A., "The Woodfuel Crisis Reconsidered: Observations on the Dynamics of Abundance and Scarcity,." *World Development*, volume 17(8), 1989
6. Karch, G. Edward and Boutette, Michael, "*Charcoal: Production Et Utilisation a Petite Echelle*", USAID, Africa Bureau, *Energy Initiatives for Africa* series, 1983
7. *Enquete Budget Consommation (1988-89), Analyze Perliminaire*, Direction National De la Statistique et de l'Information (DNSI), Mai, 1991
8. Direction National de l'Hydraulique et de l'Energie, *Plan d'Action Du Mali Pour La Promotion Du Gaz Butane, 1990-92*, Mai, 1990
9. Cline-Cole, R.A.; Falola, J.A.; Main, H.A.C.; Mortimore, M.J.; Nichol, J.E.; and O'Reilly, F.D.; *Wood Fuel in Kano, Nigeria: The Urbvan-Rural Conflict*, The Social Forestry, Network Papers, Winter, 1988
10. Direction Nationale Des Eaux et Forets, *Noe Sur Les Activites Du Services Forestier Dan de Domaine du Bois Energie*, Janvier, 1991
11. Ministere de l'Economie et des Finances, *Arrete No. 91-1745/MEF-CAB Portant Homologation du Prix du Gaz Butane*, Mars, 1991
12. Cline-Cole, R.A.; Main, H.A.C.; and Nichol, J.E.; "On Fuelwood Consumption, Population Dynamics and Deforestation in Africa," *World Development*, v. 18(4), 1990, pp. 513-27
13. French, David, "Confronting an Unsolvable Problem: Deforestation in Malawi," *World Development*, v. 14(4), 1986, pp. 531-40
14. Anderson, Dennis, "Declining Tree Stocks in African Countries," *World Development*, v. 14(7), 1986, pp. 853-63
15. Anderson, Dennis and Fishwick, Robert, "Fuelwood Consumption and Deforestation in African Countries," *World Bank Staff Working Papers*, No. 704, The World Bank, 1984



16. Jackson, J.K.; Taylor, G.F., II; Conde-Wane; *Gestion des Ressources Forestieres Naturelles dans la Region du Sahel*, Program d'Appui Forestier, Club du Sahel, Juni, 1983
17. Direction Nationale des Eaux et Forets, *Textes (Code) Forestiers*, Janvier, 1986
18. Technical Department, Africa Region, The World Bank, "Sahel Transport Corridors: The Case of Mali," February, 1989
19. Noblet, Richard, *Au Mali ...*, Guides Bleus Hachette, 1987
20. Nsoule, M., and Daumont, M.; "Facilite d'Ajustement Structurel, Mali: Document-Cadr de Politique Economique et Financiere a Moyen Terme," Fonds Monetaire International, 1990
21. The World Bank, *Structural Adjustment Program (SAL I)*, Reporte No. P-5318-MLI, November, 1990
22. International Monetary Fund, *Mali - Statistical Anne*, January, 1990

**ANNEXE F**  
**LA FILIERE TEXTILE AU MALI**

## ANNEXE F

### LA FILIERE TEXTILE AU MALI

ETUDE GEMINI 10 JUIN AU 6 JUILLET 1991

Depuis très longtemps la production et l'usage du textile occupent une place capitale dans la tradition des peuples du Mali. Elle est pratiquée par presque toutes les femmes.

"FINI YE SUTURA YE ": Le tissu est considéré comme une couverture à la fois pour un besoin physique concret de protection mais plus pour une protection morale et d'éthique sociale.

"A KA KULUSI TOBILLEN TA FA": Le tissu, une considération de surface qui va plus loin que le besoin de se vêtir, mais a une signification plus profonde qui détermine la valeur humaine. Peu habillé ou court vêtu signifie "sans scrupule" ou insuffisance. Le prestige des familles passe par leur mode d'habillement, la quantité de couverture et de pagnes thésaurisés, et leur capacité d'en fournir en cas d'événements familiaux à tous ceux qui viennent pour la circonstance.

La définition de textile et l'usage qu'on en fait sont liés à toute une croyance culturelle. Qui se respecte s'habille et bien. Nos investigations, nous ont donné une clarification de la définition du textile. Est textile, tout tissu issu de la transformation d'une matière première.

Il y'a plusieurs variétés de textiles:

- Les textiles à fibre végétale : le coton
- Les textiles à fibre artificielle : les troncs d'arbre
- Les textiles à fibre animale : la laine
- Les textiles à fibre minérale: l'amiante
- Les textiles à fibre synthétique : le nylon

Ainsi pour notre équipe de recherche il a été convenu de nous intéresser de la transformation de la fibre jusqu'au produit fini et sa commercialisation.

#### I. RAISONS DU CHOIX DE LA FILIERE

Beaucoup d'études mettent en relief l'importance du textile au Mali. Les dépenses en besoin de vêtements couvrent à peu près 12% de ménages, dont 37% (4.4 pourcent du total des dépenses) sont investies en des dépenses de textile.

Le Mali compte 945.669 d'unités alimentaires qui dépenses ensemble pour le textile 37 milliards 827 millions de F CFA soit 40.000 F CFA par ménage. Ces 40.000 FCFA sont répartis comme suite:

165

7860 FCFA dans le marché traditionnel en cotonnade pour les besoins de tenues traditionnelles;

5200 F CFA sont répartis entre le textile fancy et le popeline produit localement.

64 F CFA pour les tissés traditionnels modernes; et

27.056 F CFA pour les importés.

En plus de son importance en consommation domestique très élevée, la filière dans le domaine de l'emploi constitue un important réseau et une grande source de revenu familial.

#### A. Les importantes caractéristiques de la filière.

De l'analyse de la filière se dégage le tableau suivant:

Nombre d'emploi direct : 890.600  
Coton + Laine

chiffre d'affaire total de la : 37.827.000.000 F CFA  
filière

Chiffre d'affaire de la COMATEX: 3.705.000.000 F CFA

ITEMA : 1.100.000.000 F CFA

FILEUSES : 94.320.000 F CFA

TISSERANDS : 3.192.204.000 F CFA

TEINTURIERES : 3.742.300.000 F CFA

#### B. Les femmes et la filière textile.

Jadis, la plupart des activités de production de textile, depuis la matière première jusqu'au tissu était dominée à 90% par les femmes. Responsables de l'habillement et des besoins de textile de la famille, les femmes étaient les principales intervenantes dans la filière avec la culture du coton, la production du fil, la consommation, et la commercialisation. La prévision d'approvisionnement est d'une fois par an. Le renouvellement des habits, la mise en place de stock textile: couvertures et pagnes pour la préparation des cérémonies d'initiation et de mariage.

Le tissage est à 90% l'activité des hommes. Malgré ce fait, les femmes dans cette filière possèdent assez d'expertise dans le reste du domaine, y compris le filage, la gestion, le conception de motifs, etc.

La culture et certaines des pratiques religieuses exigent cette filière comme la plus appropriée pour les femmes: activité de sainte au paradis; activité d'une épouse à l'attente du retour du mari en

166

exode (ce qui fait qu'on rencontre spécialement la plupart des femmes sarakolé dans la filière, puisque, partenaires de ceux qui pratiquent beaucoup l'exode); activité obligatoire durant le veuvage.

Avant la création des usines, cette activité était à 100% féminine. Les femmes apprenent à bas âge la technique et constituent la chaîne de production avec leurs filles depuis l'âge de 10 ans jusqu'à 60 ans. Toutes les femmes (Bambara, dogon, sarakolé, minianka, bobo, sénoufo, samon) des zones de production cotonnière (1ère, 2ème, 3ème et 4ème région) sont des fileuses. Il faut ajouter à cela la filature de la laine avec les femmes dans le Macina et le Djenné. Les fileuses utilisent le coton ou la laine, selon les régions, à l'état brut et s'occupent de toute la procédure d'avant filage.

Si nous dépassons les considérations culturelles, nous pouvons aussi considérer l'activité comme étant moins fatigante et facile à gérer parmi les multiples tâches ménagères.

## II. LE MARCHÉ MALIEN DE TEXTILE

Le textile a son développement dans les valeurs traditionnelles. Les attitudes des peuples vis-à-vis du textile constituent les principales motivations et raisons de survie de la filière. De nos jours La consommation malienne en textile est de 63,5 millions de mètres par an. La production totale de textile du Mali est de 28,2 millions de mètres<sup>1</sup> par an, y compris 2,7 millions de mètres exportés. Le reste (plus de 37 millions de mètres) est constitué des importations venant de la Hollande et de l'Allemagne (wax et Bazin) et de la production sous-régionale (fancy et Koba, couverture) venant du Burkina, Sénégal, Niger, etc.

La complexité du marché nous a amené à le regrouper en trois(3) grands secteurs:

- Le marché traditionnel pour les "fait-main" qui comportent les kobas(1) et les couvertures. Pagnes et couvertures: finimugu kossos et kassas. Nous avons intégré dans ce marché les pagnes kobas qui sont à 50% " fait-main" à partir du fil d'usine. Nous avons aussi ajouté à ce marché les produits d'imitation qui sont faits à partir d'une technologie industrielle, donnant le même produit sous une autre forme.
- Le marché industriel pour les imprimés sortant des deux usines et les importations comme le wax, les bazins, les brodés et autres.
- Le marché international qui couvre l'ensemble des deux produits destinés à la vente extérieure.

Il n'y a pas de concurrence ouverte entre les différentes productions. Par ailleurs, une très grande interaction se fait sentir à certains niveaux. Cela est dû à la diversité vestimentaire imposée par le climat. Les besoins textiles varient selon les saisons climatiques.

Les trois (3) grandes catégories de textile sont très différentes en terme de production. Cela constitue un grand atout pour le développement de ce secteur; puisque pouvant toucher en même temps les mêmes consommateurs.

---

<sup>1</sup> Le total de mètres produits localement est de 16.000.000 pour les usines et 12.209.000 pour la production traditionnelle.

## **A Le marché traditionnel artisanal.**

### **1. Le marché local.**

#### **a) Le tissé traditionnel.**

Il est très lourd et résistant. La durée de vie est de trois (3) ans minimum. Malgré cette durabilité il est fréquemment renouvelé pour des raisons de comportements sociaux.

Ce marché retrouve son essor grâce à la conservation poussée des cultures au Mali et dans la sous région. Le rythme du marché est souvent lié aux événements culturels (Modes, initiations, mariages...).

#### **b) Le tissé industriel.**

Ceci est une imitation des pagnes et couvertures traditionnels. Cette production se retrouve en terme de marché au même niveau que les tissés traditionnels.

#### **c) Les imprimés traditionnels: saran et galafini.**

Comme le filage et le tissage, une catégorie de teinture s'approvisionne à partir du tissu d'usine pour entreprendre une activité d'impression. Nous avons classés ces produits dans le marché des imprimés sous la catégorie: imprimés artisanaux. Ils s'inscrivent dans le marché traditionnel artisanal dans la filière. Vu leur caractère particulier et leur volume, nous avons décidés de les prendre à part comme une sous section de la filière. Dans l'analyse actuelle de la filière nous allons seulement la schématiser à l'intérieur de la filière sans rentrer dans le détail cette fois-ci.

### **2. Le marché touristique**

L'ensemble de ces produits ont une valeur artisanale et intéressent un autre marché très important: le marché touristique. Pour un petit nombre de ventes touristique, la valeur monétaire reste le double de la vente locale (pouvoir d'achat et comportement sociaux). Il y'a une compensation entre les deux marchés: le touristique et le local. La rentrée annuelle de touristes est d'environ 7,000 et leur achat est estimé à 153.000.000 F CFA.

## **B. Le marché des imprimés**

Il existe deux(2) grands marchés d'imprimés: les fancy et les sarans.

### **1. Les fancy (wax, bazins, java)**

Les usines au Mali produisent uniquement des fancy et du bazin de 3ème classe. Ce sont des produits raffinés, plus légers que la production artisanale, moins chers et moins durables. Actuellement elles n'ont pas pu intégrer le domaine de production des wax et de bazin de la Hollande et de l'Allemagne.

## **2. Les sarans**

Imprimés traditionnels, les sarans sont un marché à part.

## **C. Le marché extérieur**

Ce marché est d'une importance capitale pour l'expansion de la filière. Le volume d'exportation au Mali en textile n'est que 2.700.000 mètres par an, soit 4,4 pourcent de la consommation locale. Ceci est nettement inférieur par rapport à l'importation qui est de 37.500.000 mètres par an qui correspond à 55,6%.

Cependant, il faut reconnaître que des potentialités d'exportation existent et pourront pallier aux difficultés de marché pour le textile. Il n'est pas très grand, dû à la continentalité du pays et à ses politiques de relation extérieure.

## **III. STRUCTURE DE LA FILIERE**

### **A. Fonctions**

Le tissu s'obtient à partir de séries d'exercices qui sont: le filage-tissage, la teinture, et la commercialisation.

#### **1. Le Filage**

C'est l'étape où le coton est transformé en fil qui donne la chaîne et la trame composant le tissu. Dans l'étude nous avons rencontré dans la filière au Mali deux réseaux de filage: le filage artisanal et le filage industriel.

##### **a) Le filage artisanal.**

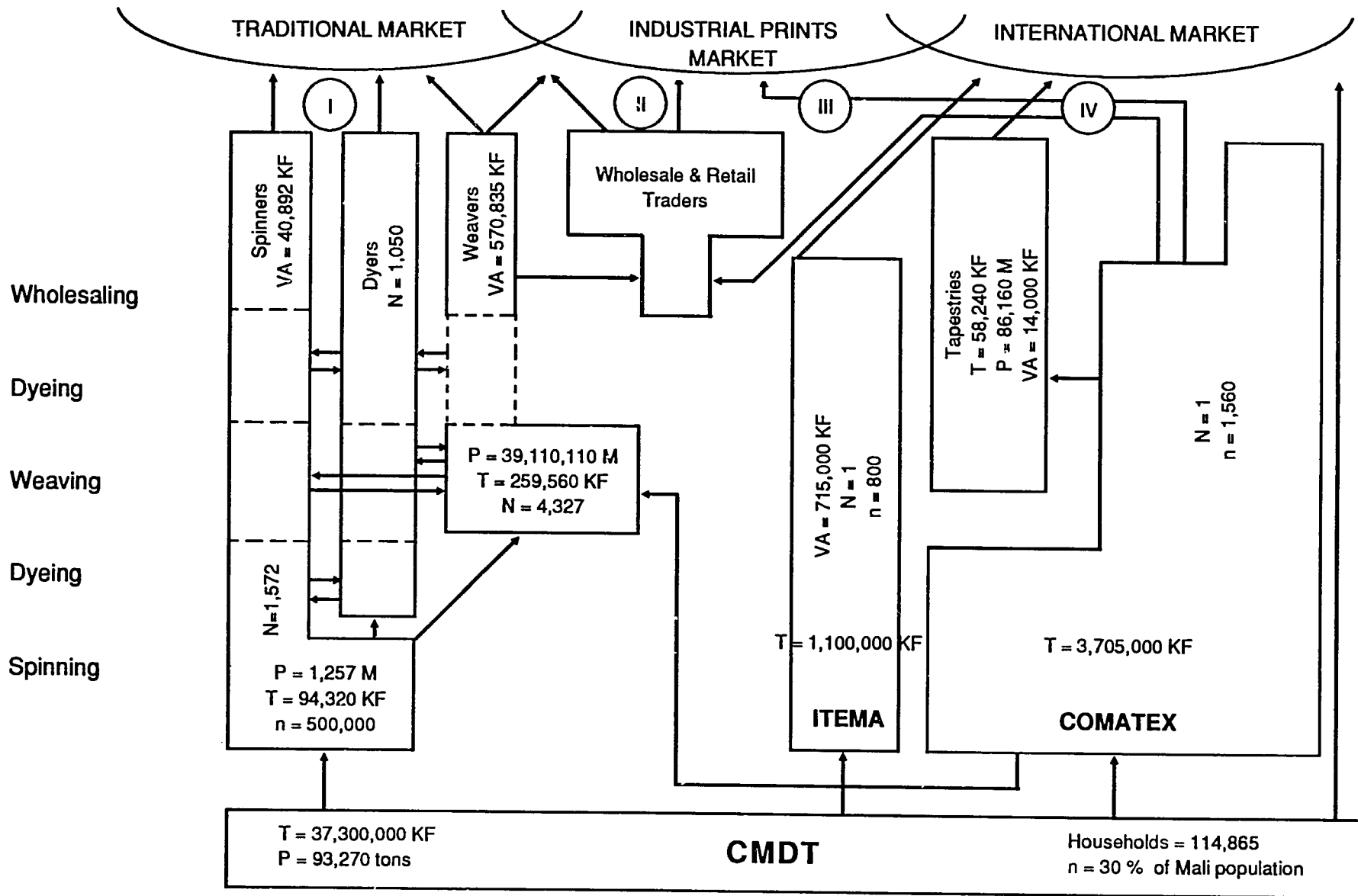
Il passe par l'égrénage, le triage et le cardage du coton. La laine aussi est filée de la même façon. Il y'a 15 ans cette activité était celle de toutes les femmes maliennes et leurs filles.

Mais le fil traditionnel possède sa qualité et est irremplaçable pour certaine qualité de tissu à produire. Ce fil n'est actuellement utilisé que dans la technique traditionnelle de tissage à cause de ses caractéristiques (épais et non-uniforme).

##### **b) Le filage industriel.**

Deux grandes usines s'occupent de la transformation du coton en fil: la COMATEX et l'ITEMA. Elles sont approvisionnées à partir de la Compagnie malienne de textiles (CMDT) et ne consomment que les 5% de la production totale cotonnière. 450 tonnes de fils sont produites par an par la COMATEX. Elles sont toutes deux actives dans la production du fil pour l'autoconsommation et l'approvisionnement de la section tissage.

# SPINNING AND WEAVING SUBSECTOR MAP



T = turnover; n = number of employees; N = number of enterprises; P = annual production (meters);  
VA = value added; KF = thousand FCFA



L'ITEMA consomme son propre fil à 99% pour la production du tissu fancy. Les déchets approvisionnent les fileuses et les ramasseuses de fils déchets.

La COMATEX produit du fil pour l'autoconsommation mais aussi du fil destiné au tissage. C'est du fil plus fin que le fil artisanal, raffiné à partir des procédés chimiques. Il peut prendre plusieurs couleurs et se tisse plus facilement que le fil traditionnel.

Sa qualité rentre dans une gamme de production spéciale: les kobas et les couvertures appelées tapis.

## **2. La teinture.**

Il y'a plusieurs techniques en teinture, qui différencient les différentes catégories. Les techniques de teinture varient selon les produits à teindre. Dans la filière textile nous avons tenu à séparer le fil et le tissu qui sont des produits différents. Cela justifie la classification que nous avons faite de l'activité teinture.

### **a) La teinture traditionnelle.**

La teinture artisanale: généralement utilise l'indigo, le noir naturel. Cette activité est restée longtemps entre les mains d'un caste. (Founé et Karangué).

La teinture artisanale est à 100% exercée par les femmes. Elle demande une très grande maîtrise de la technique. Cependant, il faut noter que l'activité tend à être remplacée par la technique semi-moderne avec les colorants artificiels importés. La plante de base, l'indigo, disparaît aussi timidement.

Des fils de récupération sont aussi teints par les teinturières artisanales.

### **b) La teinture industrielle:**

Cette activité est faite uniquement au niveau de la COMATEX pour le fil.

## **3. Le tissage**

Le tissage est une technique qui entrecroise le fil pour donner une étoffe de largeur variable selon les métiers utilisés. L'équipement est composé d'un métier à tisser qui est constitué de: un kafa et des navettes.

Le tissage au Mali n'a jamais été pratiqué par les femmes bambara. Pourtant dans les zones de laine 60% des femmes du Macina sont tisseuses.

### **a) Le tissage artisanale.**

Ce tissage est assuré par les tisserands dans les villages et villes du Mali. Ils tissent du fils de coton ou de la laine selon leur localisation.

Les produits obtenus sont:

- Le finimugu: crétonne artisanale,
- Le kosso: couverture de coton,
- Le kassa: couverture de laine,
- Les boundounboundou: mélange des deux,
- Le koba: pagne de six bandes,
- Le komissen: petites bandes de 12.

b) Le tissage industriel:

Actuellement localisé au niveau de la COMATEX et de l'ITEMA. Les deux unités tissent par an 16.000.000 de mètres de tissus.

La technologie est moderne, mais la fonction utilise les mêmes étapes que le tissage traditionnel. La différence est au niveau de la vitesse de production, de la densité du fil utilisé et de la largeur des bandes. L'étoffe obtenue est légère et imprimée le plus souvent.

c) Le tissage semi-moderne:

Cette méthode intervient dans la production du même produit que l'artisanat. La technique utilisée est plus rapide et permet de plus larges bandes que la technique artisanale. La modernisation de l'activité a favorisé quelques résultats positifs: un nouveau produit et une production rapide. Trois grands intervenants se partagent le domaine: la COMATEX usine; la COMATEX tapisserie; et le kolebaton.

Malgré ce changement de technologie il n'y a presque pas de femmes dans le tissage moderne derrière les métiers à tisser moderne. Les femmes n'ont pas pu intégrer la fonction, ni maîtriser la technique. Elles sont restées bobineuses et caneteuses. Tandis qu'un tissérand moderne gagne 50,000/mois, la femme bobineuse gagne 3,500F/mois.

#### 4. La teinture impression.

a) La technique artisanale:

Elle existe depuis très longtemps au Mali et était faite à partir des colorants naturels végétaux, la couture, le cirage etc. Actuellement elle combine des techniques modernes et se développe en marché et en qualité. Elle utilise le tissu déjà fabriqué dans les usines COMATEX et ITEMA et aussi des bazins de la Hollande et de l'Allemagne.

Le bogolan aussi rentre dans la catégorie de teinture mais utilise à la fois les décoctions de plantes et des couches d'argile noire. Jusqu'ici la fonction est entièrement exercée par les femmes. On retrouve quelques hommes dans les fonctions de préparation avant l'activité (ligotage, cirage....).

La teinture chimique moderne est une fonction très importante. Nous avons signalé plus haut que nous ne nous étalérons pas sur cette section à cause de sa particularité.

172

**b. La technique industrielle:**

C'est celle utilisée par la COMATEX et l'ITEMA. Elle se fait à partir des écrus de fils et de cretone produits par l'usine elle-même. La technique est à 100% mécanique. Contrairement à la technique artisanale on ne retrouve pas de femmes à ce niveau.

Elle utilise des machines et des calculs pour le mélange chimique ou des dessins textiles pour fixer les motifs.

**B. Les Technologies**

**1. Les technologies en pratique**

Les technologies utilisées dans la production du textile sont de trois modèles suivant la classification faite par produit: le traditionnelle, l'intermédiaire, et industriel. La technologie traditionnelle comprends le filage, le tissage et la teinture traditionnels. Elle est en général très lente. Elle est très ancienne, mais ne coûte pas chère et est au niveau individuel.

Le fil traditionnel est de deux sortes: le falé (gros et peu tendu forme la trame) et le guéssé (fin et très tendu constitue la chaîne). La fabrication du fil est faite à partir de la rotation de la guénoille qui a, à son bout, le coton cardé roulé autour du kalé. Le nombre de rotations de la guénoille détermine la forme de fil. Le guéssé nécessite plus de rotations que le falé.

Le tissage peut se faire sous les trois formes:

- La technologie artisanale. Avec une technologie qui coûte 12.5000 F cfa, le tissérand peut tisser un pagne/jour avec un revenu net de 500 cfa.
- La technologie intermédiaire. Le tissage a connu un développement technologique il y'a à peu près 15 années grâce aux efforts déployés par le BIT à l'époque. Elle est à cheval entre la technologie industrielle et artisanale. Elle coûte chère et n'a pas pu à présent être vulgarisée au niveau individuel.
- La technologie d'usine. La technologie utilisée dans le filage industriel est moderne. Elle est très vieille présentement. C'est là une des grandes que la COMATEX connaît. La technologie qu'utilisent la COMATEX et l'ITEMA est importée d'ailleurs: CHINE, ALLEMAGNE, SUISSE etc.

**2. Le changement de la technologie.**

Il est bien prouvé qu'un changement technologique apporte toujours quelques effets positifs. Cela pourrait bien appuyer le secteur industriel et semi-industriel.

Des avantages existent pour changer la technologie: Les nouveaux modèles diversifient la production d'usine pour combler le vide pris en charge par les importés (wax et autres); allègement des tâches; et baisse du coût de production.

Mais des inconvénients existent aussi: les coûts d'amortissement très élevés; la possibilité d'inaadaptation à la nouvelle technologie; les femmes intègrent plus difficilement la nouvelle technologie qu'elles n'ont jamais pu suffisamment maîtriser pour des raisons d'accès et d'organisation.

La concurrence des usines par rapport à la production artisanale limite son marché. La technologie est moderne. Mais elle est dépassée et ne peut pas obtenir toutes les couleurs préférées des consommateurs. Cela explique pourquoi les commerçants importent encore du fil de couleur. Elle est actuellement très vieille, parce que non renouvelée depuis plus de 20 ans pour la COMATEX. Elle est rapide et singulière si elle est bien utilisée.

Actuellement la technologie industrielle au Mali ne suit pas le rythme des innovations technologiques donc en retard sur les autres. Cela l'empêche de diversifier sa production vers de nouveaux modèles.

### **C. Tableau d'informations utiles sur les fonctions:**

Voir tableau 1 et 2.

## **IV. LA CARTE DE LA FILIERE.**

Le domaine du textile n'est pas un domaine facile, à cause de la diversité des intervenants et de leurs fonctions multiples. Nous référant aux données trouvées sur le terrain, nous avons essayé de faire sortir dans la mesure du possible les différents participants et leurs fonctions. La carte touche aussi les différents marchés de la filière.

La carte de la filière schématise en bas la matière première. Vers le haut la carte affiche les différents débouchés; elle mentionne les différents intervenants et leurs actions précises dans la transformation de la matière première jusqu'au stade de la production.

Nous avons aussi noté un approvisionnement important d'une fibre autre (que nous n'avons pas pu classer) au niveau des déchets d'usines étrangères: la CÔTE- d'IVOIRE et un peu de coton cardé au niveau de l'ITEMA.

### **A. Les différentes chaînes de production**

#### **1. La chaîne 1: Production traditionnelle.**

La chaîne emploie 509,052 personnes pour un chiffre d'affaire de 7 milliards 028,670 FCFA, représentant 20% des dépenses en textile au Mali.

TABLEAU 1  
TABLEAU DES CALQUES

Désignation	Nombre d'Emplois-(N)	Hommes	Femmes	Production Annuelle (m)	C.A./an F.CFA	V.A./an F.CFA	R N/jour F.CFA
Fileuses	1572		500.000	1.257.000	94.320.000	4.087.200	46
Teinturières (1) (2)	1050		4.200	3.402.000	3.742.200.000	34.442.952	1885
Tisserands	4852	2160* 2213*	472	7.447.000	8.674.000.000	96.740.000	190 540
Metiers Modernes	3 (15 metiers)	+27	+20	15.990	18.653.000	1.400.000	800
ITEMA	1	800	7*	1.858.010	1.100.000.000	7.150.000	1000
COMATEX	1	1560	200	4.020.000	3.705.000	21.450.000	1000
Commerçants	8000	14400	9.600		25.013.770		

\* 472 tisseuses de laines.

\* 223: tisserands numéros (1) - qui tissent que pour les autres (coton et laine).

\* 2.160: tisserands numéros (2) - qui tissent pour lui-mêmes - Cependant le tisserands tissent aussi pour les autres.

\* 7 = sont dans l'administration ITEMA, non pas des productrices.

TABLEAU 2  
REPARTITION DES DEPENSES D'UNE UNITE ALIMENTAIRE/CHAINE

Composants	Chaîne	C.A./Chaîne	Taux/Chaîne	Dépense Unité/Ménage
Fileuses artisans Teinturiers Tisserands 1 et 2	1	8.674.000.000	19,2	7680
Tapiserie COMTEX Kolebators Autres	2	58.240.000	0,16	64
ITEMA COMATEX	3	4.805.000.000	13,0	5200
Commerçant grossistes Commerçant détaillants	4	25.013.770.000	67,64	27056
		37.000.000.000	100	40.000

175

a) La Fileuse

i. La fileuse traditionnelle produit le fil et le consomme. Une fois approvisionnée en coton, elle transforme son fil. La quantité varie et dépend de ses préoccupations ménagères. Le nombre de fileuses professionnelles a beaucoup diminué dans ces 15 dernières années. 1,572 sur plus de 500,000 fileuses traditionnelles sont restées dans le circuit avec un chiffre d'affaire de 94.320.000 F CFA.

Elle produit en moyenne par mois du fils pour 1 tamas équivalent à 20 mètres de tissus. Pour faire teindre sa production elle paie le service d'une teinturière pour une certaine quantité de son fil après, envoie les fils au tissérand pour le récupérer fini. Elle comptabilise alors le prix du tamas et gagne par pagne:

Elle met 140 F CFA de coton dont la valeur filée est de 750 F CFA et le teint à 200 F CFA, le tisse à 550 F CFA pour une vente de 1.750 F CFA.

ii. La fileuse productrice de fils, elle ne fait que filer. Ce phénomène est très récent. Elle a 150 F CFA tous les trois jours. Elle prête aussi des services de filature par kilo de fibre et est plus chère quand il s'agit de la fibre animale ou artificielle. Elle s'occupe aussi du ramassage des déchets d'usine et les vend soit aux teinturières ou aux productrices de tissus.

b) La teinturière

Elle s'approvisionne à partir du marché chez la fileuse professionnelle grossiste. Elle produit du tissu après la teinture, ravitaille le tissérand numéro 2.

c) Les tissérand.

i. Le tissérand numéro 1 tisse pour la fileuse consommatrice de son fil. Ses services lui sont payés par pagne ou par tamas. Son gain journalier est de 500 F CFA à 600 F CFA.

ii. Le tissérand numéro 2 tisse pour lui même et, après tissage, devient grossiste et vend ses pagnes aux commerçants. Il reçoit son fil du marché ou de la COMATEX. Ceci est aussi un phénomène récent qui s'explique par une coupure de production des femmes entre l'écoulement d'un premier lot de pagnes et la programmation de la nouvelle production. En général c'est le même tissérand qui joue les deux rôles.

d) La deuxième teinture.

La teinturière numéro 2 fait de l'impression et vend son produit teint pour une autre femme qui lui paie ses prestations de service.

e) Les commerçants du secteur de production artisanale.

Ce sont en général 60% des femmes dans le secteur et ne sont pas bien structurées en grossiste ou demi-grossiste ou détaillant. Ils deviennent l'un ou l'autre selon la circonstance.

Le kossos: son prix varie entre 3.500 et 10.000 F CFA

Le kassa: entre 2.000 et 120.000 F CFA.

Actuellement dans la filière tous les intervenants préfèrent donner des prestations de service que de contrôler le processus jusqu'à la commercialisation qui devient une étape difficile et lente.

## **2. La chaîne 2: La production semi-industrielle:**

Ce sont les kobas et les niagas imités par des secteurs structurés à l'occasion. Des tisserands professionnels n'ont pas beaucoup adhéré. Ils ont servi à la création de nouveaux tisserands.

Elle ne comprend que trois grandes unités dans le pays avec de petites unités qui tentent de se créer (coopérative féminine à Badiangara et la cellule à l'artisanat).

La chaîne utilise uniquement du fil vendu en gros et en crédit à partir de l'usine.

La nature de l'approvisionnement de la matière première crée une certaine dépendance entre la COMATEX, fournisseur et les deux producteurs. Une très grande partie de leur production retourne dans les mains de la COMATEX pour la commercialisation. Leur production annuelle est de 58.240.000 F CFA.

## **3. La chaîne 3: la production industrielle.**

Dans cette chaîne il est très difficile de séparer les activités de la filière. Ces unités produisent leurs fils et leurs tissus et s'occupent de la vente. La COMATEX en plus de sa vente en gros a aussi ouvert des succursales de vente dans toutes les régions du pays.

La COMATEX redistribue à travers ces succursales. L'ITEMA est en relation directe avec les commerçants et ne produit que sur commande. Ces commerçants grossistes couvrent alors l'ensemble des marchés à travers leurs réseaux.

## **4. La chaîne 4: Les commerçants**

Les commerçants sont d'une grande importance à la filière puisqu'ils servent de relai dans l'approvisionnement et l'écoulement des produits textile. 70% des commerçants importent et exportent du fil et du tissu. Ils sont au nombre de 5600 oeuvrant dans la filière.

# **V. LES DIFFICULTES ACTUELLES DES FONCTIONS**

## **A. Contraintes Générales**

### **1. Le filage traditionnel:**

- lenteur de l'opération,
- limitation du fil pour la création de nouveaux produits,
- manque d'organisation de la filière au delà de la production de fils,
- découragement, dynamique en baisse.

### **2. Le filage industriel :**

- exclusion des femmes d'un secteur jadis maîtrisé.

- coût élevé par rapport au fil artisanal
3. La teinture traditionnelle:
    - concurrence de la teinture niveau 2,
    - disparition des plantes qui servent de colorants.
  4. La teinture traditionnelle niveau 2:
    - connaît un éssor,
    - marché locale saturé,
    - maîtrise la technique de couleur.
  5. La teinture d'usine:
    - manque de satisfaction pour certaine couleur,
    - obtention difficile de certaine nuance (les turquoises et les claires),
    - technologie vieille justifiant l'entrée de certains fils de couleur
  6. La teinture d'impression :
    - besoin de diversifier,
    - technologie ancienne,
    - manque de formation,
    - motifs très anciens.
  7. Le tissage traditionnel:
    - manque de nouveaux modèles,
    - manque d'organisation,
    - manque de formation pour le calcul de rentabilité de l'activité,
    - coût de la matière première très élevé,
    - modèle pris par des usines sans permission.
  8. Le tissage moderne:
    - manque de créativité,
    - femme absente dans la conception et la fabrique du tissus,
    - technologie ancienne
  9. La commercialisation:
    - manque d'organisation du marché,
    - manque de structure pour la vente extérieure,
    - désordre dans la fixation des prix,
    - manque d'une vente organisée extérieure.

## **B. Avantages et Inconvénients de la Filière sur les Femmes**

En plus des valeurs culturelles que les femmes accordent à la filière, il y'a aussi certains avantages concrets qu'elles tirent de l'activité. Ces avantages sont à la fois sociaux, économiques et physiques.



**Avantages sociaux.** La filature permet l'association des femmes en groupes de production: 15 à 20 femmes peuvent s'unir dans un secteur pour former des groupes de production de fil. Ce sont les "Foris".

Ces groupes peuvent en même temps embrasser d'autres activités sociales (groupes de solidarité par exemple).

**Les avantages économiques.** Les activités de la filière textile sont en générale des activités gérées à 99% par les femmes. Cela permet une occasion de contrôle total de l'activité par la femme qui l'entreprend et évite le risque de sérieuse perte dans les affaires puisque la denrée n'est pas périssable.

Dans certains cas, à cause du coût de la denrée et de la fréquence de sa consommation, l'activité constitue une source régulière et rapide de liquidité financière pour la femme. Elle gagne au moins 300 F CFA par semaine.

**Les avantages physiques.** L'activité permet à la femme de gagner un peu sans trop de fatigue comparativement à certaines activités dont le risque de perte est plus élevé et qui prend trop de son temps (le maraîchage par exemple).

Les nouvelles activités lucratives des femmes exigent plus de temps et en général hors des ménages. Ces nouveaux modes de production les surchargent puisque les tâches domestiques restent toujours parmi leurs préoccupations. Un des aspects positifs de l'activité textile est que, contrairement aux activités commu-nautaires lucratives actuellement à la mode, la production de textile reste gérée dans un mode plus indépendant (la femme dispose de son temps et de son rythme).

**Les inconvénients de l'activité de la filière.** Ils sont le plus souvent d'ordre économique. Le rythme de production n'arrive pas à amasser à la fois une assez importante masse d'argent. Cependant, cet aspect est compensé par l'allègement physique et le mode de gestion facile de l'activité.

Dans le domaine de la teinture et les ramassages de déchets, les femmes sont exposées à des dangers de produits toxiques.

## VI. L'ESSOR D'ENTREPRISE

La repartition de l'approvisionnement du coton par an

	Client	quantité	provenance
La comatex	1100	Tonnes	CMDT
L'Itema	600	Tonnes	CMDT
L'artisanat	2	Tonnes	CMDT
La production industrielle:			

La COMATEX et l'ITEMA produisent ensemble 16.000 000 de tissus imprimés par an repartis entre les différentes unités de production:

COMATEX:	4.000.000	de mètres/an
ITEMA:	12.000.000	de mètres/an

La production semi-artisanales:

Le kolebaton et la tapisserie de la COMATEX ont pénétré le marché des artisans avec une technologie nouvelle qui produit le même type de produit que le tisserands mais amélioré. Ces unités produisent aujourd'hui 106.040 mètres de tissés repartis comme suite:

Tapisserie COMATEX:	57 000 mètres/an
Kolebaton:	29 160 mètres/an
Usine COMATEX:	20.000 mètres/an.

La production artisanale couvre les tissés (kobas et couvertures et aussi les produits de la laine).

L'artisanat couvre 4,304,792 mètres de tissus par an repartis comme suite:

Tissés traditionnels:

Kobas et cotonades:	2 336 040 mètres/an.
Couverture en coton:	1 575 000 mètres/an
Couverture en laine:	393 750 mètres/an.

## VII. LES FORCES MOTRICES DE LA FILIERE

### 1. La demande:

Le marché de textile est très important au Mali. Les unités de production, industries et artisanat n'arrivent pas à satisfaire la demande totale locale. 63.500.000 mètres de textile sont consommés par an au Mali contre une production locale de 27.829.000 mètres par an.

### 2. Diversité des produits.

La filière actuellement considérée peut constituer des éléments d'émulation et non de concurrence. La présence d'industries qui s'impliquent dans le circuit de production artisanale avec d'autres formes de produits serviront à améliorer la qualité chez tous les producteurs(artisans,semi-industrie et industrie)

### 3. L'interaction entre les unités.

Ces interactions sont très importantes puisqu'elles permettent de créer une chaîne de collaboration horizontale entre les différentes unités. La consolidation de ses liens permet d'investir facilement et de limiter l'implantation de d'autres intervenants dans la filière)

#### **4. Les politiques gouvernementales.**

La politique des textiles du Mali est érigée dans la loi. Selon les commerçants de la filière cette loi est mal pratiquée au Mali. Les importations doublent les exportations en textile. La fraude n'est pas maîtrisable. Les frontières maliennes sont ouvertes anarchiquement à n'importe quel textile mais de retour les pays voisins refusent de traiter ou d'appliquer la convention de LOME quand il s'agit de produit maliens.

Le manque de formation et d'information des participants commerçants est un sérieux handicap pour la promotion de l'exportation des produits locaux (mauvaise organisation des ventes, perte et dommage, manque d'information sur l'existence ou la non existence des taxes à l'exportation).

La politique de limiter les importations est souvent mal interprétée et sabotée par les commerçants qui, pendant longtemps ont développé de mauvaises pratiques: fraude et pourboire à la place des amendes et des taxes.

L'implication des membres de l'ancien gouvernement et de leurs familles dans les activités commerciales a détruit la vigilance du contrôle douanier et s'est soldé par une magouille organisée, les considérations parentales et d'amitié.

### **VIII. LES OPPORTUNITES D'EXPANSION DE LA FILIERE**

#### **1. Redynamisation du secteur traditionnel**

- La réduction du prix de la matière première.

Selon les intervenants clés de la filière, le prix de la matière première, le fil industriel, handicape davantage la rentabilité de la filière. Le fil acheté à l'étranger est souvent moins cher que celui acheté dans le pays. La grande différence entre le prix du fil industriel et celui filé traditionnellement offre une grande opportunité pour l'amélioration du filage traditionnel et pour la création d'unités de production de fil semi-industriel.

La COMATEX ET l'ITEMA reçoivent le coton plus cher que les clients de l'étranger. Une bonne politique de vente pourrait s'organiser depuis le coton fibre jusqu'au pagnes. Le prix ainsi réduit pourra être au niveau du pouvoir d'achat des maliens et équilibrer le coût des taxes à l'exportation.

- La création de nouveaux marchés.

Les produits issus de la chaîne semi-industrielle peuvent être destinés à un autre marché. Ces produits ne font l'objet d'aucune tentative de promotion pour les lancer sur un nouveau marché.

Les pagnes tissés koleba et COMATEX peuvent par exemple entrer dans la consommation du mobilier et du tapissage.

- Les réformes politiques.

### **Réduire les importations**

Le Mali pourra réorganiser les lois de la filière. Actuellement le taux d'importation est plus élevé que les exportations, mais il n'est pas conseillé de protéger l'industrie locale.

### **2. Création de structures de coordination**

La faiblesse actuelle de la filière ressort de l'insuffisance d'organisations reconnues cherchant à promouvoir le développement textile artisanale. Ces dernières années ont vu les efforts de structuration des artisans pour la production mais pas pour les recherches de solutions aux politiques et aux marchés.

Quelques petits nombres (Maison des Artisans, la Paysanne, le Copac...) interviennent avec peu de soutien de la part du Gouvernement. Leurs efforts isolés n'arrivent pas à satisfaire le besoin de coordination.

Toutes les possibilités d'expansion de la filière ne seront possibles que si elles sont prises en charge par une ou des structures de coordination solide et expérimentée.

### **3. Formation**

La formation est nécessaire pour:

- La qualité du produit:

Le produit a besoin d'un renouvellement permanent pour inciter le consommateur.

- Les recherches et expérimentation:

Encourager et financer les recherches visant le développement de la technologie et de nouvelles techniques.

- Développer des compétences techniques et théoriques chez les artisans.

Intégration des tissérands locaux dans les tissages modernes et les innovations du secteur.

ESITEX qui vient d'ouvrir ses portes pour la formation sous-régionale. Elle peut répondre aux besoins de formation des artisans de la filière afin de réhausser leurs connaissances. Elle a aussi la capacité de conduire des recherches et expérimentation plus technique pour une connaissance plus poussée et l'amélioration de la qualité.

### **4. Remettre aux femmes la gestion de la filière:**

Le degré d'implication des femmes dans la filière doit leur permettre de jouer des rôles pivot dans l'expansion de la filière.

Au Mali, avant l'époque de la crispation politique et économique, les femmes étaient des actrices dans l'établissement des politiques de modes et de prix. Profiter de la période de décrispation pour faire ramener ces anciennes pratiques dans la filière.

## IX. LES POINTS DE LEVIER

Actuellement, l'analyse de la filière a dévoilé la dynamique et les difficultés des différents intervenants. Des points de levier permettant l'évolution stratégique de la filière se retrouvent dans les domaines suivants:

Compte tenu des difficultés que les deux usines de la filière connaissent, les points de levier seront identifiés dans les alternatives qui prévoient l'intégration des différentes chaînes de production. La situation économique du pays n'est pas favorable à d'autres implantations d'usines qui ne peuvent pas survivre par une gestion locale. L'appel aux experts étrangers pour la gestion des unités de production, prouve l'inappropriation des systèmes importés ou l'interrogation sur la rentabilité des usines. De deux choses l'une. Le besoin se situera au niveau de la possibilité de rendre fonctionnel ce qui est déjà acquis.

Six points de leviers ont été identifiés comme opportunités possibles dans la chaîne de production textile.

### 1. La filature.

- Augmenter la rentabilité des grosses industries en augmentant la production artisanale.

La production du coton à filer peut passer par les usines. Le coton au stade de "mononni" peut être livré à ce stade aux femmes pour augmenter leur production grâce à l'allègement des tâches. Cette proposition empêchera la création d'une autre technologie pour les fileuses dont le résultat pourrait être l'inadaptation de la technologie, coût très élevé, accès financier incertain, contraintes de gestion de temps quand l'activité devient communautaire autour de la technologie.

### 2. La teinture.

- Augmenter la qualité du fil de couleur en ramenant la teinture d'un certain nombre de tonnes de fils au niveau artisanale. La technologie de l'usine COMATEX ne donne pas certaine couleur tandis que les teinturières arrivent à les obtenir.

### 3. La technologie.

- Viser l'amélioration de la technologie de filage et de tissage au niveau artisanale. Cela faciliterait la création de nouveaux modèles pour la clientèle.

### 4. La formation.

- La formation en gestion aussi bien qu'en technique est urgente. La participation de tous les intervenants de la filière est indispensable. Les décisions et politiques gouvernementales doivent être étudiées et discutées dans la formation et établissement de plan d'action concret pour des durées déterminées.

183

### **5. La coordination**

- Pour entreprendre des actions d'innovation et de levier la coordination doit chercher et créer des liens entre les réseaux et les unités. La coordination aura à activer:
- La création d'un circuit de production et de distribution.
- Faire des essais et des études de fibres et leurs latitudes. Esitex est le plus indiqué pour mener à bien cette coordination.
- Expérimentation du guessé sur les métiers modernes.

### **6. L'accès au fonds**

- Les premières actions nécessitent d'être soutenues afin filière peuvent se dégager sur les ventes organisées et servir à la longue l'expansion et la rentabilité de la filière.

## GEMINI PUBLICATION SERIES

### GEMINI Working Papers:

1. "Growth and Equity through Microenterprise Investments and Institutions Project (GEMINI): Overview of the Project and Implementation Plan, October 1, 1989-September 30, 1990." GEMINI Working Paper No. 1. December 1989. [not for general circulation]
- \*2. "The Dynamics of Small-Scale Industry in Africa and the Role of Policy." Carl Liedholm. GEMINI Working Paper No. 2. January 1990. \$5.50
3. "Prospects for Enhancing the Performance of Micro- and Small-Scale Nonfarm Enterprises in Niger." Donald C. Mead, Thomas Dichter, Yacob Fisseha, and Steven Haggblade. GEMINI Working Paper No. 3. February 1990. \$6.00
4. "Agenda Paper: Seminar on the Private Sector in the Sahel, Abidjan, July 1990." William Grant. GEMINI Working Paper No. 4. August 1990. \$3.00
- \*5. "Gender and the Growth and Dynamics of Microenterprises." Jeanne Downing. GEMINI Working Paper No. 5. October 1990. \$10.50
6. "Banking on the Rural Poor in Malaysia: Project Ikhtiar." David Lucock. GEMINI Working Paper No. 6. October 1990. \$3.30
7. "Options for Updating AskARIES." Larry Reed. GEMINI Working Paper No. 7. October 1990. \$3.50
- \*8. "Technology — The Key to Increasing the Productivity of Microenterprises." Andy Jeans, Eric Hyman, and Mike O'Donnell. GEMINI Working Paper No. 8. November 1990. \$3.60
9. "Lesotho Small and Microenterprise Strategy — Phase II: Subsector Analysis." Bill Grant. GEMINI Working Paper No. 9. November 1990. \$15.50.
- \*10. "A Subsector Approach to Small Enterprise Promotion and Research." James J. Boomgard, Stephen P. Davies, Steven J. Haggblade, and Donald C. Mead. GEMINI Working Paper No. 10. January 1991. \$3.10
11. "Data Collection Strategies for Small-Scale Industry Surveys." Carl Liedholm. GEMINI Working Paper No. 11. January 1991. \$1.30.
12. "Dynamics of Microenterprises: Research Issues and Approaches." Carl Liedholm and Donald C. Mead. GEMINI Working Paper No. 12. January 1991. \$6.50.

---

\*Publications of general interest

10

13. "Dynamics of Microenterprises: Research Priorities and Research Plan." Carl Liedholm and Donald C. Mead. GEMINI Working Paper No. 13. August 1990. [not for general circulation]
14. "Review of Year One Activities (October 1, 1989 to September 30, 1990) and Year Two Work Plan (October 1 to November 30, 1990)." GEMINI Working Paper No. 14. January 1991. [not for general circulation]
- \*15. "The Process of Institutional Development: Assisting Small Enterprise Institutions to Become More Effective." Elaine Edgcomb and James Cawley. GEMINI Working Paper No. 15. February 1991. \$9.70.
16. "Baseline Surveys of Micro and Small Enterprises: An Overview." Donald C. Mead, Yacob Fisseha, and Michael McPherson. GEMINI Working Paper No. 16. March 1991. \$2.60.
17. "Kenya: Kibera's Small Enterprise Sector — Baseline Survey Report." Joan Parker and C. Aleke Dondo. GEMINI Working Paper No. 17. April 1991. \$6.40.
- \*18. "A Financial Systems Approach to Microenterprises." Elisabeth Rhyne and Maria Otero. GEMINI Working Paper No. 18. April 1991. \$3.00.
- \*19. "Agriculture, Rural Labor Markets, and the Evolution of the Rural Nonfarm Economy." Steve Haggblade and Carl Liedholm. GEMINI Working Paper No. 19. May 1991. \$2.50.
- \*20. "The Microenterprise Finance Institutions of Indonesia and Their Implications for Donors." Elisabeth Rhyne. GEMINI Working Paper No. 20. June 1991. \$3.40.
21. "Microenterprise Growth Dynamics in the Dominican Republic: The ADEMI Case." Frank F. Rubio. GEMINI Working Paper No. 21. June 1991. \$3.10.
- \*22. "Credit Unions: A Formal Sector Alternative for Financing Microenterprise Development." John H. Magill. GEMINI Working Paper No. 22. September 1991. \$3.80.
23. "Steps to the Creation of a Viable Financial Institution for Microenterprise Development in the Philippines: Notes on a Process for the Staff and Board of Tulay sa Pag-Unlad, Inc." Doug Salloum and Nan Borton. GEMINI Working Paper No. 23. November 1991. \$2.00.

#### **GEMINI Technical Reports:**

1. "Jamaica Microenterprise Development Project: Technical, Administrative, Economic, and Financial Analyses." Paul Guenette, Surendra K. Gupta, Katherine Stearns, and James Boomgard. GEMINI Technical Report No. 1. June 1990. [not for general circulation]
2. "Bangladesh Women's Enterprise Development Project: PID Excerpts and Background Papers." Shari Berenbach, Katherine Stearns, and Syed M. Hashemi. GEMINI Technical Report No. 2. October 1990. \$13.00
3. "Maroc: Conception d'une Enquête pour une Etude du Secteur Informel." Eric R. Nelson and Housni El Ghazi. GEMINI Technical Report No. 3. November 1990. \$12.50



4. "Small Enterprise Assistance Project II in the Eastern Caribbean: Project Paper." James Cotter, Bruce Tippet, and Danielle Heinen. GEMINI Technical Report No. 4. October 1990. [not for general circulation]
5. "Technical Assessment: Rural Small-Scale Enterprise Pilot Credit Activity in Egypt." John W. Gardner and Jack E. Proctor. GEMINI Technical Report No. 5. October 1990. \$4.00
- \*6. "Developing Financial Services for Microenterprises: An Evaluation of USAID Assistance to the BRI Unit Desa System in Indonesia." James J. Boomgard and Kenneth J. Angell. GEMINI Technical Report No. 6. October 1990. \$9.00
7. "A Review of the Indigenous Small Scale Enterprises Sector in Swaziland." David A. Schrier. GEMINI Technical Report No. 7. October 1990. [not for general circulation]
8. "Ecuador Micro-Enterprise Sector Assessment: Summary Report." John H. Magill and Donald A. Swanson. GEMINI Technical Report No. 8. April 1991. \$10.20.
9. "Ecuador Micro-Enterprise Sector Assessment: Financial Markets and the Micro- and Small-scale Enterprise Sector." Richard Meyer, John Porges, Martha Rose, and Jean Gilson. GEMINI Technical Report No. 9. March 1991. \$16.00
10. "Ecuador Micro-Enterprise Sector Assessment: Policy Framework." Bruce H. Herrick, Gustavo A. Marquez, and Joseph F. Burke. GEMINI Technical Report No. 10. March 1991. \$11.30
11. "Ecuador Micro-Enterprise Sector Assessment: Institutional Analysis." Peter H. Fraser, Arelis Gomez Alfonso, Miguel A. Rivarola, Donald A. Swanson, and Fernando Cruz-Villalba. GEMINI Technical Report No. 11. March 1991. \$25.00
12. "Ecuador Micro-Enterprise Sector Assessment: Key Characteristics of the Micro-Enterprise Sector." John H. Magill, Robert Blaney, Joseph F. Burke, Rae Blumberg, and Jennifer Santer. GEMINI Technical Report No. 12. March 1991. \$19.60
13. "A Monitoring and Evaluation System for Peace Corps' Small Business Development Program." David M. Callihan. GEMINI Technical Report No. 13. [not available for general circulation]
14. "Small-Scale Enterprises in Lesotho: Summary of a Country-Wide Survey." Yacob Fisseha. GEMINI Technical Report No. 14. February 1991. \$6.40
- \*15. "An Evaluation of the Institutional Aspects of Financial Institutions Development Project, Phase I in Indonesia." John F. Gadway, Tantri M. H. Gadway, and Jacob Sardi. GEMINI Technical Report No. 15. March 1991. \$8.80
- \*16. "Small-Scale Enterprises in Mamelodi and Kwazakhele Townships, South Africa: Survey Findings." Carl Liedholm and Michael A. McPherson. GEMINI Technical Report No. 16. March 1991. \$4.60.
17. "Growth and Change in Malawi's Small and Medium Enterprise Sector." Michael A. McPherson. GEMINI Technical Report No. 17. June 1991. \$2.20.

177

18. "Burkina Faso Microenterprise Sector Assessment and Strategy." William Grant, Matthew Gamser, Jim Herne, Karen McKay, Abdoulaye Sow, and Sibry Jean-Marie Tapsoba. GEMINI Technical Report No. 18. August 1991. Volume One, Main Report, \$7.60; Volume Two, Annexes, \$14.20.

\*19. "Women in the BPD and Unit Desa Financial Services Programs: Lessons from Two Impact Studies in Indonesia." Sharon L. Holt. GEMINI Technical Report No. 19. September 1991. \$3.80.

20. "Mali Microenterprise Sector Assessment and Strategy." William Grant, Kim Aldridge, James Bell, Ann Duval, Maria Keita, and Steve Haggblade. GEMINI Technical Report No. 20. Volume One, Main Report, \$6.70; Volume Two, Annexes, \$13.00.

21. "A Microenterprise Sector Assessment and Development Strategy for A.I.D. in Zambia." Eric L. Hyman, Robert Strauss, and Richard Crayne. GEMINI Technical Report No. 21. November 1991. \$10.00.

#### **Technical Notes:**

##### **Financial Assistance to Microenterprise Section:**

Series Notebook: Tools for Microenterprise Programs (a three-ring binder, 1 1/2 inches in diameter, for organizing technical notes and training materials) and "Methods for Managing Delinquency." \$7.50. (Additional technical notes are forthcoming and will be sold separately.)

##### **Nonfinancial Assistance to Microenterprise Section:**

1. "A Field Manual for Subsector Practitioners." \$4.65.

#### **Special Publications:**

\*1. "Training Resources for Small Enterprise Development." Small Enterprise Education and Promotion Network. Special Publication No. 1. 1990. \$9.00

\*2. *Financial Management of Micro-Credit Programs: A Guidebook for NGOs.* Robert Peck Christen. ACCION International. Special Publication No. 2. 1990. \$19.00

\*3. *The ADEMI Approach to Microenterprise Credit.* A. Christopher Lewin. Special Publication No. 3. 1991. \$15.00

---

Copies of publications available for circulation can be obtained by sending a check or a draft drawn on a U.S. bank to the DAI/GEMINI Publications Series, Development Alternatives, Inc., 7250 Woodmont Avenue, Bethesda, MD 20814, U.S.A.

11/91

138