No.

MINISTRY OF TRADE, INDUSTRY, PRIVATE SECTOR DEVELOPMENT
AND PRESIDENT'S SPECIAL INITIATIVES
NATIONAL BOARD FOR SMALL SCALE INDUSTRIES
THE REPUBLIC OF GHANA

THE STUDY ON PROMOTION AND DEVELOPMENT OF LOCAL INDUSTRIES IN THE REPUBLIC OF GHANA

MAIN REPORT

APRIL 2008

JAPAN INTERNATIONAL COOPERATION AGENCY

UNICO INTERNATIONAL CORPORATION
JAPAN DEVELOPMENT SERVICE CO., LTD.

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Preface

In response to the request from the Government of the Republic of Ghana, the Government of Japan decided to conduct the Study on Promotion and Development of Local Industries in the Republic of Ghana, and entrusted the Study to the Japan International Cooperation Agency (JICA).

JICA sent the Study Team, headed by Mr. Yoshinari Yamamoto of UNICO International Corporation and organized by UNICO International Corporation and Japan Development Service Co., Ltd. to Ghana from February 2006 to April 2008.

The Study Team had a series of discussions with the officials concerned of the Government of the Republic of Ghana and Ministry of Trade, Industry, Private Sector Development and President's Special Initiative (MOTI/PSD/PSI), and conducted related Trial Programmes. After returning to Japan, the Study Team conducted further studies and compiled the final results in this report.

I hope that this report will contribute to the promotion of the plan and to the enhancement of amity between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Ghana, MOTI/PSD/PSI for their close cooperation throughout the Study.

April 2008

Kunihiro YAMAUCHI
Resident Representative
Japan International Cooperation Agency
Ghana Office

April 2008

Mr. Seiichi Nagatsuka,
Vice President
Japan International Cooperation Agency

Dear Mr. Nagatsuka,

Letter of Transmittal

We would like to respectfully submit this report upon completion of "The Study on Promotion and Development of Local Industries in the Republic of Ghana".

Ghana keeps favorable macroeconomic growth and it has attracted more attentions than other African countries. On the other hand, there is a large gap in economic levels between urban and rural areas. Particularly, the rural areas still face severe poverty. For this reason, it is necessary to expand the employment opportunities and increase income levels in rural communities.

This study was conducted with the objective of formulating the Business Support System for the promotion of local industries in Ghana. The study consists following three phases; 1) basic survey, 2) implementation of trial programs and 3) formulation of master plans and action plans. The implementation of each trial program that focused on the different industrial sub-sectors proved the effectiveness of business supports in this country. In addition, human resource development that was implemented during the third phase contributed the enforcement of the local industry development in Ghana. This report proposes the master plans and action plans based on issues of the current business support system in Ghana and lessons learned during the implementation of the trial programs. We sincerely hope that the results of the study will contribute to the industrial policy as well as SMEs policy in Ghana. We also hope that the measures to promote local industries will be executed and the reduction of poverty will be accomplished.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs, and Ministry of Economy and Trade and Industry, and the Japanese embassy in Ghana for valuable advice and support provided during the study.

We also wish to express our deep gratitude to Ministry of Trade, Industry, Private Sector Development and President's Special Initiatives, National Board for Small Scale Industries and other Ghanaian authorities and private companies participated in the trial programs for the close cooperation and substantial assistance rendered to us during this study.

Very truly yours,

Yoshinari Yamamoto
UNICO International Corporation
Team Leader
The Study on Promotion and Development of Local Industries in the Republic of Ghana

The Republic of Ghana

Source: based on the websites of "University of Texas Libraries" and "africa-rikai.net"

Abbreviations

A	AEA	Agricultural Extension Agent
	AEE	Ajumako Enyan Essiam
	AfDB	African Development Bank
	AGI	Association of Ghana Industries
	AGOA	African Growth and Opportunity Act
	ALS	Atadwa Loan Scheme
	ASCO	Ayensu Starch Company
	ATC	Agreement on Textile and Clothing
	ATL	Akosombo Textile Ltd.
B	BAC	Business Advisory Centre
	BDS	Business Development Service
	BOG	Bank of Ghana
C	CBE	Cocoa Butter Equivalent
	CSIR	Council for Scientific and Industrial Research
	CTTC	Clothing Technology and Training Centre
D	DA	District Assembly
	DACF	District Assembly Common Fund
	DED	German Development Service (Deutscher Entwicklungsdienst)
	DIP	District Industrialization Programme
	DIPI	District Industry Promotion Initiatives
E	ECOWAS	Economic Community of West African States
	EDIF	Export Development Investment Fund
F	F/S	Feasibility Study
	FAO	Food and Agriculture Organization of the United Nations
	FFA	Free Fatty Acid
	FIRR	Financial Internal Rate of Return
	FRI	Food Research Institute
G	GFZA	Ghana Free Zone Authority
	GIPC	Ghana Investment Promotion Centre
	GOG	Government of the Republic of Ghana
	GPRS	Ghana Poverty Reduction Strategy
	GRATIS	GRATIS FOUNDATION
	GSB	Ghana Standards Board
	GTMC	Ghana Textile Manufacturing Company
	GTP	Ghana Textile Printing
	GTZ	German Technical Cooperation (Deutsche Gesellschaft fur Technische Zusammenarbeit)
	GWC	Ghana Water Company Ltd.
	GWSC	Ghana Water and Sewerage Corporation
H	HACCP	Hazard Analysis and Critical Control Point
	HR	Human Resources
I	IFAD	International Fund for Agricultural Development
	ISO	International Organization for Standardization
	ITTU	Intermediate Technology Transfer Unit
J	JETRO	Japan External Trade Organization
	JICA	Japan International Cooperation Agency
	JITAP	Joint Integrated Technical Assistance Program
	JHS	Junior High School

K	KEEA	Komenda Edina Eguafo Abrem
	KNUST	Kwame Nkrumah University of Science and Technology
M	MASLOC	Micro Finance and Small Loans Centre
	MDA	Ministries Departments and Agencies
	MDPI	Management Development and Productivity Institute
	MEST	Ministry of Environment, Science and Technologyy
	MESW	Ministry of Employment and Social Welfare
	MFA	Multi Fibre Arrangement
	MOE	Ministry of Education
	MOFA	Ministry of Food and Agriculture
	MOMYE	Ministry of Manpower, Youth and Employment
	MOTI/PSD/PSI	Ministry of Trade, Industry, Private Sector Development and President's Special Initiatives
	MSMEs	Micro, Small and Medium Enterprises
N	NBSSI	National Board for Small Scale Industries
	NES	National Electrification Scheme
	NGO	Non-Governmental Organization
	NVTI	National Vocational Training Institute
O	OCC	Operational and Capital Cost
	OJT	On the Job Training
P	PAMSCAD	Programme of Actions to Mitigate the Social Cost of Adjustment Loan Scheme
	PDM	Project Design Matrix
	PSD	Private Sector Development
	PSI	President's Special Initiatives
R	R & D	Research and Development
	RCB	Rural and Community Bank
	REDP	Rural Enterprises Development Programme
	REDS	Rural Enterprise Development Support
	RFLS	Revolving Fund Loan Scheme
	RTSC	Regional Technology Service Centre
S	SHEP	Self Help Electrification Project
	SME	Small and Medium scale Enterprise
	SNV	Netherlands Development Organization (Schweizerische Normen-Vereinigung)
	SPEED	Support Programme for Enterprise Empowerment and Development
	SPS	Sanitary and Phytosanitary
	SHS	Senior High School
	SSTS	Senior Secondary Technical School
	SWOT	Strengths, Weaknesses, Opportunities and Threats
T	TBT	Technical Barriers to Trade
	TI	Technical Institute
	TIPCEE	Trade & Investment Program for Competitive Export Economy
	TOT	Training of Trainers
	TP	Trial Program
	TSSP	Trade Sector Support Programme
U	UCC	University of Cape Coast
	UDS	University for Development Studies
	UNDP	United Nation Development Programme
	UNIDO	United Nations Industrial Development Organization
	USAID	US Agency for International Development
W	WATH	West Africa Trade Hub
	WTO	World Trade Organization

FINAL REPORT

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1. Introduction

1. Introduction

1.1 Background of the Study

Favorable macroeconomic indicators have been recorded at an average economic growth rate of 5% plus for 5 years (2001-2005) in Ghana. However, the high growth economy essentially has been supported by donor assistance and capital was spent for rather consumer goods than investment in the production sector[1]. The agricultural centered economic structure has not changed much during for the last decade. On the other hand, export has depended mainly on traditional commodities such as cocoa, gold and timber. These primary goods tend to be influenced by the weather and international market, in fact, Ghana economy was affected greatly by them in the past. The country has had chronic trade deficit since import continued to increase year by year due to high consumption. In order to reduce the trade deficit and break away from excessive foreign assistance, it is necessary to promote economic independence through the development of domestic industries, diversification of production structures, as well as the strengthening of value added mechanisms

Over the years, there has been a tendency to increase the gap in income levels of urban and rural dwellers. For this reason, it has become necessary to reverse this tendency by opting for the development of local industries. This new paradigm shift will expand employment opportunities and increase income levels in agriculture based rural communities. Due to challenges identified in management, production technology, sales, capital, human resource and business environment, small and micro enterprises are finding it more and more difficult to grow (See 6.1.2). Even though business support for such companies would be considered as an effective approach this kind of support has not been provided in the rural areas.

In November 2005, the Government of Ghana put in place the Growth and Poverty Reduction Strategy (GPRS II). GPRS II has the overall objective of accelerating economic growth and raising the per capita income of the average Ghanaian to the middle income level by 2015. Private sector development is an important component of this strategy.

The Ministry of Trade and Industry at that time, recognizing Japan’s experience in private sector development sought the assistance of the Government of Japan for assistance with the creation of the Business Support System for the purpose of revitalizing local industries.

[1] JICA Country Study for Japan's Official Development Assistance to the Republic of Ghana, August 2002

1.2 Objective of the Study

To formulate the muster plan and action plan of business support system for the establishment and promotion of local industry by undertaking the study of the current condition and surrounding environment of local industries and the analyses of the development potential of the selected industries and the lessons learned from the trial implementation of business support for local industry (hereinafter referred to as "the Trial Program; TP").

Note: Business Support System has almost the same meaning as Business Development Service (BDS). The local industry can be developed by strengthening BDS. Therefore, this report shows the way to develop BDS to assist local industries. In other words, the report proposes measures that need to be taken to support local industries.

1.3 Study Areas

(1) Master Plan and Action Plan for the Business Support System

Based on the results of trial programs the Business Support System was targeted at industries located in four priority regions of Ghana. The Nationwide Master Plan and Action Plan for development of local industries were formulated using results of the basic survey, data and analysis gathered from the trial programs.

(2) Trial Program (Four Priority Regions)

Development plans were formulated and trial programs implemented in the following four priority regions.

1) Greater Accra region（Garment）
2) Ashanti region（Palm oil processing）
3) Central region（Citrus processing）
4) Northern region（Shea butter）

However, two candidate industries namely palm oil and cassava processing were proposed for Ashanti region at the beginning of this study. After the survey, the Study Team (hereinafter referred to as "the team") selected palm oil for the trial program and formulated the Business Support System based on an evaluation of the industry's potential.

(3) Classification of the company

For the purposes of this project, the team adopted the following classification[2] based on size

- 1-5 workers: Micro-enterprises
- 6-29 workers: Small
- 30-99 workers: Medium
- Over 100 workers: Large

1.4 Activities and Tasks of the Study Team

This study can be divided into 3 phases; basic study, trial program and formulation of the master plan / action plan. Eight field surveys have been concluded since the team started the first field survey in February 2006. The activities of the each phase are described below.

Phase 1

1) Study on the economy of Ghana and current condition of local industries
2) Study on local industries and selected target industries
3) Analysis of target industries
4) Formulation of the trial program concept
5) Demand and supply survey of business development services
6) Preparation of trial programs

Phase 2

1) Implementation of the Trial Program
2) Evaluation of progress and result of the Trial Program
3) Preparation of seminars to be held during the Phase 3.

Phase 3

1) Formulation of development plans for target industries
2) Formulation of Master plan and Action plan for the nationwide Business Support System
3) Technical seminars for BDS providers and local industry development officials as well as seminars for dissemination of results of the study to be held.

[2] This classification based on the number of worker is used by National Board for Small Scale Industries. No standard government classification is available ..

In addition to the above mentioned seminars, the team conducted four seminars in each region to announce the results of the trial programs. The schedule of the study is described in Figure 1-1.

1.5 Organization of the Final Report

The organization of the final report has been structured along the following lines

1. Introduction
2. General Outline of Economy and Industry in Ghana
3. Current State of SME and Local Industry Promotion in Ghana
4. Outline of Target Industries in Four Priority Regions and Trial Programs
5. The Business Support System for Target Industries
6. Master Plan and Action Plan for Nationwide Business Support System

Chapter 2 to Chapter 3 describes information and analysis based on the basic survey. These issues are summarized at the last sections of both chapters. Chapter 4 summarizes information on the industries selected for the trial program. It also explains selection procedures and issues of the trial programs. The Business Support Systems for target industries are presented in Chapter 5. The Business Support Systems for target industries were fashioned according to the problem analysis and information gathered during the trial programs. Finally Chapter 6 presents basic directions and strategy needed to develop local industries in the country based on information gathered during the basic survey as well as findings and lessons which became clearer when trial programs are implemented and opinions of counterparts sampled.

1.6 Study Team Members and Counterparts

(1) Study Team Members

The names of the team member are as follows;

Name	In charge of
1) Yoshinari Yamamoto	Team Leader / Policy and System
2) Shozo Inakazu	Trial Program Design
3) Teruo Higo	Corporate Management

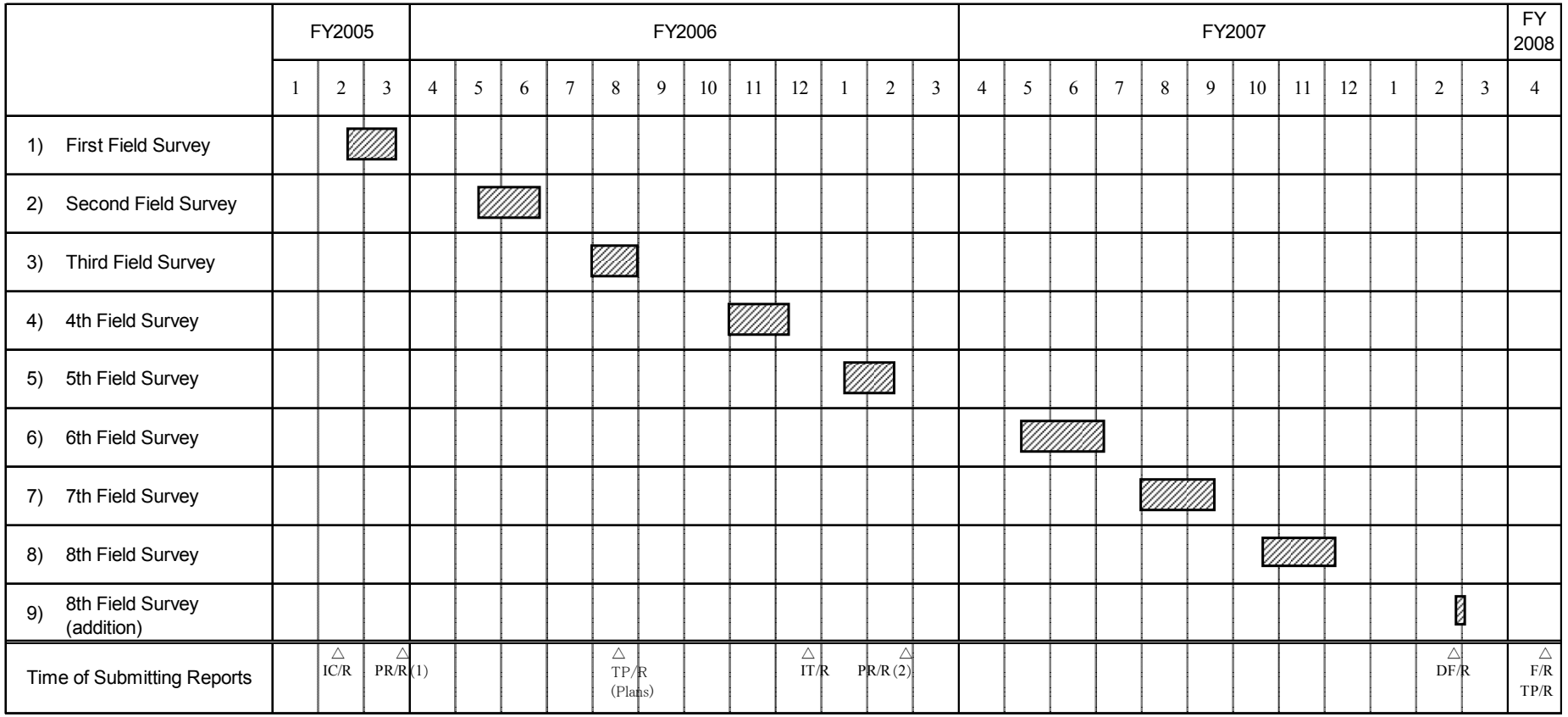
4)	Seiji Sugimoto	Marketing
5)	Akihiko Urata	Financing / Human Development
6)	Yoshimitsu Isi	Production Technology (Textile)
7)	Hiroyasu Asai	Production Technology (Garment)
8)	Susumu Okata	Production Technology (Citrus Processing)
9)	Tsuyoshi Shimada	Production Technology (Palm Oil / Cassava Processing)
10)	Hideki Kidani	Trial Program Management / Coordinator
11)	Kenichiro Sugiya	Feasibility Study and Promotion

(2) Counterparts

- Ministry of Trade, Industry, Private Sector Development and President's Special Initiatives (MOTI/PSD/PSI)
  SME/Technology Division

- National Board for Small Scale Industries (NBSSI)

NBSSI is the implementation agency under MOTI/PSD/PSI. Regional offices of MOTI/PSD/PSI and NBSSI assisted with implementations of the trial programs.



Note: Field Survey

△: Time of submitting reports: IC/R: Inception Report PR/R: Progress Report TP/R: Trial Program Report IT/R: Interim Report DF/R: Draft Final Report F/R: Final Report)

Figure 1-1 Field Survey Schedule

2. General Outline of Economy and Industry in Ghana

2. General Outline of Economy and Industry in Ghana

2.1 General Background

Ghana is situated in the western part of Africa and faces the Atlantic Ocean. It is surrounded by Cote d'Ivoire, Burkina Faso, and Togo, which are Francophone countries. It has a land area of 238,533 square kilometers, which is 63% of the total area of Japan. The land is mostly flat with a plateau area in the south central.

The country belongs to the tropical climate with the rainy season between April and September and the dry season between October and March. Drought occurs frequently in the northern part which consists of savanna. Many regions often face water shortage. The country's climate is suitable for cultivation of tropical crops, therefore cocoa; pineapple; banana and oil palm are produced. Coastal regions are rich in marine resources. Mineral resources are abundant, particularly gold, diamond, bauxite, and manganese in plateau areas. These mineral resources are exported.

Ghana has a population of 21 million, which mainly consists of nine ethnic groups. Akan is the largest group and accounts for nearly one half of the total population.

The economic overview is presented below in terms of GDP, trade, and foreign investment. Based on this overview, the relative position of the manufacturing sector in the national economy, which is the subject of the study, is defined.

2.1.1 Gross Domestic Product (GDP)

Ghana's economy has been growing steadily with an annual GDP rate of 4-5% since 2001, which is relatively high among African countries (See Table 2.1-1). Growth further accelerated in 2004 and 2005, achieving the annual rate of 5.8%. The strong growth that started in 2003 is attributed to agricultural production. In particular, cocoa production and sales grew by 16%, 30% and 13% between 2003 and 2005, and served as a vehicle to push GDP upward. These successful results were driven by the continuous rise in cocoa beans price after 2002 and the growth trend in export volume since 2003. This means that the Ghanaian economy is subject to the volatile nature of this international commodity. On the other hand, although diamond exports have been growing on a value basis since 2003, the mining sector's growth rate falls below that of the national economy.

Table 2.1-1 Gross Domestic Product (constant 1993 prices)

Unit: Billions of Cedis, Growth rate %

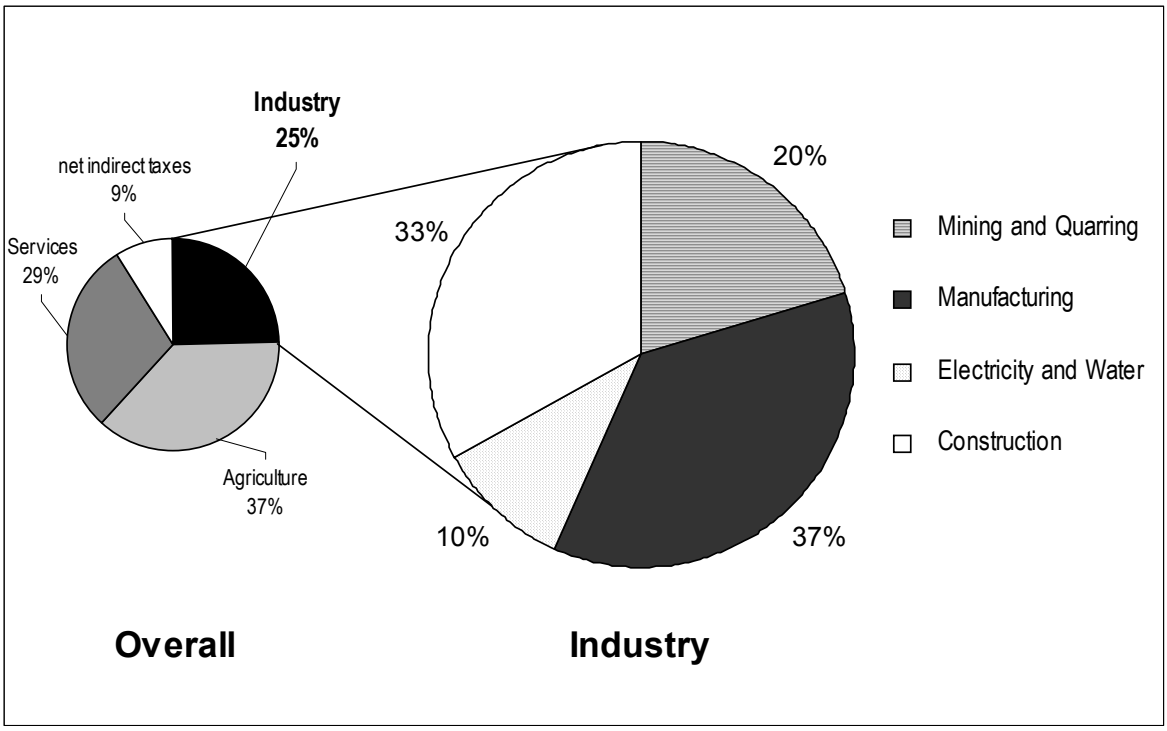
	2000	2001	2002	2003	2004	2005*	% (2005)
AGRICULTURE	**1,849.1**	**1,923.5**	**2,007.2**	**2,128.9**	**2,288.4**	**2,437.6**	**37.0%**
		4.02%	*4.35%*	*6.06%*	*7.49%*	*6.52%*	
Agriculture and Livestock	1,251.7	1,314.3	1,382.6	1,455.9	1,533.1	1,625.1	25%
		5.00%	*5.20%*	*5.30%*	*5.30%*	*6.00%*	
Cocoa Production and Marketing	177.9	176.1	175.2	204.0	265.0	300.0	4.5%
		-1.01%	*-0.51%*	*16.44%*	*29.90%*	*13.21%*	
Forestry and Logging	182.1	190.8	200.4	212.6	225.0	237.6	3.6%
		4.78%	*5.03%*	*6.09%*	*5.83%*	*5.60%*	
Fishing	237.4	242.2	249.0	256.4	265.4	275.0	4.2%
		2.02%	*2.81%*	*2.97%*	*3.51%*	*3.62%*	
INDUSTRY	**1,295.3**	**1,333.3**	**1,396.2**	**1,466.8**	**1,542.1**	**1,628.4**	**24.7%**
		2.93%	*4.72%*	*5.06%*	*5.13%*	*5.60%*	
Mining and Quarring	285.9	281.4	294.0	307.8	321.7	331.4	5.0%
		-1.57%	*4.48%*	*4.69%*	*4.52%*	*3.02%*	
Manufacturing	471.7	489.1	512.6	536.2	560.8	591.7	9.0%
		3.69%	*4.80%*	*4.60%*	*4.59%*	*5.51%*	
Electricity and Water	132.3	137.9	143.5	149.5	155.1	165.4	2.5%
		4.23%	*4.06%*	*4.18%*	*3.75%*	*6.64%*	
Construction	405.4	424.8	446.1	473.3	504.6	539.9	8.2%
		4.79%	*5.01%*	*6.10%*	*6.61%*	*7.00%*	
SERVICES	**1,525.3**	**1,602.7**	**1,678.1**	**1,756.7**	**1,839.8**	**1,939.5**	**29.4%**
		5.07%	**4.70%**	**4.68%**	**4.73%**	**5.42%**	
Transport,Storage and Communication	244.9	258.4	273.1	288.9	305.1	323.4	4.9%
Wholesale and Retail Trade, Restaurant and Hotels	351.5	369.4	390.1	409.6	429.7	455.9	
Finance, Insurance, Real Estate and Business Services	220.0	229.9	242.5	255.2	267.4	282.4	4.3%
Government Services	564.8	593.0	614.4	639.0	667.1	700.5	
	97.3	103.6	108.2	112.6	117.3	122.3	1.9%
Producers of Private non-profit Services	46.8	48.3	49.8	51.4	53.2	55.1	
SUB-TOTAL	4,669.7	4,859.2	5,081.5	5,352.5	5,670.3	6,005.5	91.0%
Net Indirect Taxes	472.4	497.9	519.3	542.2	565.5	590.6	9.0%
EQUALS : G.D.P. in Purchasers' Values	5,142.1	5,357.1	5,600.8	5,894.6	6,235.8	6,596.1	100.0%
		4.18%	*4.55%*	*5.25%*	*5.79%*	*5.78%*	

Note *: Provisional

Source: Bank of Ghana

The agriculture and livestock sector, which accounts for one fourth of GDP, has been maintaining the annual growth rate of over 5% in recent years. In 2005, it recorded 6% growth. In contrast, the manufacturing sector has been relatively slow (5% or less) in recent years, except for 2005. Between 2003 and 2005, its growth rate fell below the national average. Similarly, the service sector has experienced moderate growth of 5% or less, except for 2005.

The GDP share of manufacturing sector is about 9% and it has not changed for the last decade. In addition, GDP share for agriculture, industry and service are 37%, 25% and 29% respectively which have been stable since 2000 (See Figure 2.1-1).



Source: elaborated by the team based on Table 2.1-1

Figure 2.1-1 Ratio of Industry (2005)

2.1.2 Trade

Ghana's exports, after reaching $2.09 billion in 1998, declined until 2001. Then they resumed growth and reached $2.73 billion in 2004 (See Table 2.1-2). Cocoa beans are the leading export item (36%) of the total on a value basis, followed by gold (31%), and lumbers and lumber products (7.7%). The value of export other than the above main items amounts to around $700 million (2005), accounting for 25% of the total. The government strives to promote exports of non-traditional goods, but they have not grown significantly. The main non-traditional items were cocoa paste, plywood, processed tuna, cocoa butter and frozen tuna. On the other hand, import grew faster than export. As a result the trade deficit reached 2.5 billion in 2005. The reasons for high import were the price hike and increasing demand for crude oil caused by increased demand for gasoline.

Table 2.1-2 Balance of Payment (2002-2005)

Unit: million US$

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005*
Merchandise Trade Balance	**-366.9**	**-638.3**	**-900.8**	**-1274.6**	**-830.2**	**-1101.3**	**-691.8**	**-436.2**	**-1,558.1**	**-2,543.2**
Exports (f.o.b)	1570.1	1489.9	2090.8	2005.3	1936.3	1867.1	2,015.2	2,796.6	2,739.2	2,736.6
Cocoa beans & Products	552.0	470.0	620.4	552.3	437.1	381.1	474.4	817.7	1,025.7	843.2
Gold	612.4	579.2	687.8	710.8	702.0	617.8	689.1	830.1	840.2	945.8
Timber & Timber Products	146.8	172.0	171.0	173.8	175.2	169.3	182.7	174.7	211.7	226.8
Other Exports	258.8	268.7	611.6	568.4	621.9	698.9	669.0	974.0	661.6	720.7
Imports (f.o.b)	-1937.0	-2128.2	-2991.6	-3279.9	-2766.6	-2968.5	-2,707.0	-3,232.8	-4,297.3	-5,279.8
Non-oil	-1677.9	-1894.3	-2776.4	-2946.6	-2246.4	-2451.7	-2,200.0	-2,669.9	-3,522.3	-4,171.6
Oil	-259.1	-233.9	-215.2	-333.3	-520.1	-516.8	-507.0	-562.9	-775.0	-1,108.2

Note *: Provisional

Source: Bank of Ghana

Main export destinations were U.S. (7.4% of the total), Germany (5.3%), U.K. (4.1%), Holland (3.9%) and France (3.4%). Declining export to industrialized country dropped suddenly in 2005 and the export share to industrialized country decreased from 60% to 43.5%. On the other hand, export to neighboring countries (Cote d'Ivoire, Burkina Faso, Togo and Nigeria) increased by just that much and gained the share. Major import origins were Holland (11.8%), U.K.(8.9%), France (3.8%), U.S.(3.3%) and Germany (2.6%). The import share of all the industrialized countries totaled 44%.

2.1.3 Foreign Investment

Foreign investment in the country has exceeded 100 cases annually since 2001. In 2007, 211 cases were registered up to September from January. The breakdown of investments made between January 2001 and September 2007 indicates that the manufacturing sector is the largest in the number of cases (376), followed by service (328), tourism (141), and building construction (103). In the amount of investment, the manufacturing sector ranked first with $2,433 million, followed by service ($348 million) and building and construction ($217 million). The amount of investment in the manufacturing sector is fairly large because of the investment in the refinery of bauxite in 2006. Within the manufacturing sector, investment was directed to diverse sub-sectors, including plastic products, bags, and woodwork products. Major countries that made investments in the manufacturing sector included India, China, and Lebanon. Regionally, Greater Accra holds a dominant share of over 83%, followed by Ashanti (5%).

Table 2.1-3 Investment by Sector (2001/1-2007/9 accumulated)

	No. of Project	Investment cost (million US$)
Manufacturing	376	2,433
Service	328	348
Tourism	141	82
Build & Const.	103	217
Export Trade	55	21
Agrculture	76	66
General Trade	226	172
Total	1,305	3,339

Source: GIPC

Table 2.1-4 Investment by Region (2001/1-2007/9 accumulated)

REGION	TOTAL	% OF GRAND TOTAL	S E C T O R S						
			AGRICUL-TURE	MANUFAC TURING	BUILDING & CONST.	TOURISM	SERVICE	EXPORT TRADE	GENERAL TRADE
Greater Accra	1101	83.35%	34	326	88	103	296	41	213
Ashanti	64	4.84%	6	16	6	8	14	4	10
Western	42	3.18%	3	8	2	11	12	2	4
Central	38	2.88%	12	9	4	9	3	1	
Eastern	33	2.50%	10	8	3	6	5		1
Volta	18	1.36%	8	6		1	2	1	
Northern	12	0.91%	2	2	1	2	1	2	2
Brong Ahafo	9	0.68%	2	2	1		1	3	
Upper East	3	0.23%		1		1		1	
Upper West	1	0.08%					1		
TOTAL	1,321	100%	77	378	105	141	335	55	230

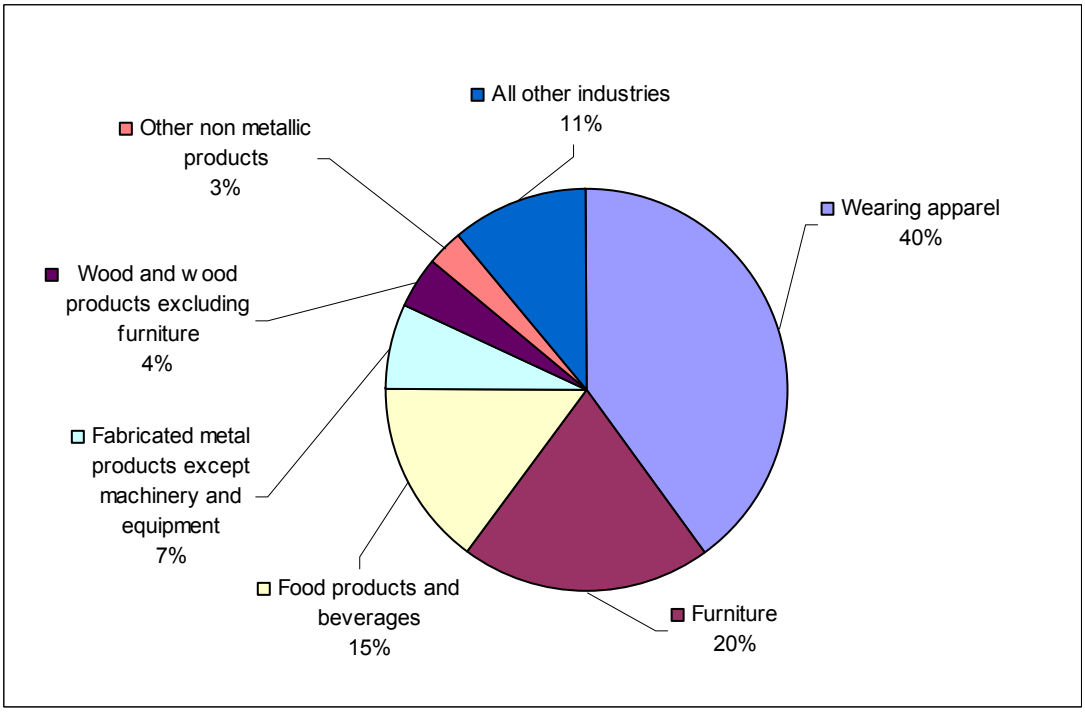
Source: GIPC

2.2 The General Condition of the Industry in Ghana

A general outline of the manufacturing industry in the country, as presented below, is based on National Industrial Census 2003 issued in June 2006, which was conducted in two phases between October 2003 and February 2005. Industrial classification is based on International Standard Industrial Classification (ISIC). The census covers "recognizable establishments" and does not include all household industries.

2.2.1 Industry Sector

In the country's manufacturing industry, companies manufacturing apparel (40%), furniture (20%), and food and beverage (15%) account for three fourths in terms of the number of establishments, and the apparel industry holds a dominant share. (Number of total establishments is 24,133.)

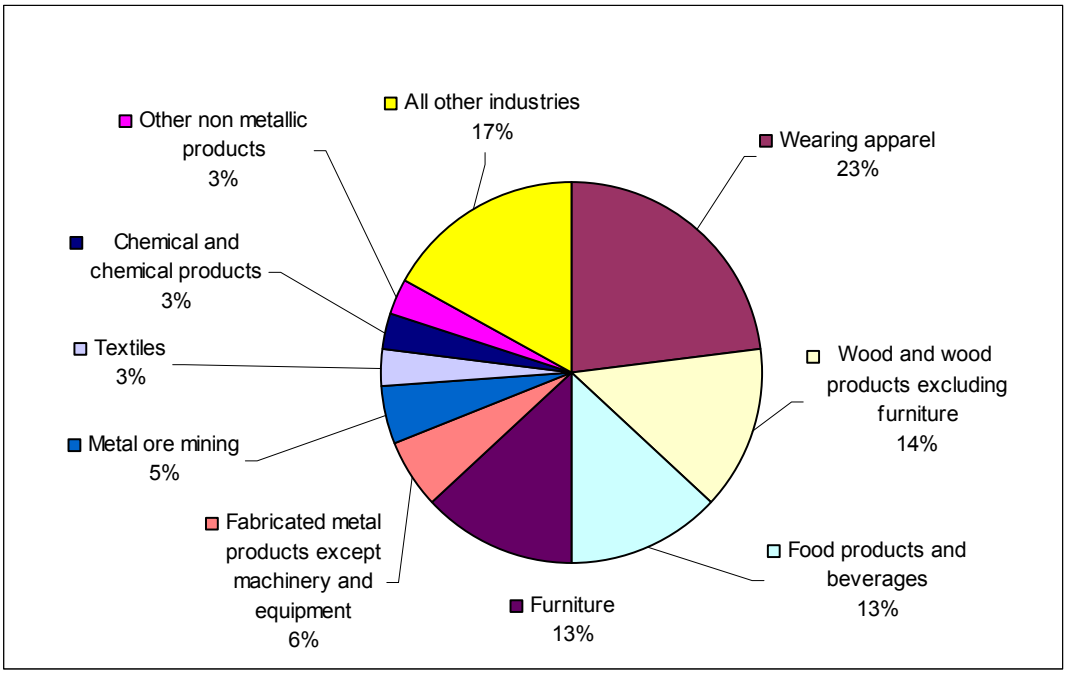


Source: National Industrial Census 2003

Figure 2.2-1 Number of Establishment by Industrial Sector

The furniture industry makes mostly wooden furniture. In contrast, the food and beverage industry makes a wide range of products, including processed fish products, processed fruits and vegetables, dairy products, vegetable and animal oils, flour milling, bread, and beverages.

The number of persons engaged by the industrial sector[1] indicates that the number of workers employed by the apparel industry is relatively small in comparison to the number of establishments. On the other hand, the wood and wood product industry, which represents a meager 4% of the total number of establishments, accounts for 14% of total employment which indicate that companies in the industry are relatively large in size.



Source: Same as Figure 2.2-1

Figure 2.2-2 Number of Person Engaged by Industrial Sector

In terms of value of output, the utilities such as electricity and water supply (15%), mining (13%) and petroleum product sectors (13%) account for major portions. The total output is 37 trillion cedi (Approx. US$4.2 billion[2]). As they are led by state enterprises or companies partially owned by government, the economic impacts of private enterprises are still small. On the other hand, state-owned companies account for 6% of the total persons engaged in the manufacturing industry, whereas private-owned is 87% and joint ownership is 7%. The food and beverage industry is also a key sector in terms of output, reflecting the fact that agriculture is the country's major economic base and provides a variety of materials for industries using or processing them, while the industry includes products that serve the domestic market, such as flour, cooking oil, and beverages (both alcohol and non-alcohol). Finally, the apparel

[1] The figure includes non-paid workers.
[2] The exchange rate used in 2.2.1 is 8800 cedi to US$1 (The exchange rate of December 2003)

industry's production is so small that it is included in "all other industries" category although the industry occupied 40% of the total establishments.

Source: Same as Figure 2.2-1

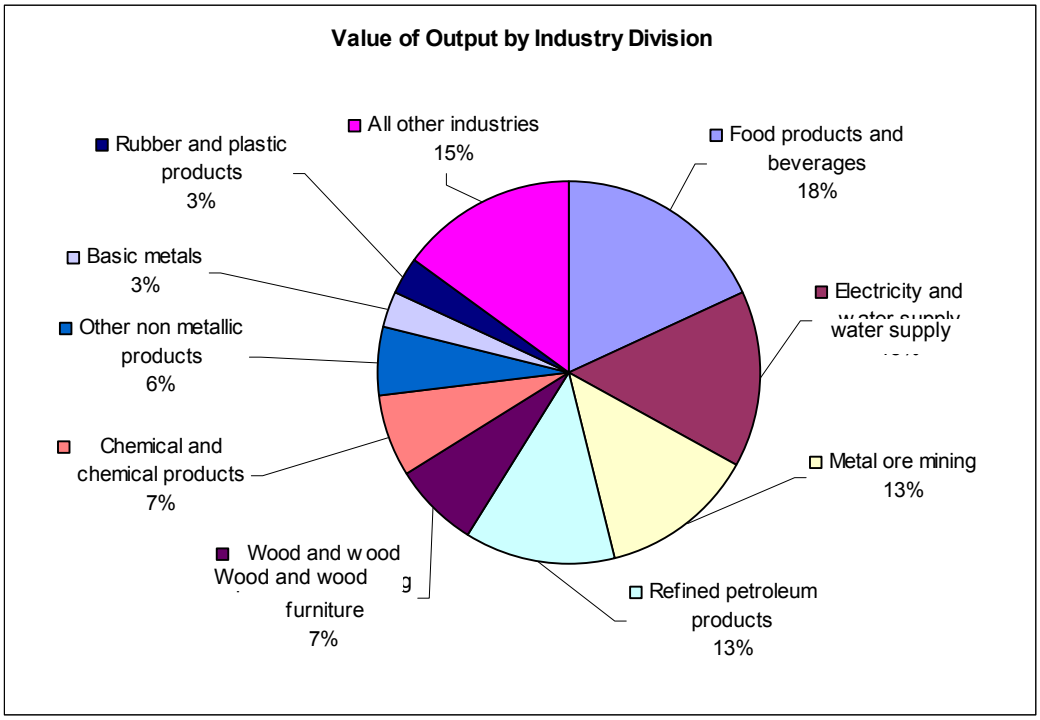


Figure 2.2-3 Output by Industrial Sector

2.2.2 Geographical Distribution of Manufacturing Industries

Analysis of regional indicators shows that manufacturing industries are highly concentrated in the Greater Accra and Ashanti regions, which hold a combined share of 55% of total establishments (See Table 2.2-1). In terms of the number of employees[3] as well as persons engaged, Greater Accra holds a much larger share than Ashanti. The region also accounts for around 70% of the total value of production. As for other regions, those south of Ashanti represent predominant share. On the other hand, the three northern regions (Northern, Upper East, and Upper West) hold a combined share of 7% in the number of establishments and less than 1% in the value of production. Aside from the fact that the northern regions are less populated, the value of output per employee in these regions is around one-half the national average.

Among the regions, Western (where Takoradi Port is located) shows the largest number of employees per establishment, over 15 in comparison to the national average of less than 5

[3] Unpaid workers are not included.

because there are large scale wood related companies. Greater Accra has less than 8 employees per establishment. On the other hand, Greater Accra shows the highest value of output per employee, ¢353 million (equivalent to US$40,000), in comparison to the national average of ¢225 million (US$ 25,500).

Table 2.2-1 Major Indication of Industrial Activities by Region

Manufacturing

REGION	No. of establ.	No. of employees	No. of pers. eng.	Wages and salaries (Million Cedis)	Value of output (Million Cedis)	Cost of mats. and Ind. Serv. (Million Cedis)	Census value added (Million Cedis)
Western	1,178	18,062	24,266	200,430.71	3,011,238.28	1,615,605.50	1,411,194.43
Central	1,808	4,710	12,712	35,851.02	289,333.15	164,765.63	125,159.03
Greater Accra	6,629	51,440	75,594	1,017,118.39	18,167,152.66	12,455,669.86	5,682,016.87
Volta	1,246	2,985	9,275	52,930.23	670,643.74	396,799.08	258,833.19
Eastern	3,038	7,199	18,615	81,539.06	578,375.85	344,021.54	221,746.88
Ashanti	6,521	24,977	56,736	223,548.06	3,010,022.53	1,403,982.36	1,611,700.95
Brong Ahafo	1,693	4,873	12,914	30,375.93	390,053.61	190,954.96	209,210.42
Northern	695	756	5,041	4,423.00	176,209.73	70,808.89	104,998.83
Upper East	665	1,033	4,372	2,642.21	36,691.75	25,171.86	11,561.11
Upper West	324	739	2,428	4,208.96	46,406.94	29,674.00	16,304.22
National Total	**23,797**	**116,773**	**221,952**	**1,653,067.60**	**26,376,128.20**	**16,697,453.70**	**9,652,725.90**

Source National Industrial Census 2003

2.2.3 Distribution of Manufacturing Companies by Size

The company size category used in the Census is different from that of this report. Despite this difference, the figures indicate distribution of micro and small scale companies well enough. In terms of the number of establishments, micro and small scale companies with 1 - 9 persons engaged accounts for 84% of the total whereas small companies with 10 - 19 persons engaged 12% and small companies with 20 - 29 persons engaged 2%. Micro companies together with small scale companies account for 98% of the total establishments.

On the other hand, in terms of the number of employees by size of establishment, establishment with more than 30 persons engaged (medium and large sized company) accounts for 68% of the total (See Table 2.2-2). It means that micro and small companies combined have only 32% of the total. In terms of the number of persons engaged including non-paid workers, micro and small sized establishments account for 62% of the total. It indicates that micro and small sized firms are mainly family business and have many non-paid workers.

Medium and large sized establishments with more than 30 persons engaged, dominate the production sector and account for 90% (in terms of value). The production by establishments with 1 - 9 persons is 20 million cedis (US$ 2,300) per person as against establishments with more than 30 persons engaged of 270 million cedis (US$ 30,700). Even comparing in terms of per employee, the former group is 94 million cedis (US$10,700) and latter group is 290 million cedi (US$ 33,000), which is 3 times higher than the former group.

Table 2.2-2 Major Indicator by Size of Establishment

Manufacturing

Size of Establishment by no. of person engaged	No. of establ.		No. of employees		No. of pers. eng.		Value of output (Million Cedis)	
1-9 persons	20,004	84%	19,014	16%	88,778	40%	1,798,370	7%
10-19 persons	2,742	12%	11,444	10%	35,742	16%	1,072,656	4%
20-29 persons	535	2%	7,227	6%	12,659	6%	453,798	2%
30 or more persons	517	2%	79,088	68%	84,774	38%	23,051,304	87%
National Total	**23,798**		**116,773**		**221,953**		**26,376,128**	

Source: National Industrial Census 2003

2.3 Background of Local Industry in Ghana

In any country, human resources and infrastructure are key factors for industrial promotion. Ghana is no exception to this. Although these factors are not directly covered by the present study, with exception to technical education, they nevertheless have significant impacts on industrial development and growth, especially local industries. For this reason, the current state of industrial human resources and infrastructure in the country is described in the section below.

2.3.1 Human Resources

Since enforcing human resource development will be of great benefit to the future of industrial development, education and training are important for the government. In this section, education system related to every level of workers and technical training as basis of industrial technology are explained.

2.3.1.1 Basic Education

Ghana's educational system consists of primary schools (six years), junior secondary schools (three years), senior secondary schools (four years), and universities (four years). (See Figure 2.3-1) Primary and junior secondary education (nine years) and preschool education (two years), which is free of charge[1], are compulsory. A small percentage of students go to senior secondary schools, and a very small percentage of students receive tertiary education.

[1] New education system started from year 2007.

<table>
<tr><td>31</td><td>D 4</td><td rowspan="4">Doctor course</td><td colspan="4"></td></tr>
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<tr><td>23</td><td>TH 3</td><td rowspan="3">College of education</td><td rowspan="3">Polytechnic</td><td rowspan="3">College for Diploma</td><td rowspan="3">Other Colleges</td></tr>
<tr><td>22</td><td>TH 2</td></tr>
<tr><td>21</td><td>TH 1</td></tr>
<tr><td>20</td><td>NS 1</td><td colspan="5">National Service 1 [2]</td></tr>
<tr><td>19</td><td>SHS4</td><td colspan="5" rowspan="4">Senior High School</td></tr>
<tr><td>18</td><td>SHS3</td></tr>
<tr><td>17</td><td>SHS2</td></tr>
<tr><td>16</td><td>SHS1</td></tr>
<tr><td>15</td><td>JHS3</td><td colspan="5" rowspan="3">Junior High School</td></tr>
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<tr><td>13</td><td>JHS1</td></tr>
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<tr><td>5</td><td>PR1</td></tr>
<tr><td>Age</td><td>Grade</td><td colspan="5">Educational Organizations</td></tr>
</table>

The shaded area denotes compulsory education.

Figure 2.3-1 Ghana's Educational System

Major problems are the shortage of teachers as well as the low enrollment rate in rural areas. In particular, serious shortages are seen in the northern regions, from primary schools to senior secondary schools. Unqualified teachers often provide group education in villages. School teachers are trained at 38 teacher training colleges, universities and colleges of education, but graduates often refuse to work in rural areas which cause the shortage of teachers in rural areas. As a result, the quality of education in rural areas is much lower than that in urban areas. While compulsory education is free, various fees and charges are collected; as a result many students drop out from school before completion due to financial burdens. Also, many female students drop out from school at relatively young ages because of pregnancy. The shaded area denotes compulsory education. As seen in the table below, the country's school enrollment rate is relatively high, but that in rural areas is much lower than urban areas including Accra and Kumasi.

[2] It is a system that all Senior High School graduates should give social services for one year.

Table 2.3-1 Education in Ghana

	2000	2001	2002	2003	2004	2005
School enrollment, primary (% gross)	80.48	77.07	79.73	77.07	81.39	88.37
School enrollment, secondary (% gross)[3]	37.40	35.58	37.48	38.91	41.76	43.57
School enrollment, tertiary (% gross)	2.81	3.19	3.29	3.26	3.14	..
Ratio of girls to boys in primary and secondary education (%)	89.41	90.89	91.16	93.65	90.57	92.56

Source: World Development Indicator

2.3.1.2 Technical Education

Technical education in Ghana consists of various systems, both formal and informal. Problems relating to technical education include the lack of effectiveness due to the inability to meet the needs of industry sectors, the shortage of equipment and materials required to provide practical training, and the lack of practical knowledge and skills on the teacher's side. At present, it emphasizes theory and lecture. The following table summarizes major institutions specialized in formal technical education and their characteristics.

[3] Junior High School + Senior High School

Table 2.3-2 Ghana's Educational Institutions Specialized in Technical Education

Name	Supervising ministry[4]	Mission	Fields / Departments	Level	Remarks
JSS: Junior Secondary School	MOESS	To help a large number of students who will not receive higher education to prepare for life.	Cookery, woodwork, paper craft, metalwork, graphic design, and sewing	Preparation for employment and higher technical education	
SSTS: Senior Secondary Technical School	MOESS	To teach practical skills in preparation for technical/vocational education at high educational institutions.	Cookery, woodwork, metalwork, construction, electrical work, etc.	Workers, foremen, and primary level technicians	One level higher than JSS
TI: Technical Institute	MOESS	To train workers, foremen, and technicians.	Electricity/electronics, construction, automobile, furniture making, machining, maintenance, metalwork, etc.	Technical education primarily targeting high school graduates	Educational system conducted parallel to higher education
Polytechnic	MOESS	To train skilled workers, managers and engineers with advanced skills, who can contribute to the fostering and support of competitive industries in the international market	Engineering, applied science, business administration, etc.	University-level advanced education; HND (Higher National Diploma) level	
National University	MOESS	To train advanced engineers, technicians, technical managers, and managers, who can develop and manage various industrial and other organizations.	Agriculture, engineering, science, mining	HND level	KNUST, University of Ghana, Cape Coast
NVTI: National Vocational training Institute	MOMYE	To train workers, supervisors, and low-level technicians.	Auto mechanics, carpentry, cooking, hairdressing, etc.		Skill certification is available.
ICCES: Integrated Community Center for Employable skills	MOMYE		Informal skill training for young people		No certification is issued after completion of training courses.
GRATIS Foundation ITTU: Intermediate Technology Transfer Unit	MOTI/PSD/ PSI	To provide practical and latest technical training course for a few years.	Fields immediately related to professional skills, such as metalwork, wood- work, construction, CAD/CAM, etc. Short-term courses are also offered, including dyeing, home economics, and computer.	Mainly targeting graduates of SSS and TI.	Operating incubation facilities to help graduates to start their own business (manufacturing).

Source: "Development Study on Technical Education Planning for the Republic of Ghana," JICA

[4] The original document uses former titles; this table uses the current titles.

2.3.2 Infrastructure

The status of infrastructure is described in this section as conditions and factors in order to develop local industries. The problem of infrastructure in Ghana is immense and greatly imparts on industry. Undeveloped infrastructure especially in rural areas causes low productivity and high cost. Currently, the Government of Ghana is making great efforts to improve these conditions; however, the gap between urban and rural areas is still large. This has been identified as one of causes of low investment in rural areas and the hindrance to the development of large scale industries.

2.3.2.1 Electricity

In Ghana, a hydroelectric power plant on the Lake Volta produces 1,072MW, a combined cycle gas power station in Takoradi supplies 220MW, and diesel power stations supply 30MW. The produced electricity is exported to Cote d'Ivoire in the west and Togo in the east. However, the country is facing electricity shortage as a result of growth of domestic demand.

The Ministry of Energy formulated the National Electrification Scheme (NES) and the Self Help Electrification Project (SHEP) in 1989, under which it has been promoting rural electrification by installing transmission lines. However, the power sector faces financial difficulty due to the depreciation of the local currency, and delinquency in payment of user charge, and other reasons. Electrification in rural areas has not achieved the expected economic impact as the electrification rate of rural areas is very low at 20% on average (compared to 60% in the urban areas). The Ghanaian government has set forth the rural electrification project as one of the basic energy policies for the purpose of correction of the gap in economic activity and standard of living between urban and rural areas.

2.3.2.2 Communication

(1) Fixed telephone

In Ghana, the national post and telephone corporation was privatized to Ghana Telecom in 1996, which provides subscriber telephone service. Subscriber lines exceeded three million at the end of 2005, accounting for 73% of local lines. The subscription rate, both fixed and cellular phones, has been increasing steadily, from 1.72% in 2000 to 9.27% in 2004 (according to World Development Indicator).

(2) Cellular phone

The cellular phone service in the country was launched by Millicom in 1992. In that year, 19,000 Ghanaians owned cellular phones. Ownership grew to over 43,000 in 1998 and 68,000 in 1999. The number of subscribers reached 700,000 in 2003. At present, there are four cellular phone companies (See Table 2.3-3).

Table 2.3-3 Market Penetration of Cellular Phone

(as of September 2003)

Company name	Network provider	System	Start of service	No. of subscriber	
				Prepaid	Total
Kasapa Telecom	KASAPA	AMPS	June 1995	34,000	34,000
Ghana Telecom	Ghana Telecom Mobile GSM	GSM-900	October 2000	189,400	210,500
Millicom	Tigo	TACS GSM-900	June 1992 June 2002	0 0	16,400 74,000
MTN	MTN	GSM-900	November 1996	356,100	367,100
Grand total				579,500	702,000

* The total column on the right side denotes a total of prepaid and measured rate users.

Source: http://www.ghanaweb.com/Ghana Homepage/communication/mobile.php

According to World Development Indicator, fix and cell phone penetration rate per 1000 persons increases year by year. The rate grew from 17.2 persons in 2000 to 92.7 in 2004.

(3) Internet

Africa Online provides internet service through satellite lines with the maximum speed of 256kps. In addition, Internet Ghana Ltd. is deploying DSL service. It serves Accra, Kumasi, and Takoradi, and charges $100 per month for schools and other educational institutions and $225 per month for companies (as of June 2006). Internet cafes are very popular and are seen in most regional capitals and other highly populated municipalities. It should be noted, however, that not every internet café is connected to broadband lines, so that the internet connectivity varies greatly among regions.

2.3.2.3 Water

Ghana Water and Sewerage Corporation (GSWC) was established in 1965. Since then, it has been constructing and operating water supply service in urban areas as a public sector

utility. In 2001, the World Bank proposed to provide loans under the condition of a 95% increase in water rate and privatization of GSWC to recover the required cost entirely by water supply service. Accordingly, GWSC has been privatized and reorganized to Ghana Water Company Ltd. (GWC), which is now operating water supply service. At the same time, water supply rate was raised substantially to affect industrial activities and general consumers.

2.3.2.4 Transportation System

(1) Road

In Ghana, roads serve as a principal means of transportation and truck transportation accounts for 98% of inland freight transport.

- National highways: Road length totals approximately 4,100km. They connect the capital and regional centers, together with ports, airports and other key facilities; including arterial roads connected to neighboring countries.
- Inter-regional highways: Road length totals approximately 2,500km. They connect regional centers and construction lags behind national highways.
- Regional roads: The total road length reaches approximately 5,800km. They are roads connecting centers within the region, and the standard is lower than national and inter-regional highways.

The pavement rate is still low at around 18%. Also, on paved roads, there are many locations that require repairs. As of November 2007, national highways between Accra and Kumasi, and Accra to Cape Coast were renovated and the traveling times were reduced.

(2) Railroad

The first railroad was inaugurated in 1903 to serve the western part of the country for the primary purpose of transporting timbers, cocoa beans, manganese ores, and bauxite. The railway was extended in 1923 and 1956, and it now functions as a rail network connecting Accra, Kumasi, Sekondi, and Takoradi.

(3) Ports

Ghana has two commercial ports, Tema situated approximately 30km away from the east of Accra, and Takoradi 250km away to the west. The two ports handle 90% of the country's exports and imports.

1) Tema

Tema Port was inaugurated in 1962 and now handles 80% of cargoes imported to Ghana. Main items are crude oil, petroleum products, rice, sugar, wheat, alumina, aluminum, wood products, and cocoa products. As the port is situated within the Accra-Tema metropolitan region, it serves as the main gateway to the region. Most of the imported cargoes handled by the port are distributed within the metropolitan region, but some of them are transported to other West African countries by land or sea. The port itself has various problems, including insufficient water depths, a limited open space for cargo handling, and the shortage of loading and unloading equipment which cause the delay in cargo handling.

2) Takoradi

Takoradi Port is the country's major export port, handling cocoa beans, lumber, manganese, bauxite and other items. It also handles imports of bulk cargoes, such as clinker, wheat and petroleum products. Container cargoes largely come from Western Europe. Some of the imported cargoes are re-exported to Burkina Faso and other neighboring countries. Note that the port faces problems similar to Tema (insufficient water depths, space limitation, and inefficient handling).

2.4 Issues Relating to Economy and Industry

In this section, conclusions and issues relating to local industries, as developed on the basis of 2.1 through 2.3, are presented.

(1) Agriculture-centric economy

Because of the agriculture-centric economic structure, local industries are mainly related to the processing of agricultural products. However, most agricultural products – except major export items such as cocoa – are not highly competitive and require improvement in terms of quality and production volume. As most local companies are not capable of making products that meet requirements in the export market (price, quality, volume, and delivery schedule), the country cannot diversify export items. To modernize the manufacturing industry within a short period of time, foreign direct investment is required. In reality, however, FDI is concentrated in industrial estates located in Accra and Tema and is thus limited in the ripple effect on local economy.

(2) Characteristics of industrial sectors and major issues facing them

Among industrial sectors, the apparel and furniture industries that have a large number of establishments are dominated by microenterprises and small enterprises, indicating a low value of production per employee. It comes from problems relating to equipment capacity and productivity and there is a significant room for improvement. In terms of geographical distribution, establishments are concentrated in Greater Accra and Ashanti. It suggests the importance of local industry development, particularly in the three northern regions.

(3) Importance of education

In the area of basic education, low enrollment rates in rural areas present a problem and restrain the development of local industries. On the other hand, development of a non-agricultural industry in a rural area can induce enrollment in basic education. The emergence of a local industry increases personal income to allow parents to send their children to school, and children grow to join the workforce to support the local industry.

Technical education in Ghana, however, does not always meet the changing industry needs. Availability of competent workers forms an important element of the business environment by constituting a valuable resource for local industries.

(4) Regional disparity of infrastructure

There is a substantial gap in the level of infrastructure between regions which is a major hindrance to the development of local industries in rural regions. Manufacturing operation in rural regions requires higher costs (construction, energy, and transportation) than in urban regions. On the other hand, presence of two commercial ports provides an advantage for industrial development, and progress in road construction, especially in and around Accra, is a good sign for local industries.

3. Current State of SME and Local Industry Promotion in Ghana

3. Current State of SME and Local Industry Promotion in Ghana

3.1 National Development Plans

Three national strategies which form the basis of the local industry development policy are introduced in this section. Growth and Poverty Reduction Strategy II sets the basic direction for other industrial promotion policies. Private Sector Development Strategy sets out the purpose of providing a business environment. Trade Sector Support Programme directly deals with local industry development and determines the direction of MOTI/PSD/PSI activities. The New Industrial Policy that is in the process of formulation at this moment is explained.

3.1.1 Growth and Poverty Reduction Strategy II (GPRS II)

GPRS I, issued in 2003, formulated a policy that was focused on the accomplishment of the poverty reduction objectives of the UN's Millennium Development Goals. GPRS II, to be implemented between 2006 and 2009, is intended to introduce a shift of strategic focus towards the private sector development, even though many of the actual programs will be in the same areas as GPRS II. The central goal of the new policy is to accelerate the growth of the economy so that Ghana can achieve middle-income status by 2015.

GPRS II has the following three priorities
- Private Sector Competitiveness
- Human Resource Development
- Good Governance and Civic Responsibility

GPRS II sets its sights on the reinforcement of the private sector's competitiveness. Specifically, it focuses on the acceleration of agriculture-led growth as continued from GPRS I. The agricultural sector accounts for 60% of the country's employment and the development of agriculture-related industries is thus expected to create significant impacts on poverty reduction in rural areas. The government plans to implement various programs to support the agricultural sector, including: (1) amendment of the land property right law to facilitate land acquisition; (2) expansion of irrigation facilities; (3) improvement in access to loans and agricultural inputs; (4) promotion of selected crops; and (5) improvement in access to mechanized farming.

The following policies have been announced in the areas of trade and industry: (1) promotion of agricultural processing; (2) reinforcement of access to export market; (3) boosting of industrial production and competitive industrial products; and (4) promotion of subcontracting. In the area of human resource development, vocational training, entrepreneur training and the deepening of relationship between industry and training institutes to produce skilled workers are contained in GPRS II.

Budgetary allocation under GPRS II emphasize on human resource development which accounts for 55% of the total, compared to 35%[1] for the strengthening of the private sector. In the latter, major portions of the budget are allocated to the improvement of transportation infrastructure, promotion of trade and industry, modernization of agriculture, and energy supply (See Table 3.1-1).

Table 3.1-1 GPRS II Estimated Cost, 2006-2009

PRIVATE SECTOR COMPETITIVENESS

Key Focus Area	*Expenditure Summary (In Millions $)*									
	2006		**2007**		**2008**		**2009**		**Total**	
	Value	%	Value	%	Value	%	Value	%	Value	%
Private Sector Development	50.564	6.7	83.906	11.0	78.244	11.1	70.419	11.1	283.133	9.9
Modernized Agriculture	141.040	18.8	131.694	17.2	101.474	14.4	91.327	14.4	465.529	16.3
Modernized Fishing Methods and a Developed Aquaculture	6.127	0.8	6.122	0.8	7.210	1.0	6.489	1.0	25.948	0.9
Restoration of Degraded Environment and Natural Resource Management	44.589	5.9	44.573	5.8	31.900	4.5	28.710	4.5	149.773	5.2
Promoting Trade and Industrial Development	136.205	18.1	125.674	16.4	112.981	16.0	101.683	16.0	476.543	16.7
Transport Infrastructure: Road, Rail, Water and Air Transport	218.879	29.1	219.140	28.7	219.099	31.1	197.189	31.1	854.306	29.9
Energy Supply to Support Industry and Households	106.067	14.1	106.044	13.9	106.043	15.1	95.439	15.1	413.593	14.5
Science and Technology To Support Productivity and Development	15.205	2.0	15.205	2.0	15.205	2.2	13.685	2.2	59.301	2.1
Developing Information and Communication Technology (ICT)	2.539	0.3	1.862	0.2	1.862	0.3	1.676	0.3	7.939	0.3
Developing The Tourism Sector for Revenue and Employment Generation	25.133	3.3	25.058	3.3	24.955	3.5	22.460	3.5	97.605	3.4
The Music Industry for Growth and Job Creation	1.536	0.2	1.536	0.2	1.536	0.2	1.382	0.2	5.990	0.2
Employment Generation and Improvement and Expansion of Safety Nets	3.709	0.5	3.709	0.5	3.593	0.5	3.234	0.5	14.245	0.5
Life Cycle Related Vulnerability and Exclusion	0.269	0.0	0.269	0.0	0.269	0.0	0.242	0.0	1.049	0.0
Environment Related Factors in Vulnerability and Exclusion	0.018	0.0	0.018	0.0	0.018	0.0	0.016	0.0	0.071	0.0
Sub-total	**751.879**	**100.0**	**764.810**	**100.0**	**704.390**	**100.0**	**633.951**	**100.0**	**2,855.020**	**100.0**

Source: GPRS, Costing Frame work (2006-2009)

[1] According to the 2008 government budget, the budget for private sector competitiveness is a little less than 35%.

3.1.2 Private Sector Development Strategy (PSDS)

PSDS was approved by the government in January 2004 and launched by the President in July 2004. PSDS sets forth the building of a world standard business environment in Ghana as a national vision. The three key targets are;

- Ghana is objectively rated as having one of the best investment climate s in Africa;
- Businesses perceive the investment climate in Ghana to be favorable; and
- Key barriers to doing business in Ghana are eliminated.

It then envisages that the government's role is to execute broad-based reforms under the market principle for the purpose of developing the private sector. These reforms should be carried out under an effective linkage to the export strategy for specific sectors and through a constructive dialogue with the private sector. To achieve this goal, the following four outputs and priority activities are presented.

Table 3.1-2 PSD Strategy Priority Activities

Output	Priority Activities
International: *Ghana's position in global and regional markets enhanced*	- Develop trade policy - Quality standards - Attracting investment - Strategic exports
National: *Efficiency and accessibility of national markets improved*	- Pro-private sector macro economic policy - Financial sector reform - Infrastructure - Public sector reform (including ports/customs; business registration and MSME licensing; tax administration) - Commercial dispute resolution - Land system and property rights
Firm level: *Competence and capacity at the firm level increased*	The GoG's approach to addressing priority firm level interventions is discussed.
Process: *Government's private sector policy formulation, implementation and monitoring and evaluation strengthened*	- Strengthen Government decision making on issues affecting private sector development - Strengthen the quality and quantity of Government's dialogue with the private sector - Undertake strategic monitoring of the Private Sector Development Strategy

Source: National Medium Term Private Sector Development Strategy 2004-2008

Note that PSDS by no means replaces a variety of measures, programs and projects that governments, donor organizations, and NGOs are already implementing to solve problems facing respective segments or aspects of the private sector. Rather, it helps achieve their objectives by coordinating and linking their activities. For this purpose, all activities under implementation will be reviewed to see if they comply with the intention of the above mentioned PSDS priority activities. As for non-priority activities that are being implemented, their level of contribution to the above four outputs will be evaluated.

In PSDS, the lack of management and technical skills is identified as a major problem at the firm level, and the following activities are listed as priority items.

1) General business service
2) Training / Extension service
3) Technological development
4) Information and network
5) Business ethics

With regard to business service which is considered to be closely associated with the study, technical support relating to marketing, technical and management as well as training and skill development for the strengthening of human resources are listed.

3.1.3 Trade Sector Support Programme

MOTI/PSD/PSI established “Ghana Trade Policy” as the first basic trade policy in Ghana. The policy sets the details of the comprehensive development policy across seven thematic areas under discussions with private and public stakeholders with the aim of realizing export-led and domestic market-led industrialization strategies. The policy provides clear and transparent guideline to ensure consistency in the trade policy for private sector-led development. The policy is designed to provide a trade enabling environment to stimulate private sector initiatives. This is to be achieved through the trade policy across the following thematic areas:

- Multilateral Trade
- Creating a fair and transparent import-export regime
- Facilitating Trade
- Enhancing Production Capacity for Domestic and Export Market
- Domestic Trade and Distribution

- Consumer Protection and Fair Trade
- Protection of intellectual property rights

MOTI/PSD/PSI formulated The Trade Sector Support Programme (TSSP) which is designed to systematically implement the Ghana Trade Policy with schemes and measures, as a five year action plan starting from 2006 to 2010. The TSSP comprises 27 projects covering the following ten thematic areas and aims at increasing Ghana's competitiveness in international and domestic markets and improving the legal and regulatory environment for business and consumers. Currently, most of the policies and measures of MOTI/PSD/PSI are implemented based on this program.

- Multilateral Trade
- Import-Export Regime
- Trade Facilitation
- Production Capacity
- Export Trade Support Service
- Standards
- Domestic Trade and Distribution
- Competition and Government Procurement
- Consumer Protection
- Intellectual Property Rights
- Management and Coordination

As seen in Table3.1-3, ten themes are identified and projects to achieve each theme are planned. These projects are presented in the Logical Framework (mostly same matrix as PDM) and indices are established for each. For instance, the Logical Framework for the third project of the production capacity component (SME support[2]) specifies the details of activities required for each output, together with the implementation schedule, its leading agency, and indices. However, these activities are already behind schedule. For instance, NBSSI's five year strategic plan, which is one of the outputs of the "SME support", was scheduled to be perfected in the first quarter of 2006, but the selection of a consultant who would formulate the strategy was delayed until the end of 2007. The major causes for the delay were financial and human resource constraints.

[2] Please see the section of MOTI/PSD/PSI for details of SME support.

Table 3.1-3 TSSP: Components & Projects

Components	Project	Project Purpose
Component 1: Multilateral Trade	1. Improved Structures for International Trade Negotiations	To improve the capacity of MOTI and MDAs with trade-related functions, and stakeholders to take considered and well-coordinated decisions on all aspects of international trade negotiations and trade relations.
	2. Formulation and Implementation of Trade Negotiation Strategies	To ensure effective participation by Ghana in international trade negotiations in support of national development objectives
Component 2: Import-Export Regime	1. Tariff & Non-Tariff Measures	To ensure a level playing field for all economic operators through effective and systematic application of a transparent tariff regime
	2. Export & Import Incentives	To operate an efficiently managed incentives regime to facilitate increased domestic production
Component 3: Trade Facilitation	1. Customs Clearance	To ensure speedy and efficient goods clearance and thus reduce costs
	2. Airport Cargo Handling, Storage & Cold Chain	To facilitate the provision of modern storage and cold chain as well as competitive cargo handling facilities at the airport
	3. Adequate and Efficient Facilities at Ports	To fully implement the port landlord system and facilitate the provision by private sector of modernized container terminals and other port services
	4. Cost Effective and Secured Transit Trade Facilities	To provide efficient, cost-effective and secure cargo transit facilities to serve landlocked neighbors
	5. Free Port	To create a free port to support the objective of making Ghana a hub for West African trade and investment
Component 4: Production Capacity	1. Development of Industrial Policy & Sector Strategies	To develop an industrial policy for Ghana with clear guidelines for the implementation of Ghana's industrialization Programme and ensure a consistent and stable policy environment
	2. Investment Promotion	To enhance Ghana's ability to attract investment into industry, particularly the strategic sectors
	3. SME Support	To effectively develop and promote SMEs through financial and non-financial support for enhanced competitiveness
	4. Education-Industry Linkage	To improve responsiveness of technical education and training to present and future needs of industry, especially in the strategic sectors
	5. Investment Finance	To increase availability of and access to long-term investment finance facilities at competitive prices, especially for targeted productive sectors
	6. Infrastructure Support & Service Delivery for Strategic Sectors	To improve infrastructure facilities and service delivery to productive enterprises for accelerated trade and industry development

Component 5: Trade Support Services	1. Export Trade Support Services	To provide a full range of effective support services to the export sector to achieve growth and expansion in export markets and develop new value-added products for Ghana's export portfolio
Component 6: Standards	1. Institutional Upgrading	To strengthen standards for institutions in Ghana to become internationally competitive
	2. SPS & TBT	To ensure that the application of technical as well as sanitary and phyto-sanitary regulations does not constrain export performance or result in undue costs for imports
	3. Enforcement of Standards on Domestic Market	To protect the health and safety of consumers through the effective development and enforcement of standards
	4. Productivity Improvement	To improve management efficiency and labour productivity and thus enhance the productivity of firms
Component 7: Domestic Trade & Distribution	1. Improved Trade and Distribution Systems and Infrastructure	To create an efficiently functioning domestic market for the development and distribution of products for both local consumption and export, and promote consumer welfare
	2. Promotion of Made in Ghana Goods and Services	To promote the growth and development of local industry through the stimulation of demand for locally produced goods and services
Component 8: Competition & Government Procurement	1. Competition	To establish and maintain a transparent and effective competition regime that promotes efficiency and encourages the development of the productive sector
	2. Government Procurement	To establish a transparent Government Procurement system that enhances competition and promotes the use of local products and services to support local industry
Component 9: Consumer Protection	1. Consumer Protection	To create an environment that affords protection to consumers and enhances consumer welfare
Component 10: Intellectual Property Rights	1. Intellectual Property Rights	To institute an intellectual property regime that encourages innovation, and facilitates productivity improvement and competitiveness

Source: TSSP Volume Two, Final Draft, 12th September 2005

The TSSP budget is presented in the following table. The Production Capacity, 4th component, has the largest budget among all the other components. "SME Support" within Production Capacity has a budget of 30 million US dollars[3]. It accounts for 18% of the total TSSP budget and it shows the government's interest in SMEs. In addition, the DIP which is one of the outputs of "SME support", budgeted about 10 million US dollars[3]. The sources of the fund come from the Ghanaian government and donor countries.

[3] TSSP Volume Three, final draft, TSSP detailed cost

Table 3.1-4 TSSP's Budget

Unit: US $'000

	COMPONENTS	EXPENDITURE/FUNDING CATEGORIES									TOTAL
		CIVIL WORKS	EQUIPMENT	TRAINING TECH. ASST. & CONSULTANCY	OPERATING COSTS	MATCHING GRANT	INVESTMENT FUND	RECOVERY TRUST	CREDIT FUND	RESEARCH & DEVPT FUND	
1	Multilateral Trade	-	330	800	2,277	-	-	-	-	-	**3,407**
2	Import-Export Regime	-	150	1,957	562	-	-	-	-	-	**2,669**
3	Trade Facilitation	2,300	4,560	1,670	2,240	-	-	-	-	-	**10,770**
4	Production Capacity	2,360	12,625	9,211	8,407	2,000	45,000	20,000	1,000	1,000	**101,603**
5	Trade Support Services	5,000	760	2,265	5,163	10,000	-	-	-	2,000	**25,188**
6	Standards	500	5,230	2,625	6,101	-	-	-	-	-	**14,456**
7	Domestic Trade & Distribution	-	920	1,405	1,721	2,000	400		5,500		**11,946**
8	Competition & Govt Procurement	-	350	1,080	1,865	-	-	-	-	-	**3,295**
9	Consumer Protection	400	290	1,760	2,118	-	-	-	-	-	**4,568**
10	Intellectual Property	-	277	660	1,176	-	-	-	-	-	**2,113**
11	Management & Coordination	400	330	1,120	7,950	-	-	-	-	-	**9,800**
	TOTAL	**10,960**	**25,822**	**24,553**	**39,580**	**14,000**	**45,400**	**20,000**	**6,500**	**3,000**	**189,815**

Source: TSSP Volume Two, Final Draft, 12th September 2005

3.1.4 New Industrial Policy

Currently, MOTI/PSD/PSI is formulating the New Industrial Policy. Formulation of the New Industrial Policy was stated as one of the programs in the TSSP and planned to be published in the middle of 2008. Since this policy may be related to the future local industry development, it is worth putting its contents in this report. Although the final content has not yet been determined as of November 2007, contents, which were presented during the forum for stakeholders, are described as follows.

(1) Overall objective

1) To provide clear and transparent guidelines for the implementation of Ghana's industrial development agenda.
2) To ensure a consistent and stable policy environment within which the private sector can promote industrial activities effectively and with certainty.

(2) Policy Formulation Process

Policy formulation process until publishing is described as follows.

1) Definition of structure and content of new industrial policy
2) Preparation of background document on industrial policy
3) Analysis of policy options for new industrial policy
4) Review of policy recommendations by key stakeholders
5) Preparation of draft policy document
6) Review by stakeholders and finalization of policy document

(3) Thematic areas

There are 21 thematic areas, which are subject to change.

- Manpower development and training for industrial development
- Incentive framework for industrial development
- Labor and industrial relation
- Financing for industrial development
- Privatization and public-private partnerships
- Technology for industry
- Raw materials and inputs supply
- Innovation, research and development
- Spatial distribution, decentralization and cluster development
- Industrial lands, infrastructure and utilities for industrial development
- ICT for industrial development
- Industrial sub-contracting
- Marketing and distribution of industrial products
- Standards
- Industrial data and information
- Industrial legislation and regulation
- Strategic interventions in industrial development
- Environment management and sustainable industrial development
- Gender mainstreaming in industry
- Quality health in industrial development
- Institutional and program support of industrial development

The above thematic areas, “Spatial distribution, decentralization and cluster development” which includes 1)DIP, 2)District level investment promotion, 3)BDS and District level institutional support mechanism and 4)strengthening of regional and district level business associations and advocacy groups, are closely related to this study. At the same time, strategic sectors (industrial sub-sector) will be selected for making sector strategies, and the most likely target industries in the study will be included in the list.

3.2 Local Industry Promotion Schemes

MOTI/PSD/PSI is currently implementing the President's Special Initiative (PSI), District Industrialization Programme (DIP) and Micro Small and Medium Enterprises Project (MSME) as major local industry development and SMEs promotion policies. These are explained as follows

3.2.1 President's Special Initiatives (PSI)

The PSI aims at sustainable economic growth by promoting agriculture-based industries and constitutes part of the private sector development. Its initial targets are textile and garment, palm oil, cassava starch and salt. For textile and garment, the primary goal is to develop competitive, large-scale enterprises serving American and European markets. Support for the palm oil sector is expected to promote local development. For cassava starch, reduction of poverty, the earning of foreign currency and industrial development are primarily aimed at. Later, the PSI will be extended to handicrafts and remote education. In accordance with reorganization of the government in 2006, Former Ministry of Private Sector Development and Presidential Special Initiatives joined former Ministry of Trade and Industry and became MOTI/PSD/PSI.

(1) Textile and garment

The PSI in this area envisages better access of garments to the U.S. market by using African Growth Opportunity Act (AGOA), which focuses on the reinforcement of production capacity and human resource development of garment companies. The primary objective is to foster an export-oriented and mass production garment industry. Goals are set to: a) establish 112 factories that meet the above objective by 2008; b) create 50,000 jobs; and c) earn $1.2 billion worth of foreign currency.

The strategies to achieve the above goals are set as follows: a) to attract large foreign enterprises; b) to promote selected local medium-scale enterprises that are capable of assuring product quality that is suitable for exports to industrialized countries; and c) to foster merchant exporters (manufacturers having their own garment production department and controlling group contractors to export their products to industrialized countries.

Major programs to support the strategies include: a) intermediary service for obtaining loans from associated banks (such as Ecobank) and Export Development Investment Fund

(EDIF); b) support for procurement of equipment and fabric; c) training project; and d) market development support. The following activities have been done.

At present, only seven companies are in operation, consisting of two foreign companies (California Link and Belin Textiles) and five local medium-sized companies (including Sleek Garment and 1647 Ltd.). The PSI (MOTI/PSD/PSI) has provided supports to these companies, including the provision of facilities and production equipment, and manpower training.

The PSI conducts various training courses for mass-production, export oriented garment factories at the Clothing Technology Training Centre (CTTC), which consists of a 3,000m^2 site and a 200m^2 building, which are located in the North Industrial Area of Accra. The facility is the former garment factory of ATL (closed in 1997) that was purchased by the PSI including machinery and equipment. Gold Coast Collection Ltd.[4] is located in the same premises to operate a model production unit that carries out large-scale production (with the capacity to employ 450 workers). PSI plans to establish similar training facilities in Kumasi and Takoradi.

In Tema, the Free Zone Garment Village has been established by the government. A few foreign joint ventures such as California Link are operating in this village.

Market development support includes the search of buyers in the U.S. and Europe and the support for participation by PSI-supported companies in trade fairs.

(2) Palm oil

The neighboring countries have a large potential markets for palm oil, which is considered to be the PSI's target. The goal is set to increase a production area of industrial oil palm to 100,000 ha. in the short run (2 - 5 years) and 300,000 ha. in the long run (5 - 10 years). The following strategies are set to achieve the goal: 1) to expand the existing plantations; 2) to develop new plantations; 3) to form organizations of small farms cultivating oil palm; 4) to form an association for oil palm farmers; and 5) to conduct research and development on the better nurturing of seedlings, control of agricultural chemicals, development of oleo products and use of biomass. So far, the following results have been produced.

[4] As of November 2006, the factory has stopped operation.

- 21 nurseries have been added to 12 sites that already produce seedlings, thereby increasing the capacity to 3.7 million seedlings on the total land area of 240,000 hectares.
- They are participated by 296 farmers-based organizations, 230 communities, and 750 persons. 250 persons are employed for the nurturing of seedlings and 5,265 at plantations.
- Land is provided to nurture seedlings under the "Abusa system[5]", with a total land area of 300,000 hectares.
- Preparation for attracting investment by the private sector was completed by the end of 2005. Ghanaians residing outside the county have already invested 110 billion cedis in six companies.
- Goldfields and other mining companies extend cooperation to oil palm development.

(3) Cassava starch

The purpose of this program is to develop the cassava starch industry into an export industry in order to increase employment and reduce poverty in rural areas. The actual steps to be taken are 1) increase value added by making cassava starch, 2) source external markets for cassava starch, 3) improve access to funding for firms, 4) provide infrastructure such as access roads, and 5) enhance production capacity and productivity. Under the PSI's cassava starch project, a pilot company called Ayensu Starch Company (ASCO) has already been established and has the production capacity to process 3.6 million tons of cassava daily. The company is positioned to enable Ghana to establish itself as a major cassava starch producing country and has already produced the following results.

- The company has received orders from Nestle and other international companies (Dera of Czech Republic, Unilever, and ELSA Foods in Ghana), totaling 10,000 tons. This requires 60,000 tons of raw cassava (equivalent to 7,500 hectares) and represents nearly one half of the company's production capacity.
- The Ministry of Food and Agriculture (MOFA) has made loan and technical service available to small- and medium scale farms producing cassava.
- CSIR and KNUST are developing cassava that yields a larger amount of starch.

[5] In this system, independent farm contractors may offer to do all the farm work for the owner, and share the proceeds from the harvest with him, on the basis of two-thirds for the owner and one-third for the contractor.

- Three cassava starch manufacturers will be established in Atebubu, Amatin and Ejura, with the total production capacity of 20,000 tons per year.

(4) Salt

Ghana's potential for commercial production of salt is estimated at 2.5 – 3.0 million M/T per annum. However current production level is around 150,000 M/T per year. Obsolete technologies, lack of capital, weak production infrastructure, poor production methods and technical know-how have been identified as some of the major constraints faced by the industry. The PSI on salt is to systematically address the constraints identified and transform the industry into an internationally competitive one with an enhanced capacity for the production of salt, particularly, for the export market.

To achieve this, a three-tier production platform has been adopted within a larger implementation scheme as follows:

- Under this scheme the PSI will facilitate the establishment of companies with annual production capacities ranging between 250,000 and 450,000 M/T. These companies will serve as the main driving force to the development of the industry in Ghana. Three projects in this category have already been identified.
- Thirty companies in this category with the production capacity of 50,000 M/T – 100,000 M/T will be established based on the Corporate Village Enterprise (COVE) model.
- The main support to the third-tier, community-based artisanal production units is the identification and application of the state-of-the-art technology.

The activities listed below have been undertaken as part of the implementation plan for the program. These include the following:

- Six target production zones have been identified in all the four coastal regions of Ghana.
- Fifteen existing production units including small and medium scale companies and cooperative salt winners have been registered.
- Ten new companies (medium and small-scale) have been licensed and commenced construction work
- Four large scale investors were identified and negotiations were also made with local joint venture partners

- The Ghana Standards Board was tasked to establish national quality standards for salts in Ghana;
- The initial credits were provided through financial institutions for selected producers.

3.2.2 District Industrialization Programme (DIP)

While the PSI focuses on export promotion, DIP (formerly Rural Enterprises Development Programme (REDP)) has the aim of supporting local entrepreneurs in their efforts to develop the local and national markets, with the long-term goal of seeking export opportunities. The primary goal is to increase employment in rural areas by means of industrial development, thereby reduce inequality in income levels with urban areas. For this reason, the program targets SMEs, rather than microenterprises. Also, it targets companies engaged in the processing of agricultural products as well as labor-intensive industries. Another feature of the program is that it is jointly implemented by the private sector, raw materials producers and the government (MOTI/PSD/PSI and District Assembly; DA). Thus, it is positioned as a community-based public and private joint project.

(1) Outline of the program

1) Each district promotes economic development in local communities and selects three district-based business projects that comply with the district's own economic development plan.
2) The DA provides funds for the selected projects in order to allow the formulation of business plans. 50% of the funds are contributed by the District Assembly Common Fund (DACF) and the remaining 50% by the MOTI/PSD/PSI. (Feasibility study is mostly conducted by a private consulting firm.)
3) A limited company is established jointly by local communities (farmers) that contribute 20% of the capital, the DA 20%, and private companies 60%. The contribution by farmers is expected to be made through the Corporate Village Enterprise Scheme, while the DA can invest in the form of land or infrastructure development.
4) Finally, the MOTI/PSD/PSI is authorized to approve all DIP projects. By signing a memorandum of understanding, the MOTI/PSD/PSI is obliged to provide companies with support in the areas of management and technology, while making at least three-year loans available. It must conduct periodical monitoring of the progress of each project and report the result to the Technical Support Group under the Deputy Minister.
5) While the DA is an investor, the limited company is managed by the private sector.

For farmers and community-based organizations that implement the DIP program, the MOTI/PSD/PSI is required to provide the following support:

- Capacity building
- Support for improvement in production
- Technical and financial support
- Provision of access to microfinance and other financial schemes
- Provision of technical advisory service for equipment purchase and maintenance
- Market access support
- Support for the establishment of community organization's office

(2) Individual DIP Project

Many district industrial projects are related to the process of agricultural products, including cassava and citrus fruits (See Table 3.2-1). They vary greatly in size as measured by the amount of investment, ranging between $180,000 and $4.5 million. Each project is expected to hire 15 - 135 workers. As they use local agricultural products as raw material, they will likely produce significant benefits for local residents. However, their success seems to be difficult due to the lack of consideration to the size of demand, management capability to produce and sell products of uniform quality in specific quantities, and attractive project design to investors. As of November 2007, these projects have started commercial operations in the past. Two of them have stopped their operations at this moment.

(3) Problems

The program has several structural problems. First of all, each project is conceived by focusing on the availability of raw materials, rather than the actual demand in the market. As a result, it faces a large business risk. Secondly, as most districts produce more or less the same raw materials, they tend to propose look-alike projects. Development of more than two projects that use the same materials (available in different regions) to make similar products will likely cause undue competition in the raw material and product markets.

The project is designed to allow local companies to use the private sector's financial and other resources effectively by using public funds as an initial input. In reality, however, the amount of fund available to the project varies greatly among the DAs. In addition, the DA's investment decision on project financing is often based on political consideration and prevents

the smooth supply of fund. Besides, material producers (ordinary farmers) do not have their own funds and cannot borrow from financial institutions due to poor creditworthiness. Alternatively, they can borrow only short-term loans, which are not suitable for long-term projects. On the other hand, the role of the private sector is not clearly defined or it is over expected to perform. Finally, project-related information is not provided sufficiently to create a large risk for private investors.

Table 3.2-1 District Industrialization Programme Readiness Sheet

PROJECT	ANCHOR DISTRICT	PARTICIPATING DISTRICTS	TOTAL INVESTMENT COST (US$)	EMPLOYMENT	
				DIRECT	INDIRECT
BAMBOO PROCESSING*	ATIWA AMANSIE WEST	ATIWA AMANSIE WEST	$500,000/¢4.6 billion $500,000/¢4.6 billion	22	400
CASSAVA PROCESSING INTO CHIPS & PELLETS	ASANTE AKYEM SOUTH	ASANTE AKYEM NORTH EJISU JUABENG	$1,614,352/¢14.8 billion	135	500
CASSAVA PROCESSING INTO CHIPS & PELLETS	NKWANTA	KAJEBI, HOHOE, HO.	$1,348,374/¢12.4 billion	135	500
CASSAVA PROCESSING INTO CHIPS & PELLETS	SEKYERE EAST	AFIGYA SEKYERE SEKYERE WEST	$1.5 MILLION/¢14.2 billion	90	2000
MAIZE PROCESSING INTO FLOUR & GRITS	EJURA SEKYEREDUMASE	NKORANZA	$223,512/¢2.1 billion	19	350
MAIZE PROCESSING INTO FLOUR & GRITS	SEKYERE WEST	EJURA SEKYEREDUMASE TECHIMAN	$181,432/¢1.67 billion	24	500
CITRUS PROCESSING INTO SINGLE STRENGTH JUICE	BIRIM SOUTH	KWAEBIBREM WEST AKIM BIRIM NORTH	$771,147/¢6.9 billion	48	4500
CITRUS PROCESSING INTO SINGLE STRENGH JUICE AND CONCENTRATES*	MFANTSIMAN (N & C FOODS/COASTAL GROOVES)	ABURA ASEBU KWAMANKESE	$3,051,000/¢28.06 billion	65	2500
MANGO PACKING PROCESSING FOR EXPORT	YILO KROBO	MANYA KROBO	$4,457,700/¢41.0 billion	25	1500
GINGER PROCESSING INTO POWDER AND OIL	ATWIMA NWABIAGYA	ATWIMA MPONUA BOSUMTWI-ATWIMA-KWANWOMA JASIKAN	$285,879/¢2.63 billion	20	4000
CITRONELLA PROCESSING INTO OIL*	AMANSIE WEST	ASANTE AKYEM SOUTH (ADONFE)	$100,000/¢920 billion	15	200
COCOA PROCESSING INTO BUTTER & SOAP	UPPER DENKYIRA	SEFWI WIAWSO	$1,400,000/¢12.88 billion	85	2000
TOMATOE PROCESSING	ASANTE AKYEM NORTH	ASANTE AKYEM SOUTH	US765,000	17	1500
CASSAVA	TAKYIMAN MA	NKORANZA, ATEBUBU	$1.5 MILLION/14.2 billion	90	2000
CASSAVA	BREKUM	SUNYANI, DORMAA	$1.5 MILLION/14.2 billion	90	2000

Note *: Project started commercial operations、as of January 2007

Source: MOTI/PSD/PSI

3.2.3 Micro Small and Medium Enterprises (MSME) Project

MSME Project is the Government of Ghana Initiative to provide essential financing and technical support to enhance MSME development. The project which was financed by the World Bank Group has a budget of approximately 119 million US$. The project started in May 2007 and will continue until the end of 2011. The secretariat is located in the premises of MOTI/PSD/PSI.

(1) Project components

The project consists of the following four components:

- Access to finance
- Access to markets, trade facilitation and entrepreneurship development
- Business environment
- Implementation, monitoring and evaluation

Within these components, activities related to the local industry development are listed as follows:

Access to Finance Component

i) Partial credit guarantee program (50% of default loss)
ii) Line of credit facility
iii) Technical assistance to banks
iv) Post financing technical assistance to MSME
v) Provision of technical assistance to financial institutions for developing instruments

Access to Markets

i) Matching grants to assist MSMEs to access BDS
ii) Facilitation of linkage between MSMEs and large companies
iii) Web-based national product gallery
iv) Promotion of subcontracting

Entrepreneurship development

i) Establishment of ICT Park
ii) Furniture city
iii) Clothing Technology and Training Centre
iv) Common service centers (Public-Private Partnership)

The activities for business environment will support the implementation of the PSDS.

Some of the above mentioned projects are designed to follow the direction of TSSP. It just started and the detail was still in the process of formulation as of October 2007. According to the project concept paper, most of the programs will share costs partially with beneficiaries. For instance, a beneficiary shall take 10% of the cost of the common facilities and 50% of that of the training. The actual technical assistance will be implemented through existing institutions such as BACs and GRATIS.

3.3 Government and Other Organizations for Local Industry Promotion

The main ministry for local industry development is MOTI/PSD/PSI and the main implementation body is NBSSI. Business Advisory Centres, local bases for NBSSI, are assisting local industries at the district level. Various governmental organizations are implementing activities related to local industry development under GPRS II. In this section, key organizations related to the study are described as follows:

3.3.1 Ministry of Trade, Industry, Private Sector Development and President's Special Initiatives (MOTI/PSD/PSI)

(1) Mission and policy goals

MOTI/PSD/PSI is responsible for formulation, implementation and supervision of Ghana's domestic and foreign trade promotion policies. Its mission is to support the private sector through the following activities, thereby contributing to the sector's high growth and reduction of poverty in the country:

- Promotion of development of individual companies including SMEs
- Promotion of standardization relating to trade and industry
- Promotion of domestic and external trade with consideration to diversification and value added

And MOTI/PSD/PSI sets the following policy goals:

- To promote policy formulation and coordination to ensure the strengthening of inter-sectoral collaborative relationships in connection with the implementation of industrial and trade policies.
- To encourage the development of management skills as well as capabilities to use production technology effectively.
- To promote market development.
- To establish a formal system to provide effective institutional support for the purpose of improving productivity at district level.
- To promote the development of production infrastructure and increase exports of non-traditional products.
- To provide stakeholders with industry and trade related information.

(2) MOTI/PSD/PSI's budget

MOTI/PSD/PSI's operating budget for FY2007 (January through December) is summarized as follows.

(Unit: 1 million old Cedis)

	GOG			Internally Generated Funds			FUNDS	DONOR	G.Total
	P.E	G.E.	Total	P.E	G.E.	Total	HIPC		312,734
Ministry of Trade, Industry, PSD and PSI	40,830	84,640	125,470	9,980	16,344	26,324	138,000	468,724	758,518
(former) MOTI	38,819	63,040	101,859	9,980	16,344	26,324	138,000	420,600	686,782
Administration / Division	1,249	34,127	35,376	3,253	4,120	7,373	138,000	63,239	243,988
Foreign Trade Missions	6,076	5,555	11,631		250	250			11,881
Regional Trade Office	350	1,200	1,550						1,550
Gateway Secretariat		3,258	3,258					357,361	360,619
Agents	31,144	18,900	50,044	6,727	11,974	18,701			68,746
GSB	15,537	5,000	20,537	6,727	11,143	17,870			38,408
NBSSI	5,747	7,000	12,747		831	831			13,578
GEPC	5,956	4,100	10,056						10,056
GRATIS	3,904	2,800	6,704						6,704
(former) PSD/PSI	2,011	21,600	23,611					48,124	71,736
PSD G.E.	950	1,300	2,250					48,124	50,374
PSI	1,061	20,300	21,361						21,361

P.E. Personal Expenditure G.E. General Expenditure
Source: Elaborated by the team based on data of MOTI/PSD/PSI

Table 3.3-1 MOTI/PSD/PSI's Budget

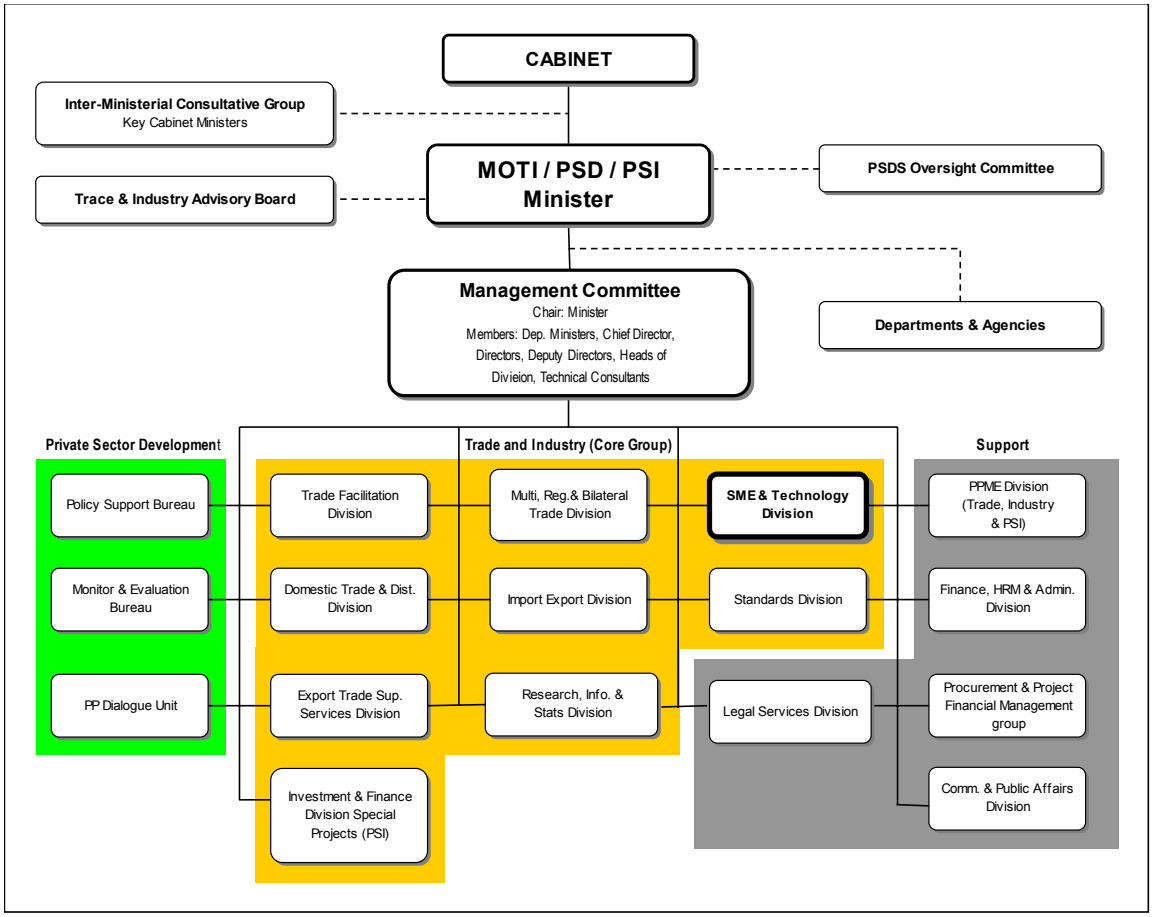
The total budget allocated to MOTI/PSD/PSI (758.5 billion cedis, equivalent to US$ 82 million) accounts for approximately 2.3% of the entire government budget (32,563.1 billion cedis, US$3.5 million). The largest item in the FY2007 government budget was education, which was 9,436.7 billion cedis (approx. US$1 billion) and accounting for 29%.

As for financial sources, MOTI/PSD/PSI relies heavily on HIPC funds (certified by the World Bank as Heavily Indebted Poor Country, with repayment being diverted to the general budget) and financial assistance from donor organizations, which account for a staggering 80% of the total budget to make a sharp contrast to 32% in the government budget. Clearly, they are indispensable for the country that aims to raise the level of industrialization as an important part of its national development.

(3) MOTI/PSD/PSI's organization

At present, MOTI/PSD/PSI operates most programs according to TSSP. Upon the formulation of TSSP, MOTI/PSD/PSI has launched organizational reforms, including the formation of strategic work units (generally referred to as project teams) that are responsible for implementation of projects in each of the ten respective fields designated according to the major themes of national trade policy/TSSP. As shown in the organizational chart below, the new organization is centered on the core project teams that cover the following nine

areas: 1) research, information and statistics (RIS); 2) multilateral, regional, and bilateral trade; 3) trade facilitation; 4) exports and imports; 5) export trade support service; 6) standards; 7) domestic trade and distribution; 8) SME and technology; 9) and investment and finance. They are supported inter-departmentally by three teams specialized in the following three areas: i) finance and HR management; ii) legal system; and iii) Policy, Planning, Management and Evaluation (PPME). Departments & Agencies in the below figure include National Board for Small Scale Industries, GRATIS foundation, Ghana Standard Board and Ghana Export Promotion Council.



Source: Elaborated by the team based on interview with MOTI/PSD/PSI

Figure 3.3-1 Organization of MOTI/PSD/PSI

The current staffing breakdown by division/unit (professional officers, not including general workers such as drivers and janitors) is shown below.

Table 3.3-2 MOTI/PSD/PSI Staffs

	Division / Unit	No. of Staff
1	Multilateral	5
2	Import- Export	3
3	Trade Facilitation	4
4	SME & Technology	10
5	Investment & Finance	4
6	Export Trade Support Service	4
7	Standards	4
8	Domestic Trade and Distribution	3
9	Legal	2
10	Research, Info. & Statistics	8
11	PPME	4
12	Finance, HRM & Admin.	5
13	Communication and Public	1
Total		57

Source: MOTI/PSD/PSI

In addition to the above staffs, fourteen staff members are assigned to regions and four to overseas offices. As shown in the above table, SME & Technology Division has the largest number of personnel (10) to reflect the government's priority to SME promotion.

(4) SME & Technology Division

This division corresponds to TSSP's category "Strengthening of Production Capability" and is responsible for "SME Support" project and "Education-Industry Linkage."

The primary purpose of "SME Support" project is to promote the development and growth of SMEs through financial and non-financial support measures, with the view of improving competitiveness of SMEs." In particular, it sets forth the following outputs to be achieved in the next five years.

- NBSSI Reorganized and Strengthened to Deliver World Class SME Support Services
- Business Support Institutions in Ghana Delivering Effective SME Training Courses
- Specialized Technology Centres and Business Incubators are Established

- Retooling of SMEs
- Productive Enterprises in Rural Areas are Established
- Crafts Initiative Operation
- Outsourcing Opportunities for SMEs Increased
- Formation and Development of Business Associations Encouraged
- Technology Innovation and Capital Goods Manufacture Initiative Operational

While the project plan has various problems such as duplications among its outputs and a lack of concrete implementation plan, it has clear intentions of promoting the development of SMEs, particularly in rural areas, through the reinforcement of BDS service activities.

The project has so far made some progresses, such as the development of NBSSI's restructuring (strengthening) plan, the establishment of NBSSI-led SME training center, business incubator, and professional technology center, and the creation of a "handicraft village" and a "furniture village."

On the other hand, the primary purpose of "Education-Industry Linkage" project is to upgrade technical education and training to meet, the present and future needs of strategic industry sectors. In particular, it sets forth the following outputs to be achieved in the next five years.

- Future Skills identification Advisory Group Operation
- Curricula of Tertiary Institutions Aligned to the Needs of Industry
- Specialized Training Courses Established for Targeted Sectors
- Effective Attachment Programs for Undergraduates in Industrial Operations
- Effective Linkages between Tertiary or R&D Institutions and Industry Established
- Provision of Career Guidance Counseling Services

However, no concrete action was taken for this purpose, except some dialogues with the industries. (As of October 2007)

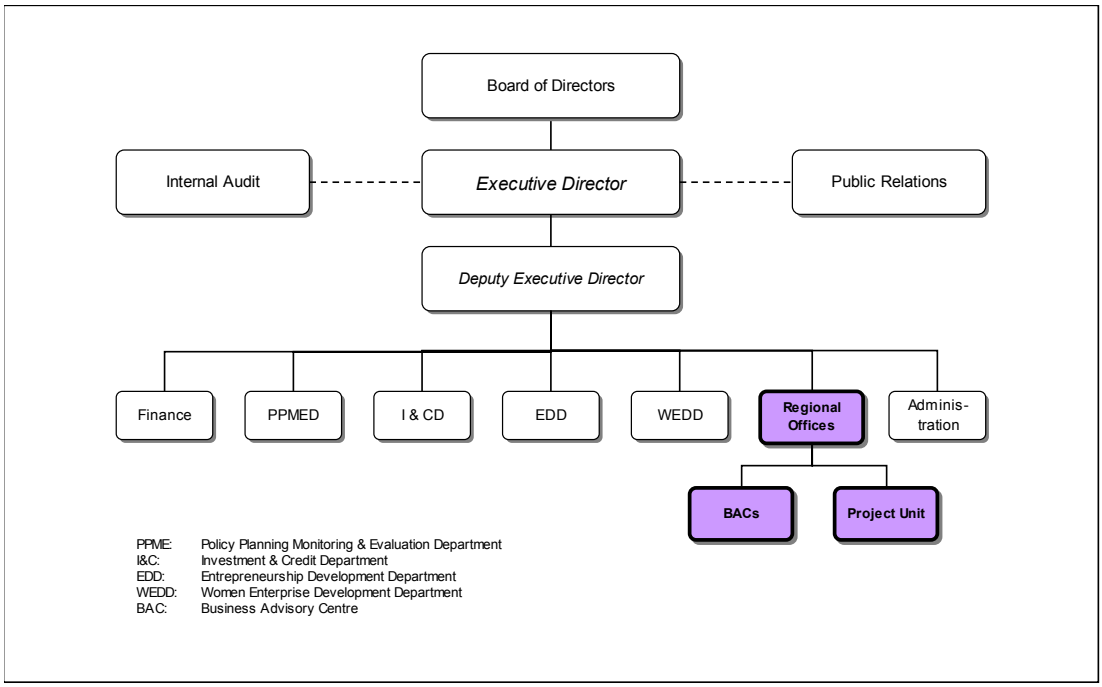
3.3.2 National Board for Small Scale Industries (NBSSI)

(1) Organization of NBSSI

NBSSI started its activities in 1985 (established in 1981) as the agency under the MOTI/PSD/PSI, responsible for the implementation of policies and programs covering micro

enterprises and small enterprises. Since its establishment, NBSSI has been receiving assistance from the USAID, the GTZ, and the International Fund for Agricultural Development (IFAD).

It has 368 employees (as of February 2006) and its head office is located in Accra, with ten regional offices throughout the country. Its organizational chart is shown below.



Source: NBSSI

Figure 3.3-2 Organization of NBSSI

The NBSSI is supervised by the Board of Directors and is managed by the Executive Director, who controls and directs NBSSI's entire business operations. The Board of Directors consists of eight members, namely the Executive Director, a representative of the MOTI/PSD/PSI, a member of the Parliament, and representatives of the private sector including commercial banks, private enterprises, as well as a lawyer.

The Executive Director is assisted by an internal auditor and directors in charge of public relations, finance and administration (1-2 staff members work for each director).

Under the general direction of the Executive Director, the Deputy Executive Director supervises the following divisions that function as operation units: (a) Entrepreneurial

Development; (b) Investment & Credit; (c) Policy Planning Monitoring Evaluation; (d) Women Entrepreneurship Development; and (e) Regional Offices.

Among these divisions, the Entrepreneurship Development Division is deeply involved in BDS for MEs and SMEs. On the other hand, the Women Entrepreneurship Development Division positions women as a vulnerable group and focuses on the provision of BDS and other SME development programs for women entrepreneurs as a special target group in collaboration with the other departments.

The regional office in the ten regions, under the Regional Manager, conducts its business through the regional secretariat that consists of a project officer, an account clerk, a secretary, a driver, and a cleaner. In addition, major districts have Business Advice Centres (BAC), which role will be discussed later. The project officer, in cooperation with BAC staff, carries out BDS for MEs and SMEs and reviews applications for NBSSI's direct loans. The Regional Offices and BACs are directly involved with the local industry development.

(2) Staff composition

As seen in the yearly changes in the number of NBSSI's employees in the recent five years (Table 3.3-3), the total number of employees in 2005 increased by nearly 25% over 2001. Note that all additional employees were assigned to district offices. Meanwhile, the number of BACs increased from 51 in 2002 to 89 in 2005. As additional BACs were to be established by the end of 2007, the total number reached 110 as of September 2007 and doubled that of 2002. As there are 138 districts throughout the country, the percentage of districts served by BACs will reach around 80%.

Between 2001 and 2005, NBSSI employed 180 persons in total. Approximately 40% of its total workforce was employed within the recent five years. Of the 180 new employees, senior staff totals 148. This means that most of the senior staff (141 as of 2005) were hired within the recent five years.

Table 3.3-3 Recent Changes in Composition of Staff

(as of each year-end expect for 2005)

	2001	2002	2003	2004	2005
Total staff	231	245	268	285	368
Head office staff	61	56	55	56	56
Regional office staff	170	189	213	229	312
(No. of Regional offices)	10	10	10	10	10
(Number of BACs)	(N.A.)	51	66	83	89
Male	(N.A.)	169	181	186	(N.A.)
Female	(N.A.)	76	87	99	(N.A.)
Senior staff	(N.A.)	(N.A.)	(N.A.)	136	(N.A.)
Juniro staff	(N.A.)	(N.A.)	(N.A.)	149	(N.A.)
Recruits	16	45	54	36	(N.A.)
Senior staff	6	41	42	33	(N.A.)
Junior staff	10	4	12	3	(N.A.)
Retirements	12	16	20	15	(N.A.)
Senior staff	6	14	(N.A.)	13	(N.A.)
Junior staff	6	2	(N.A.)	2	(N.A.)
Promotions	(N.A.)	26	17	37	(N.A.)
Senior staff	(N.A.)	13	8	14	(N.A.)
Junior staff	(N.A.)	13	9	23	(N.A.)
Training	11	14	28	91*	(N.A.)
Foreign	5	6	10	5	(N.A.)
Domestic	6	8	18	11	(N.A.)

Source: NBSSI Annual Reports

* Including trainings for newly recruited staff.

(3) Operating budget

NBSSI's budgetary sources and breakdown of expenditures are summarized in Table 3.3-4. As there is a substantial difference between the budgetary allocation approved at the beginning of each year and the total release executed and disbursed, the budgetary trend is analyzed on the basis of the total release.

The budgetary allocation consists of government expenditure and donor contributions. In 2005, government's expenditure increased appreciably in 2002, but donor contributions declined. The result was that budgetary allocation remained more or less unchanged. In consideration of the high inflation rate during the period (over 30%), the budgetary allocation in real term decreased substantially. As a result, project costs in the actual disbursement in 2005 (relating to NBSSI's basic service, such as training programs for MEs and SMEs) decreased by one third. Although NBSSI collects some fees from companies participating in the training program or trade fair, the revenue represents a minimal 5% of the entire project cost.

Table 3.3-4 Budgetary Allocation and Releases

(Unit: one million Cedi)

	2001	2002	2003	2004
Budgetary Allocation	9,319	8,763	(N.A.)	12,930
GOG	4,222	5,247		11,036
Development Partners	5,097	3,516		1,894
Total Releases	5,933	8,678	(N.A.)	8,751
GOG	3,857	5,162		8,391
Development Partners	2,076	3,516		360
Items (Total)	5,933	8,678	(N.A.)	8,751
- Personnel	1,902	3,126		4,693
- Administration Expenses	480	622		1,007
(Travel and transport)	(N.A.)	(N.A.)		403
- Service Expenses	3,474	4,594		1,424
(Training of SMEs)	(N.A.)	(N.A.)		987
- Investment Expenses	77	336		1,627
(No. of vehicles owned)	(N.A.)	39	40	47
(No. of motorbikes owned)	(N.A.)	8	8	10
Service Income *	46	30	(N.A.)	72

Source: NBSSI Annual Reports (2001- 2004)

* Including fess for trainings and participating fairs

(4) Business Support Activities

Analysis of recent trends in Business Support projects, including training projects for MEs and SMEs (See Table 3.3-5) indicates that training projects in 2004 declined as compared to 2003 – with some exceptions - in both the number of projects and the number of participants, probably due to the budget situation.

Counseling and extension services led by BAC increased slightly in 2005 (10,578 entrepreneurs) over the previous year, but the growth rate fell below that of BACs (from 66 to 83).

Currently NBSSI is turning the direction to be BDS facilitators from BDS providers for their clients. However, NBSSI should continue serving as a BDS provider in some rural districts where only BAC is operating to assist micro and small companies.

Table 3.3-5 BDS Activities Including Training Programs

	2001	2002	2003	2004
Councelling and Extension Service	8,030	10,331	9,731	10,284
male	4,347	5,207	4,579	4,273
female	3,683	5,124	5,252	6,011
Training activities				
- total Number of Programs	103	88	248	216
Beneficiaries	2,531	2,305	5,705	4,623
(male)	1,121	n.a.	2,263	1,797
(female)	1,410	n.a.	3,437	2,826
- Start Own Business	15	12	30	26
Beneficiaries	(369)	(329)	(854)	(710)
- Management Training	47	39	97	87
Beneficiaries	(1221)	(1021)	(2345)	(1901)
- Technical Training	33	16	112	70
Beneficiaries	(662)	(353)	(2276)	(1519)
- Credit Management	7	6	0	13
Beneficiaries	(266)	(200)		(181)
- Insustrial Visits	1	1	0	11
Beneficiaries	(13)	(13)		(82)
- Marketing	0		9	9
Beneficiaries			(230)	(230)
TNA *	6	6	53	30
Beneficiaries	(205)	(205)	(1668)	(896)
Information Seminar	45	31	61	68
Beneficiaries	(1986)	(1983)	(3445)	(7505)
Group Development				
(Association)				
Beneficiaries	(310)	(93)	(454)	(504)
Industrial Fairs	47	47	137	82

Source: NBSSI Annual Report (2001-2004)
* Training Needs Analysis

(5) Direct loan

Direct loan service provided by NBSSI originally consisted of the following three schemes[6]: (a) Programme of Actions to Mitigate the Social Cost of Adjustment Loan Scheme (PAMSCAD); (b) Revolving Fund Loan Scheme (RFLS); and (c) Decentralized Business Assistance Fund (DBAF). However, DBAF was terminated in 2002 and PAMSCAD and RFLS continue to this date. Table 3.3-6 presents recent changes in the amount of loans

[6] All schemes are revolving funds.

executed and repaid between 2001 and 2004. As seen in the table, the actual amount of loan is very small.

The poor performance of the direct loan service seems to be attributable to: (a) the shortage of funds; and (b) difficulty in holding the Loan Board. First of all, no fund has been added since the start of the direct loan service in 1992. The Loan Board is composed of representatives of Ghana Commercial Bank, the Ministry of Finance, the Ministry of Local Government, the National Council of Women and Development, and NBSSI's Executive Director. It is scheduled to be held four times annually, but as NBSSI is unable to allocate sitting allowances to these members due to budget constraints, the board cannot meet regularly.

Table 3.3-6 Financial Activities

(Unit: thousand cedis, no at disbursement)

		2001	2002	2003	2004	2005	2006
Loan Disbursed Total		109,580	30,900	20,000	25,000	85,200	57,300
	(No.)	142	41	7	(N.A.)	(N.A.)	(N.A.)
	PAMSCAD	35,880	30,900	(N.A.)	22,500	12,200	12,800
	(No.)	61	41		25	15	(N.A.)
	RFLS	48,000	0	(N.A.)	2,500	53,200	44,500
	(No.)	16	0		(N.A.)	12	(N.A.)
	DBAF	25,700	-	-	-	-	-
	(No.)	65					
Loan Repayment	PAMSCAD	34,410	33,015	27,973	17,401	12,122	20,069
	RFLS	38,421	35,984	50,276	83,330	46,956	67,689
	DBAF	55,190		-	-	-	-
Delinquent	PAMSCAD	(N.A.)	(N.A.)	(N.A.)	(N.A.)	120,405	110,330
	RFLS	(N.A.)	(N.A.)	(N.A.)	(N.A.)	166,978	187,593

PAMSCAD: Programme of Actions to Mitigate the Social Cost of Adjustment Loan Scheme
RFLS: Revolving Fund Loan Scheme
DBAF: Decentralized Business Assistance Fund
Source: NBSSI

3.3.3 Business Advisory Centre (BAC)

To summarize the organization and services of the BAC in spearheading the implementation of BDS projects for SMEs, the current state of Tamale BAC is presented below;

Normally BAC consists of a head, a secretary, and a driver. In addition, it hires one national service person and one cleaner in some cases.

Major services are: (a) counseling; (b) extension service; (c) operation of training courses; and (d) follow-up activities.

(a) Counseling service covers micro enterprises that come to the BAC for consultation in the areas of financing, business startup, and registration procedures. It is said to receive around 20 visitors per month in the case of BAC Tamale.

(b) Extension service includes technical guidance for preparation of a business plan to be submitted to financial institutions. As the illiteracy rate[7] in the Region is fairly low, however, the technical guidance means that the centre prepares the business plan for loan applicants in most cases. Financial institutions realize that most business plans are prepared by the BAC and visit applicants to verify the actual state.

(c) The training courses teach management skill, including financial record keeping, customer management and market survey, and various work skills, including soap making, batik fabrication, cake making, and carpentry. Instructors include resource persons. For instance, the BAC Tamale has eight resource persons in the areas of shea butter/peanut oil processing (1), honey making (3), batik fabrication (2), business administration (1), and soap making (1). NBSSI bears 60% of the training cost (maximum). Resource persons provide extension service on a fee basis, upon the request of clients.

3.3.4 Other Ministries and Local Government

3.3.4.1 Ministry of Local Government, Rural Development and Environment (MLGRDE)

The MLGRDE supervises metropolitan/municipal/district assemblies that serve as the core element of local industry development efforts and activities. In the case of a nationwide local industry development program led by district/municipal assemblies, the MLGRDE is responsible for the formulation of related policies and programs.

[7] Literacy rate in 2004 was 53.4% according to "Preliminary Education Sector Performance Report 2006" MOESS.

(1) Major role of MLGRDE

MLGRDE has the role to promote the establishment and development of a vibrant and well-resourced decentralized system of local government for the people of Ghana to ensure good governance and balanced rural based development.

In accordance with reorganization of the government, the President in his wisdom added the Environment portfolio to the Ministry. This was against the backdrop of the fact that local governance and rural development has a strong correlation with the environment.

(2) Scope of Work of MLGRDE

1) Formulating, implementing, monitoring, evaluating and coordinating reform policies and programs to democratize governance and decentralize the machinery of government.
2) Reforming and energizing local governments to serve effectively as institutions for mobilizing and harnessing local resources for local national administration and development.
3) Facilitating the development of all human settlements through community and popular participation.
4) Facilitating the promotion of a clean and healthy environment.
5) Facilitating horticultural development.
6) Improving the demographic database for development planning and management.
7) Promoting orderly human settlement development.

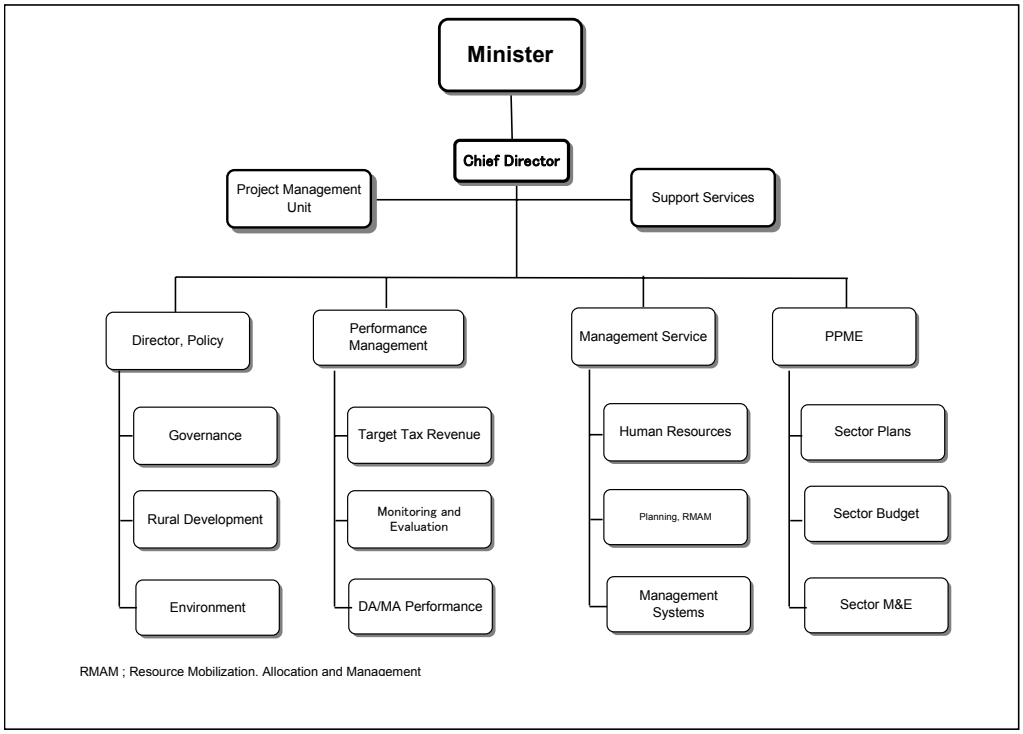
(3) Objectives

The objective of MLGRDE is to formulate appropriate policies and programs to accelerate the implementation of decentralization in the machinery of government. It includes the following items.

1) To improve upon the human resources and institutional capacities for all levels of the decentralized government machinery (District, town and Unit)
2) To improve the capacity of communities and local government institutions to mobilize, and manage resources for accelerated rural and urban development.
3) To promote community based registration, collation, analysis and publication of data on all births and deaths occurring in Ghana.
4) To promote human development and sustain the orderly and healthy growth of rural and urban settlements in Ghana.

5) To monitor and evaluate the effectiveness of local government institutions for improved management performance.

The figure below is the organization chart of the ministry. Rural development and human resources divisions are related to the study. MLGRDE accelerates the decentralization process by enforcing human resources, improving systematic capacity and monitoring local government administrations and developments. MLGRDE also coordinates projects implemented in the regions and districts.



Source: Study team

Figure 3.3-3 Organization of MLGRDE

3.3.4.2 Ministry of Food and Agriculture (MOFA)

On the other hand, the MOFA plays a critical role relating to local industry development in the following two areas: 1) it has the function to support the processing of agricultural products and provides business support relating to them; and 2) it is capable of rendering direct support for farmers by using a troop of extension officers.

(1) Mission and role of MOFA

The Ministry of Food and Agriculture is the Ministry charged with the development and growth of agriculture in the country with the exception of the cocoa, coffee and the forestry sector. The Mission of MOFA is to promote sustainable agriculture and thriving agribusiness through research and technology development, effective extension and other support services to farmers, processors and traders for improved livelihood. In line with this mission, the roles of MOFA are:

- Policy analysis and formulation
- Monitoring and evaluation of policy implementation
- Advice Cabinet on laws required to regulate agricultural activities in order to protect all stakeholders and the environment.
- Facilitation of public-private dialogue and partnerships
- Advocacy for sector interests locally and in international agreements
- Facilitation of capacity building of sector's human resources
- Facilitation of research and technology development
- Facilitation of the integration of cross-cutting issues such as gender equality into the work of the Ministry
- Facilitation of international trade in agricultural commodities
- Coordination of Development Partners' development policies and activities with the sector policies and activities.

(2) Food security

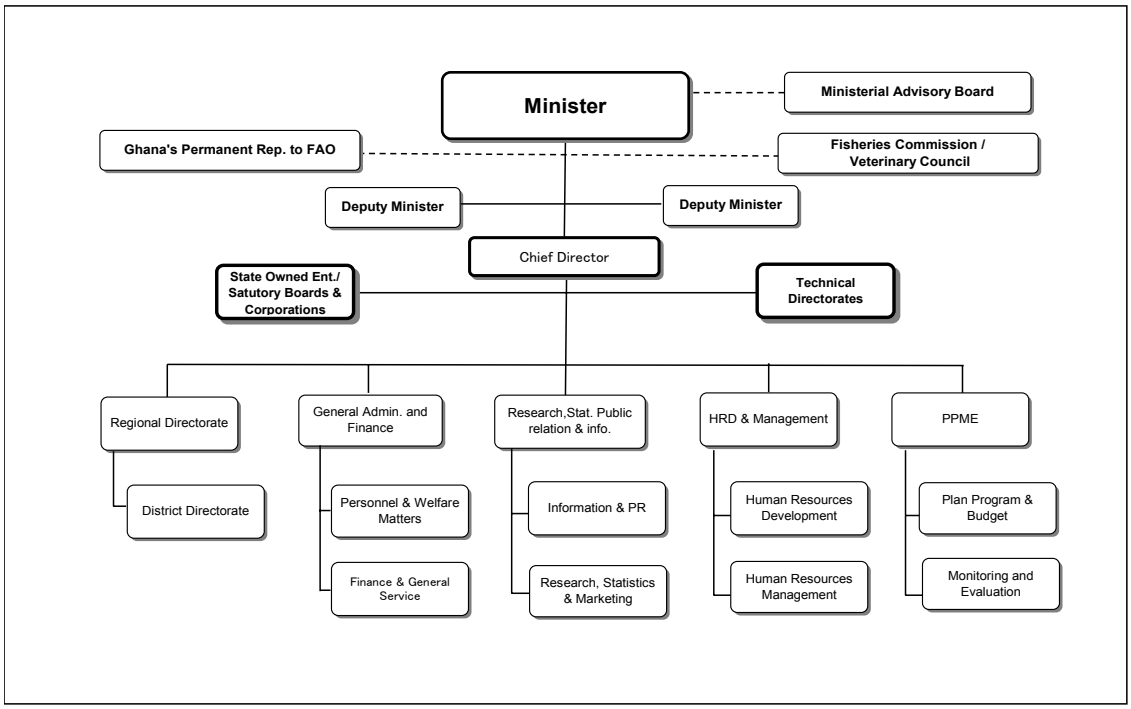
MOFA defines food security as good quality nutritious food, hygienically packaged and attractively presented, available in sufficient quantities all year round and located at the appropriate places at affordable prices. Although the objective of attaining food security is national, note that it is the poor that are most vulnerable to food insecurity. The broad strategy for the attainment of food security is to focus on the national and agro-ecological levels of development of at most four staple crops (maize, rice, yam and cassava). MOFA's support to districts will focus on at most two of the crops. Choice of crops will be based on comparative advantages, importance of the crops to people in the zone and the availability of markets. The farmers who produce these commodities will receive support to enhance productivity.

(3) Growth in income

The focus of interventions for enhancing growth in incomes in the sector is to provide opportunities for diversification into cash crops and livestock, and for value addition on all commodities. Diversification will be pursued either by introducing of new commodities, or creating opportunities for new activities to add value to primary commodities. The principle will be to maximize value at least cost. Cost recovery in delivery of services to commercial operators will be pursued. It will focus on tree crops (mango, cashew, oil palm and citrus), small ruminants (sheep and goats), poultry and vegetables on the basis of comparative and competitive advantage of agro zones and availability of markets.

(4) Organization

The organization of the ministry is described as below.



Source: MOFA

Figure 3.3-4 Organization of MOFA

The technical directorates in the above figure are composed of the following:

- Crop Services
- Agricultural Extension Services
- Plant Protection and Regulatory Services
- Agricultural Engineering Services

- Animal Production
- Veterinary Services
- Fisheries
- Women in Food and Agricultural Development

The important thing in terms of local industry development is that district directorates under the regional directorates work at the district level. There are more than 2000 agricultural extension agents (including supervisors) in the district directorates who are spending most of their time to guide farmers in the communities.

3.3.4.3 Local Government

Local governments basically consist of metropolitan/municipal/district assemblies ("DA") and Regional Coordinating Council (RCC) at the regional level. RCC is responsible for the coordination between DAs, and DAs are directly engaged in local industry development. They are expected to revitalize local industries in collaboration with NBSSI and other organizations.

(1) Assemblies and their functions

The functions of metropolitan/municipal/district assemblies relating to deliberation, legislation, and public administration are defined in Section 6(3) of PNDCL (Provisional National Defense Council Law) 207 (Local Government Law of 1988), as follows.

- Be responsible for the overall development of the District and shall ensure the preparation and submission to the PNDC[8] for approval of the development plan and budget for the district:
- Formulate programs and strategies for the effective mobilization and utilization of human, physical, financial and other resources in the districts;
- Promote and support productive activity and social development in the district and remove any obstacles to initiative and development;
- Initiate programs for the development of basic infrastructure and provide municipal works and services in the district;
- Be responsible for the development, improvement and management of human settlements and the environment in the district;

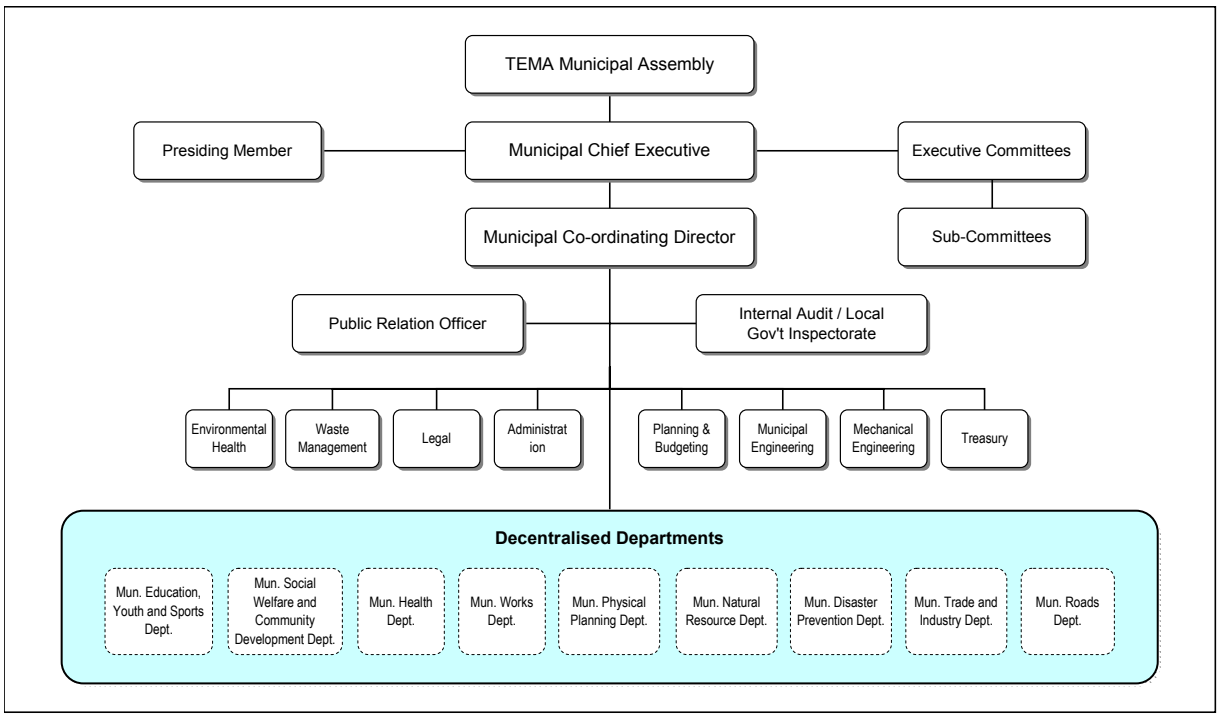
[8] The role of PNDC was replaced by National Development Planning Commission

- In co-operation with appropriate national and local security agencies, be responsible for the maintenance of security and public safety in the district;
- Ensure ready access to the courts and public tribunals in the district for the promotion of justice;
- Initiate, sponsor or carry out such studies as may be necessary for the discharge of any of the functions by this Law or any other enactment; and
- Perform such other functions as may be referred to it by the PNDC.

The district's revenue sources consist of its own tax revenues (such as registration tax) and the District Assembly Common Fund (DACF) provided by the central government. On average, the former accounts for around 30% and the latter 70%, with variations among individual districts. The budget relating to the development of the local industries is mainly funded by the DACF. Note that the DACF currently receives 5% of the total tax revenue, which will be raised to 7.5% in FY2008.

For example, the organizational chart of Tema Municipal Assembly is shown below. It is a relatively large assembly and shares the basic structure with other assemblies, except that not every district has such many decentralized departments. Also, the number of staff members in each department varies greatly among districts.

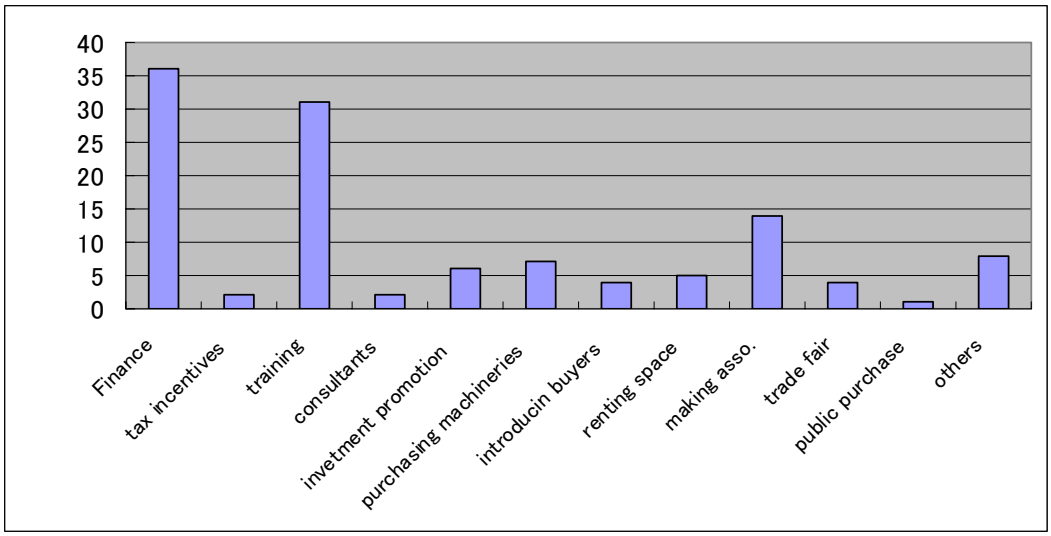
At present, there are 138 districts throughout the country. In 2008, new districts will be added to make a total of 166 districts.



Source: TEMA Municipal Assembly

Figure 3.3-5 Organization of TEMA Municipal Assembly

DA's functions include the development of local industries. Based on the information obtained from the questionnaires collected after the workshops conducted in October and November 2007, DAs provide the following business support services.

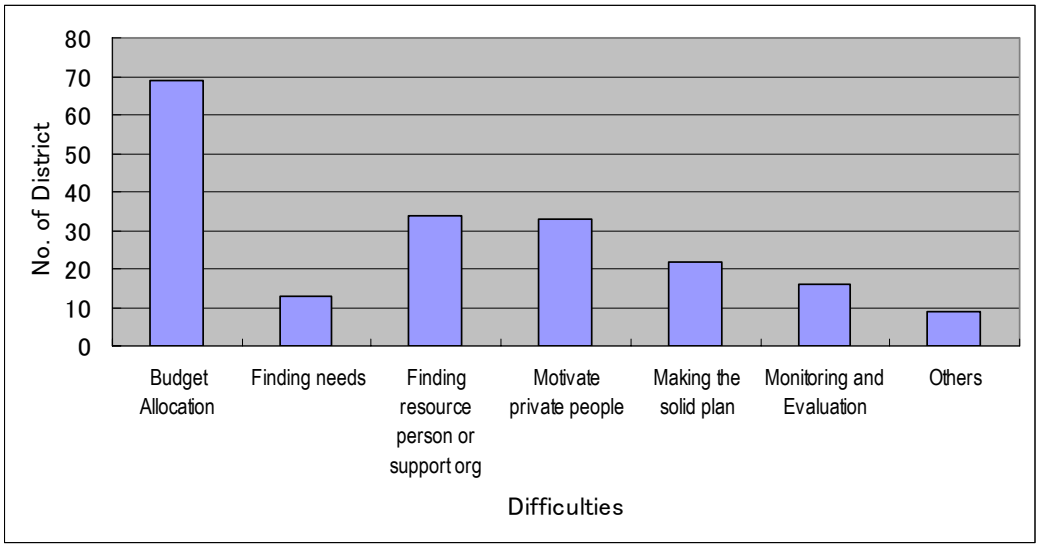


Note: 93Districts

Figure 3.3-6 Local Industry Support by Municipal / District Assembly

As shown above, DAs conduct a wide range of support activities for local enterprises. In particular, many of them provide micro credit and/or training service, whereas tax incentive, the sending of experts or the purchase by public organizations are not very popular. Of 93 DAs that responded to our survey, 25 DAs provide no support, suggesting a substantial difference in awareness of industrial support among them.

Under the survey, DAs were also asked to indicate major difficulties relating to the development of local industries.



Total District = 93

Figure 3.3-7 Difficulties in Local Industry Development by DA

Approximately 75% of the districts cited budget allocation, followed by the difficulties in finding a resource person or supporting organization and in motivating private people.

(2) Functions of Regional Coordinating Councils (RCCs)

The RCC was established in each region as a new local government organization pursuant to Section 113 of PNDC207, totaling ten councils throughout the country. The RCC is chaired by the Regional Minister and consists of the Deputy Regional Minister (appointment under authority), all district chief executives, and all members of the DA assembly. It is purely an administrative and coordinating organization, which is not involved in political decisions or policymaking.

The functions of the RCC are defined in Section 113 of PNDC207, as follows.

- co-ordinate and formulate the integrated plans and programs of the District Assemblies in the Region and harmonize these plans and programs with national development policies and priorities for approval by the [PNDC];
- monitor the implementation of programs and projects within the Region and evaluate the performance of such programs and projects;
- plan at the regional level and integrate all departmental programs in the Region;
- allocate to the Districts in the Region as appropriate public funds, under estimates approved by the [PNDC] and grants-in-aid made to the Districts in the Region;
- review and co-ordinate public services generally in the Region;
- perform such other functions that may be assigned to it by the [PNDC]

3.3.5 Business Support Organizations

There are a number of public organizations which support local industries. Among them, those relating to the manufacturing sector are presented in the table below. Subsequently, legal authority, mission and role of each organization are discussed.

Table 3.3-7 Business Support Organization

Item	Name	No. of person-nel[9]	Year of establish-ment	Relationship with local industries
3.3.5.1	GIPC	26	1994	GIPC can make important contribution to local industry development by promoting investment, which serves as a powerful tool to induce growth and expansion of local industries.
3.3.5.2	GRATIS	267	1987	As technical support organizations in Ghana are limited in number, GRATIS assumes an important position. In particular, it can make unique contribution to local industry development by using its local activity bases.
3.3.5.3	GSB	268	1973	GSP has been supporting local industries by promoting standardization and providing testing service required for quality control.
3.3.5.4	GEPC	76	1969	Local industries in Ghana include those with export potential, such as garment and shea butter. GEPC plays an important role in helping such local industries to develop export capabilities.
3.3.5.5	MDPI	69	1976	MDPI conducts a variety of training courses relating to management and technology and is expected to serve as a place for training personnel engaged in local industry development, in addition to workers and managers of local industries.
3.3.5.6	CSIR	-	1968	CSIR serves as R&D organization/BDS provider to render technical support, training and consulting services to local industries.
3.3.5.7	Association of Ghana Industry (AGI)	27	1950	AGI is not only a stakeholder in local industry development by using branch offices in each region, but is capable of serving as organization to provide business support for local industries.

[9] As of November 2007

3.3.5.1 The Ghana Investment Promotion Centre (GIPC)

(1) Year of establishment and legal authority: 1994, the Ghana Investment promotion Centre Act

(2) Total number of employees: 26, including 16 professional officers

(3) Mission and role

GIPC's mission is to attract investors, especially foreign investors. It is in charge of implementing measures to ensure liberalization of import and foreign exchange, while facilitating remittance of dividend, profit and fee to foreign countries. Also, it offers tax incentives (reduction of income tax and exemption of import duties) and investment guarantee, which are designed to help improve profitability of companies by allowing them to purchase (import) production machinery and spare parts.

To encourage manufacturers to establish production facilities in rural areas, thereby to decentralize and spread economic activities and their fruits throughout the country, 25% corporate income tax rebate is granted to manufacturers that have chosen to locate in a regional capital other than Accra and Tema, and 50% to those that are located in rural areas other than regional capitals. Furthermore, the following tax incentives are provided for businesses involving the processing of agricultural products.

Table 3.3-7 Incentive for Agro-Processing Business

Location	Rebate	Rate of Income Tax
Accra and Tema	80%	20%
Other Regional Capital (except Upper West, Upper East & Northern)	90%	10%
Outside other Regional Capitals including all of Upper East, Upper West and Northern)	100%	Nil

Source: Feasibility study on construction of citrus processing factory in Central Region

As GIPC's current staffing is too small to cover sufficient areas, it intends to increase it substantially in the near future, while expanding activities such as construction (planning) of industrial estates in rural areas. As of November 2007, it was recruiting new employees with the final goal of increasing staff to 106. GIPC hopes to deploy a sufficient number of staff members in rural areas.

In addition to the shortage of staff, GIPC lacks experience in industrial estate projects, including the design and investment promotion processes. In particular, it feels the need

to have outside support relating to the construction and operation of joint facilities as well as the method to find tenant companies.

3.3.5.2 GRATIS Foundation

(1) Year of establishment and legal authority: 1987. Originally, the Ghana Regional Appropriate Technology Industrial Service (GRATIS) Project was implemented by the Ghanaian government

(2) Total number of employees: 267, including 80 staff at the headquarters (as of April 2004)

(3) Mission and role

To develop small manufacturers in the country, GRATIS has established Intermediate Technology Transfer Units (ITTUs) in nine regions. They are now renamed to Regional Technology Transfer Centres (RTTCs) which conducts a variety of activities to transfer appropriate technologies to small manufacturers, including training, manufacture and supply of production machinery, equipment and tools.

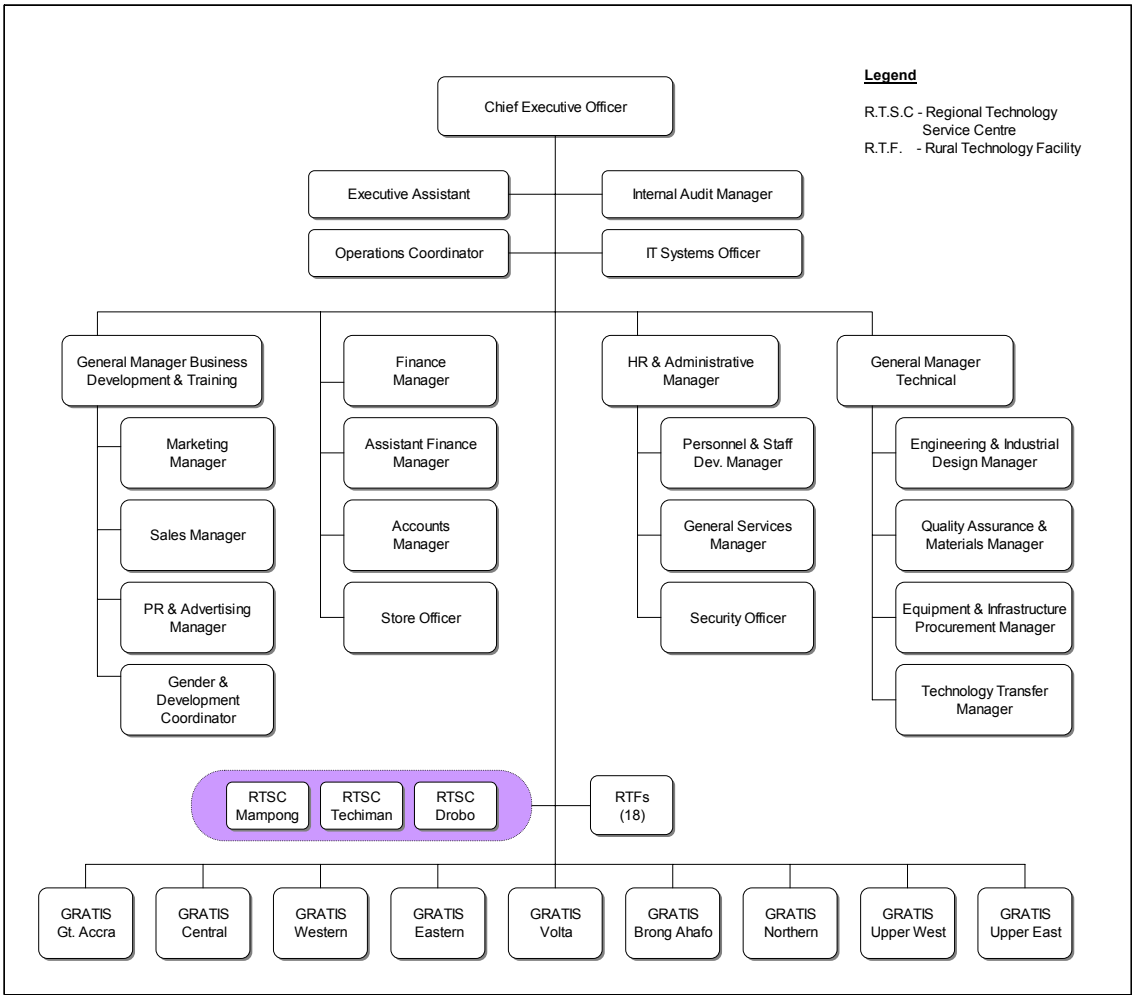
GRATIS is basically implementing two types of programs at the RTTC level, namely "engineering programs" and "non-engineering programs." The former is designed to promote the local manufacturing of machinery, equipment and tools required by farmers and small manufacturers including food processing.

On the other hand, non-engineering programs emphasize on activities that provide BDS, such as training, management consulting, and technical assistance, to farmers, agro industries, craftsmen, and other local operators. As they use machinery and equipment made by RTTCs, they need training and assistance to operate it properly and efficiently. GRATIS and BDS are playing a very important role in helping local manufacturers to operate their machines smoothly after installation. GRATIS's service generally targets purchasers of machinery and equipment, while rarely providing technical service to companies that are not necessarily customers.

The foundation's operating budget is partially funded by the central government, ranging between 20% and 40% and totaling ¢6.7 billion in FY2007. This financial assistance will be reduced in the future and the foundation is expected to become financially independent.

Production equipment made by GRATIS does not always have good quality in comparison to that made by manufacturers in the private sector. Also, some products directly compete with the private sector. GRATIS needs to improve its instructors' skills and renew equipment installed in rural regions, while capacity buildup is ensured in electrical/electronics and hydraulic fields.

The following figure is the organization chart of GRATIS. There are Regional Managers, Workshop Managers and Training Managers in each Regional Technology Transfer Centre. The functions of the centre were mentioned before but the training contents are different from each centre according to the needs of the regions. There are 18 Rural Technology Facilities (RTFs) in the country and each RTF has RTF Manager and Workshop Supervisor.



Source: GRATIS

Figure 3.3-8 Organization of GRATIS

3.3.5.3 Ghana Standard Board (GSB)

(1) Year of establishment and legal authority: 1973/The Standards Decree, 1973 NRCD173

(2) Total number of employees: 268

(3) Mission and role

To improve competitiveness of goods and services provided in the country as well as those exported to overseas, GSB is mandated to provide the following services: 1) certification relating to product standards and quality control systems; 2) consumer protection and education including the handling of consumer complaints, factory audit, and market monitoring on specific products (regardless of GSB certification); 3) inspection service on imported and exported cargoes; 4) service relating to weights and measures; 5) service storing and providing technical information, and public relations on trade regulation, technology export/import control, and reviewing procedures for compliance with standards covering exporters/importers and general consumers; 6) inspection and testing on food, medicine, cosmetics, industrial materials, construction materials, textile and garment, and other industrial products; 7) industrial training courses – standard training in the areas of product standards and quality control systems and industry-specific training; 8) development of product standards, support for organizations developing product plans that meet requirements of specific strategic markets, and support for development of domestic standards on the basis of international ones.

Most of GSB staff performs professional office functions, while general work such as janitors and drivers is outsourced.

However, GSB's activities are hindered by budgetary constraints. For instance, it is not capable of assuring traceability for testing equipment or providing reliable testing service for foreign companies due to their inability to renew the necessary equipment. Also, it fails to fulfill the role of promoting standardization. From the user's side, GSB is rather too remote to send a sample as it is located in the southwest part of the country.

3.3.5.4 Ghana Export Promotion Council (GEPC)

(1) Year of establishment and legal authority: 1969/GEPC Act (to promote exports from Ghana)

(2) Total number of employees: 76 (25 professional officers)

(3) Mission and role

GEPC is positioned as a central organization coordinating activities of all organizations, both public and private, which are involved in development and promotion of trade. Coordination supports efforts to diversify the country's export structure from traditional items such as gold, cocoa beans, lumber and wood, to non-traditional ones such as agricultural products, processed food, and handcrafts.

GEPC serves as an intermediate between the trade organizations and as many as 3,000 traders. Main activity areas are: 1) provision of technical advice service to promote product development, market development, and supply chain management; 2) provision of trade information through the operation of a reference room, publication and advertisement, and the formation of a trade information network; 3) strengthening of a training project using trade schools that offer courses on product development, market development, trade promotion for exporters and trade promotion organizations; and 4) operation of a consultative forum and a round table meeting to form consensus on coordination of export promotion programs.

3.3.5.5 Management Development and Productivity Institute (MDPI)

(1) Year of establishment and legal authority: 1976/MDPI Instrument Act of 1967 (established by the Ghanaian government)

(2) Total number of employees: 69 (16 professional officers (instructors and consultants)) as of August 2007

(3) Mission and role

MDPI was established for the following purposes: 1) improvement and development of management standards in various aspects; 2) introduction and implementation of optimum management techniques and technology; and 3) enhancement of efficient and productivity on manufacturing, commerce and other economic sectors.

MDPI offers training courses for employees of organizations, both private and public, including standard courses and customized courses that are conducted at each client (field guidance). In addition, it provides a large number of management courses relating to projects implemented by various support organizations.

Programs designed for the private sector are primarily intended for young people who have recently graduated from school or want to change their job, would-be entrepreneurs who intend to start up their own business, and owners of small enterprises. The customized courses are conducted to meet specific needs of small enterprises, which increasingly demand field guidance. MPDI provides training for around 2,000 persons annually, 30% of whom appear to come from the informal sector.

MDPI's operating budget is partially funded by revenues from training courses (around 60% of total) and the government budget (Ministry of Manpower, Youth and Employment). To increase revenues further, it needs to expand activities such as consulting service.

3.3.5.6 Council for Scientific and Industrial Research

The Council for Scientific and Industrial Research (CSIR) was established in 1968 and was reorganized in 1996 under CSIR Act 521. Its primary objective is to conduct scientific and technological research and apply results for the purpose of socioeconomic development in the fields of agriculture, industry, public health and the environment. Developed technologies are commercialized by Ghana's private sector or overseas. With regard to the local industry development, the CSIR has functions including fabrication of machineries and equipments, the provision of analytical services and technical trainings. Under the CSIR, there are 13 research institutes that are described below.

- Animal Research Institute
- Crops Research Institute
- Food Research Institute
- Oil Palm Research Institute
- Savanna Agricultural Research Institute
- Institute of Industrial Research
- Building and Road Research Institute
- Institute for Scientific and Technological Information
- Science and Technology Policy Research Institute
- Soil Research Institute
- Water Research Institute
- Plant Genetic Resources Centre
- Forestry Research Institute of Ghana

Members of the council consist of 21 members including MOTI/PSD/PSI and other various ministries, training institutions, associations and CSIR staffs. CSIR act specifies

that 40% of members should be from the private sector. Table 3.3-8 explains the outlines of research institutions related to the study.

3.3.5.7 Association of Ghana Industry (AGI)

(1) Year of establishment and legal authority: 1958 (as a non-profit, private, business organization)

(2) Total number of employees: 27 (3 consultants), serving around 1,200 member companies

(3) Mission and role

AGI was established for the following purposes: 1) to serve as the core organization in Ghana's industrial development process; 2) to conduct research and study relating to the possible establishment or repeal of laws and regulations that may affect the industry, and to express support or opposition as required; and 3) to make industry-related recommendations and submit opinions to the Ghanaian government.

To accomplish the above purposes, AGI plans and holds the following events and activities: 1) workshops on production technology; 2) seminars on financing and financial management; 3) training courses for member companies, in the fields of entrepreneurship and business management; 4) provision of business information; 5) policy advice/study group; 6) business/product intermediary programs; 7) networking events; 8) trade missions and projects to support participation in trade fairs; and 9) joint trade fairs with ECOWAS and other organizations.

AGI also conducts activities relating to technology transfer and operates a database on Ghana's industry. Finally, its DBS Division provides fee-based services (cost covering) including market study, management training business planning, and consulting.

Table 3.3-9 Selected CSIR Research Institutes

Name of Institute	Food Research Institute(FRI)	Institute of Industrial Research (IIR)	Oil Palm Research Institute (OPRI)
Purpose and Activities	The FRI is mandated to conduct applied research into problems of food processing and preservation, storage, marketing, distribution and utilization, in support of the food industry and also to advise government on its food policy. To develop and provide technical information, training and services to the private sector and other stakeholders in the food industry. To provide appropriate technology packages for processing and storage of raw agricultural produce to facilitate curtailment of post-harvest losses and promote value addition for local and export markets. To strengthen the Institute's capability and linkages with industry through human resource and infrastructural development, restructuring and re-organisation for effective commercialisation of operations.	Objectives: To improve upon and/or adapt existing technologies which will suit the local environment. To develop cost-effective intermediate technologies which meet the needs of Ghanaian industries. To promote technology transfer to enhance the efficiency and competitiveness of Ghanaian industries. To provide facilities for scientific instrumentation and the repair, maintenance and calibration of scientific, educational and medical equipment. To provide consultancy services and training to small and medium scale enterprises and institutions To provide technology transfer and promote maintenance culture to enhance the efficiency and competitiveness of Ghanaian industries for sustainable growth and development	General Objectives To improve breeding of oil palm and coconut Development of land use efficiency and intensification strategies to maximize yields and enhance yield potentials Development of integrated pest and disease management strategies Improvement of small-scale semi-mechanized methods of processing palm, kernel and coconut oils To commercialize the production of improved planting materials To commercialize research findings through consultancy and training
Establishment	1963. Legislative Instrument No. 438 of 19th March 1965		1964 as a division (Plant Breeding Oil Palm) of the Crops Research
Staff	The Institute has total staff strength of 170 with 35 research grade staff, and 51 senior staff. The Research Grade Staff are made up of 17 female and 18 male.	The staff strength of the Institute is 135 and comprises 38 research grade staff, 44 non research grade senior staff, and 53 junior staff.	Research grade staff 23, Technologist - 10, Senior Technical/Administrative - 37, Junior staff - 179, Monthly rated casuals - 191
Technical Support, Consultancy and Advisory Services Provided	1. Product quality control and improvement Food Processors 2. Identification & selection of food processingeqiupment SMEs 3. Chemical analysis of products Food Processors 4. Production & Sale of Spawn Farmers Mushroom cultivation 5. Hiring of Facilities; Fabrication of processing Equipment Food Processors 6. Training Courses - Mushroom cultivation - Food preservation Technology transfer, information publication and dissemination,Advisory & Consultancy on food processing, preservation & marketing	1. Repair & Maintenance of equipment Manufacturers 2. Installation & calibration of industrial plants Manufacturers 3. Calibration and standardization Manufacturers 4. Production & sale of school laboratorry equipment GES 5. Farication of spare parts for machines & agroprocessing machines Manufacturers 6. Construction of Biosanitation and biogas plants 7.Training Programmes Technology transfer on production and repair techniques of equipment & glassware; Information publication & dissemination, Advisory & Consultancy on renewable enegry & energy Auditing, Patent Information	1. Production & Sale of oil palm & coconut planting materials 2. Production & sale of breeding materials Research Organizations Selected crosses 3. Harvesting & sale oil Palm Fruits (Research by- products) Palm oil mills & small scale/individual/cottage processors. 4. Production & sale of Bamboo poles & Malayian knives Farmers 5. Production & sale of Pueraria seeds Estate Developers, Farmers 6. Technical advice on oil palm palntations (establishment,management & processing) 7. Consultancy services, Information publication and dissemination, Advisory for solution of industry problems on production 8. Training on oil palm & palm oil productiion techniques

Source: The Study team elaborated based on the CSIR web-sites

3.3.6 Regional Bank

(1) Role of rural and community banks

Rural and Community Banks (collectively referred to as "RCBs") are operated in a specific region under the license and supervision of the Bank of Ghana. They meet financial needs in local communities by providing both microfinance and commercial banking functions. Their main activities include the mobilization of local moneys through the acceptance of bank deposits and lending to micro enterprise owners, farmers, fishermen, and workers, as well as consumer loans covering school tuitions, the purchase and remodeling of houses, and medical costs. Moreover, RCBs take on social responsibility roles by using profits from their business, i.e., contributing resources to local services that need support and assistance such as public education, public health, and cultural events. Some RCBs carry out special programs to help raise the social status of women. Thus, RCBs play an important role in the development of agriculture-based economy by rendering financial services to local communities.

At present, there are 122 RCBs throughout the country, as shown below. Most RCBs use a network of "agents" that accept deposits and loan applications, although they are not authorized to make loan decisions. There are approximately 500 agents throughout the country. All RCBs are members of Apex Bank.

Table 3.3-10 Regional Distribution of RCBs

No.	Region	No. of bank
1	ASHANTI	22
2	CENTRAL	21
3	EASTERN	19
4	BRONG AHAFO	19
5	WESTERN	14
6	VOLTA	9
7	GREATER ACCRA	6
8	UPPER EAST	4
9	UPPER WEST	4
10	NORTHERN	4
	TOTAL	**122**

Source: Bank of Ghana

(2) Operating status of RCBs

The general operating status of all 122 RCBs, in terms of combined financial indices, is presented below. All of them, including total asset and loan, showed fairly high growth rates in 2005, albeit some slowdowns with inflation around 10% annually. As at the end of 2005, the average deposit at each RCB amounted to around ¢14 billion (US$1.5 million).

Table 3.3-11 Combined Financial Indices

Unit: billion cedis

	2003	2004	Growth	2005	Growth
Total Assets	1,275.37	1,798.28	41%	2,260.83	26%
Total Deposits	949.19	1,363.33	44%	1,688.23	24%
Total Advances	348.43	567.68	63%	775.23	37%
Total Investment	524.66	719.57	37%	830.64	15%
Net Worth	120.36	240.88	58%	320.89	33%

Source: Apex Bank Annual Report 2005

Among the indices, loans showed very high growth rate, even in 2005 when RCBs generally faced slowdown. In contrast, the growth rate of government bond purchase declined.

To reflect the strong growth of loans, the loan-deposit ratio is on the rise. As loan and saving institutions in Ghana, including RCBs, are required to reserve 9% of total deposits and allocate 35% to the purchase of government bonds, the loan-deposit ratio remained at very low levels, 36.7% for RCBs in 2003. Recently, it rose steadily to 41.6% in 2004 and 45.9% in 2005. It is expected to rise further because the mandatory rate of government bond purchase was lowered to 15% in 2006.

For instance, the key financial indices of Bosomtwe Rural Bank, based in Ashanti Region, indicate that deposits nearly doubled between the end of 2003 and October 2006, while loans approximately quadrupled and investment (including government bond purchase) increased by 50%. As a result, the bank's investment to total asset ratio declined from 61.2% in 2003 to 54.1% in 2006, whereas its loan to total asset ratio rose from 31.5% to 45.5%, respectively. During the same period, the loan to deposit ratio soared from 24.3% to 45.5%.

RCB's increasing emphasis on loan seems to be driven by an increase in the loan yield relative to the government bond yield. For instance, Bosomtwe Rural Bank intends to

increase loans to local businesses. The active promotion of commercial loans is expected to have positive impacts on revitalization of local economies and industries.

Commercial loans executed by RCBs (other than Susu Loan) are divided into business loans (serving agriculture, commerce, and industry) and consumer loans for salaried workers. The repayment period is one year at maximum and monthly repayment is required. Interest rates are set on a sectoral basis in many cases, e.g., 25% for farms, 26% for manufacturing, 30% for commerce, and 25% for consumer loans. The maximum amount of loan is ¢50 million per case and is generally secured by collateral. The loan exceeding ¢20 million requires the central bank's approval in writing. The upper limit for overdraft is ¢1 million, with an interest rate of 12.5% for three months.

(3) Incorporation of daily deposit system (SUSU)

SUSU is a traditional saving and loan system in Ghana, which has a long history. It is operated by individuals, called SUSU collectors, who visit customers on daily basis. SUSUS has been serving as a popular means of saving among local people.

SUSU collectors visit customers (depositors), such as retail shops, workshops, portable stalls, and households, to collect daily deposits which amount is determined on the basis of each customer's saving plan and as low as ¢2,000. As a large amount of deposit must be made to open an account with a commercial bank, at least ¢100,000, SUSUS collectors effectively meet the needs of small depositors.

At the end of each month, SUSUS collectors return a total amount of daily deposits collected in the month to customers, less their charge equivalent to the amount of daily deposit. No interest is paid to the daily deposit. SUSUS collectors extend loans upon the customer's request and according to the amount of loan. They live in the same community as their customers and operate as family trade over generations. They are highly trusted by customers.

At present, around 400 SUSUS collectors operate in the country and each of them has around 300 customers, totaling 1.2 million throughout the country.

RCBs are increasingly adopting the SUSUS into their business. For instance, Ga Rural Bank, which serves Greater Accra Region, uses full-time collectors to provide SUSU deposit and loan services in the following manner.

- The customer is required to deposit at least ¢500 in three consecutive months without withdrawal.
- At the end of three months, the customer can open a savings account with the bank.
- Also, the customer can borrow money from the bank, in amounting to the outstanding balance of his account, provided that he continues daily deposit and repays the loan in daily installment.
- The maximum loan period is four months.
- The customer who borrows from the bank can withdraw his saving at the time of loan execution, up to 50% of the outstanding balance of his account.
- The customer, who has made daily deposits for three consecutive months and does not want to borrow, can withdraw the whole amount from his account.
- No interest is paid to the daily deposit, while the interest rate on the loan is 20% (as of December 2006).
- The customer who has made daily deposits for six months, without withdrawal, is entitled to receive bonus from the bank.
- The collector is hired by the bank on commission basis and receives it at the end of each month according to the amount of daily deposits collected during the month.

(4) Operation of the micro credit scheme (case study)

A RCB serving Ashanti Region has launched a micro credit scheme ("Atadwe Loan Scheme" – ALT) on an experimental basis (called "action research"). ALT is based on the business concept of group lending, which is outlined below. Today, it has grown to become one of the bank's main businesses.

- Formation of the loan group: 9 - 15 persons, who operate or intend to operate micro business with working capital of ¢25,000 - ¢250,000 and who share common interest, voluntarily form a loan group.

- Eligibility: The ALT loan is extended only to members of a loan group that has been legitimately formed and has been approved by the RCB's Credit Officer and Agent Manager. The loan group becomes eligible for the loan after it has made weekly deposits of ¢75,000 each for eight consecutive weeks, and the borrowing member

maintains an account with outstanding balance between ¢10,000 and ¢250,000, which must be allocated to cover the contribution to the Risk Fund and the commitment fee, while continuing weekly deposits during the repayment of the loan.

- Loan limit: The lower limit for the ALT loan is ¢100,000, and the upper limit ¢5 million (for the first loan). For the second and later loans, the upper limit may be increased according to repayment history and capability and the deposit status.

- Loan rate: The ATM loan rate is set at lower levels than other loans provided by the RCB. In addition to the interest, the borrower is required to pay: (1) application fee of ¢2,500; (2) loan charge equivalent to 3% of the amount of loan; and (3) contribution to the Risk Fund equivalent to 1% of the amount of loan. The interest rate and the above fees are subject to change without prior notice.
- Repayment period: The ATM loan is repaid weekly and the maximum repayment period is 24 weeks (6 months).
- Collateral requirement: The ATM loan is extended to security consisting of deposits made by the loan group and its members.
- Purpose of loan: Short - and medium - term funds required for micro business operation and management

3.4 Activity Status of Donor Organizations

Activities of donors in the private sector development cover broad areas. In this section, examples of donor activities which are related to BDS providers and local industry developments are presented. Collaboration of donor organizations, although geographically limited, represents a critical position in the local industry development, particularly in the following areas: 1) financial support; 2) business support; and 3) implementation of joint projects with government support organizations. Donor organizations not only complement local industry support by the Ghanaian government but also help reinforce human resource and financial base of government support organizations. The following sections describe their activities, including type of support. The UNDP project of shea butter which utilized the result of the trial program is described at the end of this section as the continuous project.

3.4.1 Support Programme for Enterprise Empowerment and Development (SPEED)

SPEED is an NGO established jointly by GTZ and the Denmark government. It extends loans to SMEs and provides technical guidance for financial institutions and BDS providers. Also, it will soon launch loan guarantee service. It has 12 staff members.

(1) Loan scheme

The loan scheme for SMEs is a two-step loan service started in 2002. The original fund of 7.2 million euro has been paid to the central bank, based on which commercial banks and saving and loan associations (8 in 4 regions) extend loans to micro enterprises and small enterprises. The major purpose of loans is to provide business funds (including working capital) to manufacturing and service industries. The credit line per case is 30,000 US$, with the average amount of the loan being approx. 2000 US$. The interest rate is 16.4% annually (fixed) and the loan period is five years at maximum, but the actual period is one year or shorter. To this date, the scheme has extended a total of around 3.2 million euro and the outstanding amount of loan is around 1.8 million euro. The number of loans extended amounts to around 7,800 cases.

(2) Technical guidance project

The technical guidance for financial institutions was launched in late 2002. It teaches portfolio management, development of work manuals, and loan examination skills on an OJT basis, and accumulates and disseminates best practice, together with human resource

development. To this date, technical guidance has been provided to four rural banks, two commercial banks, and one saving and loan association.

(3) BDS support project

The support project for BDS providers was started in 2003. It teaches basic management knowledge and skills, including cost accounting and the development of business plans for all industry types. So far, it has given guidance to 27 providers and has trained 40 trainers. These providers have been providing service for as many as 3,000 SMEs.

According to SPEED's Web site, business consultants who have received SPEED's technical guidance service form a network of consultants in the country.

3.4.2 Trade & Investment Programme for Competitive Export Economy (TIPCEE)

This program was launched under the USAID's contribution in December 2004, with the following two missions: (a) export promotion by means of strengthening the supply chain; and (b) policy recommendation for improvement of the business environment[10]. Note that (a) and (b) are complementary to each other. The approach adopted to reinforce the supply chain is to analyze the entire supply chain, identify major bottlenecks, and solve them one by one, thereby achieving a market integration as a whole.

Items for support:

Pineapples, papayas, mangos, Asian vegetables (such as okra) and cashew nuts are selected and designated as high value crops to support the expansion of production and export. In fact, these products are already exported to the UK and other countries, totaling 7,000 tons annually or $15 million. In the future, maize, tomato, onion, and peanut will be considered as target items.

Improvement measures taken so far include: (a) standardization of quality according to the market needs; (b) the securing of traceability for exports to Europe (GPS-based tracing of registered small farms); (c) diversification of product items (okra and cultivated pineapples); and (d) development of logistics (the establishment of collection points to facilitate the linkage

[10] Mainly dispatch policy specialists/ consultants in ministries such as MOT/PSD/PSI, MOFEP and MOFA.

between farms and processing factories). As for quality standardization, companies exporting products to the U.S. or Europe receive HCCAP certification from a certification organization accredited by the EU. Also, Coca Cola enforces its proprietary certification system including the standard for pesticide use.

TIPCEE implements its programs under the partnership with other organizations. For instance, support service to farms is largely carried out through the BDS providers, companies or private consultants. It collaborates with the Ministry of Food and Agriculture.

As a result of enhancing the supply chain, reliability and safety of products has been improved to assure a better prospect for producers (farmers) and customers. As the supply chain program is implemented as a pilot project, they can be disseminated widely if their effectiveness is verified. The program will continue until November 2009 (five years in total).

3.4.3 Rural Enterprise Development Support (REDS)

The UNIDO has been implementing the REDS project in three regions outside Greater Accra Region, namely Volta, Western, and Eastern regions. It has already completed Phase 1, and in Phase 2, it will be expanded to Central Region, Northern Region, and at least one more region. Requests have been made to the Japanese government and other donor countries to make contribution to the program.

REDS's basic concept is to provide comprehensive BDS (development of entrepreneurship, application of intermediate technology, and improvement of market and financial access) mainly for processors of agricultural products with the purpose of developing micro enterprises and small enterprises (village-level cottage industries) in rural areas.

Major production and processing items selected for support in Phase 1 are gari[11], palm oil, fish, rice, and honey.

The support for micro enterprises and small enterprises is carried out by organizing a group of 25 - 30 members with the view to stimulating group dynamics through collective purchase and the securing of loans by collective guarantee.

[11] Dry-fried grated cassava, one of Ghanaian staple foods

3.4.4 Rural Enterprises Project Phase II (REP Ⅱ)

The first phase of the Rural Enterprises Project was operated in 13 districts and ended in December 2002. Based on the positive performance and outcomes of the project, the Government of Ghana, in collaboration with the International Fund for Agricultural Development (IFAD) and the African Development Bank (AfDB) extended the REP to cover about 53 new districts from the year 2003. REP II directly contributes to GPRS which places particular emphasis on the development of storage, transport and processing capacity or rural produce. At the beginning stage, REP II was implemented through the Ministry of Environment and Science at that time. Currently it operates under the MOTI/PSD/PSI.

(1) Objective

The overall objective of the REP II is to reduce poverty and improve living conditions in the rural areas and especially increase the incomes of women and vulnerable groups through increased self-employment. The immediate objective is to promote a competitive rural micro and small enterprise which is supported by good quality, easily accessible and sustainable services. The qualitative goal is to create 110,000 new jobs while strengthening a total of 60,000 MSE.

(2) Project contents

REP II consists of the following contents:

- Business development services involving mainly technical and management training through BACs
- Technology promotion and support to apprenticeship training through RTFs
- Financial services provided through mostly rural banks
- Policy dialogue on rural micro and small enterprise development involving stakeholders including donor agencies, public and private sector institutions and agencies

(3) Budget

The total budget is about 30 million US$. The IFAD contributes 11 million US$, AfDB 10 million US$ while the Government of Ghana adds the remaining 8 million US$.

3.4.5 Promoting the Shea Butter Sales and Strengthening the Local Shea Butter Industry in Northern Ghana

UNDP started the project to assist local shea butter industries in Sagnarigu and Walewale communities in the Northern Region. The duration of the project is 2 years. The outline of the project is described as follows;

(1) Aim

This project aims at increasing the sales of locally produced shea butter in Ghana and consequently reinforcing the feasibility of local shea butter businesses.

(2) Strategy

The main strategy is converging experts from UNDP, JICA and other partners through a dynamic partnership development in order to comprehensively embrace the identified areas of support and crystallize the synergy effect in pursuit of project goal.

The following components form the strategic framework of this project.

1) Integrating outputs of JICA's research on shea butter

- As a main project partner, JICA contributes outputs as well as research results of the trial program for shea butter in "the Study on Promotion and Development of Local Industries in the Republic of Ghana" into this intervention and help identify the demanded quality that would meet the required standard.

2) Utilizing the strengths of other development players as Japan's initiatives: AFRASIA Business Council and Africa 2000 Network

- The other strategic feature is integrating AFRASIA Business Council (hereafter AFRASIA) into this project to create an extensive marketing strategy and to penetrate markets in Asian and other African countries.
- In addition, as an implementing partner, Africa 2000 Network (hereafter A2N) plays a principal role in disseminating knowledge among local women producer groups for improving shea butter quality and equipping indigenous producers with basic business skills.

(3) Activities

1) Identifying marketable shea butter quality and setting up the environment to meet the required standard
2) Exploring domestic and export market of shea butter for sales promotion
3) Providing basic business management skills for local women producers
4) Transmitting skills and knowledge in shea butter production among local processors

JICA outcomes are mainly used in the training of skills for activity four above. It is a three staged-training on at two centres (Sagnarigu and Walewale).

Stage 1: For first set of trainees (future trainers) trained during the JICA trial program
Stage 2: For 15 best trainees selected from the first set of trainees
Stage 3: 15 trainers (selected women in teams of 3 members) to train a total of 20 trainees in 5 communities each

3.5 Business Support Issues (Based on Results of Questionnaire Survey)

Between June and August 2006, questionnaire surveys were conducted on BDS providers and needs in the four priority regions. Their primary objective was to determine the current state of supply and demand for business supports according to the above six items (management, production technology, market development, financial support, human resource development, and business environment). Survey results are reported in Annexes 2 and 3. In this section, major issues relating to business support (BDS: business development service), as raised from the survey results, are discussed.

(1) BDS providers

Selection of BDS providers for questionnaire survey was made from the existing directories and the introduction from NBSSI. Thus, while all BDSs are not covered, BDS's structure and direction seem to be indicated. See Annex 2 for detail.

- In Greater Accra, there are many private companies serving as BDS providers. In contrast, this function is mainly performed by NGOs and government organizations.
- Overall the main service fields are market development, corporate management, and technical support, while financial assistance and business environment count much less.

Table 3.5-1 Types of BDS by Region

Unit: Count

Services	G. Accra	Ashanti	Central	Northern	Total
Management services	70	74	41	23	208
Production technology	65	59	52	32	208
Market development	47	83	44	35	209
Financial assistance	21	22	20	4	67
HR development	45	38	24	11	118
Business environment	23	30	8	9	70
Total	271	306	189	114	880

Source: prepared by the study team

- The BDS service fee is entirely paid by beneficiaries in many cases. In the case of Greater Accra, it is partially paid by beneficiaries or is entirely covered by government subsidy in other regions.
- Problems relating to the BDS providers include the shortage of equipment and tools used for service delivery and a relatively small operating budget.

- Problems relating to the BDS market are the high service fee for smaller enterprises and competition among BDS providers.

From the survey results, there are a small number of private BDS providers in rural areas, probably because there is a large number of MEs and SMEs in rural areas and not many of them can afford to pay the service fee for BDS. In rural areas, there is the strong need for NGOs and government BDS providers (e.g., BAC and DA).

(2) BDS demand survey

Surveys of BDS demand among MEs and SMEs indicate strong demand in many items. Note that the survey in Northern Region covered women's groups producing shea butter and the questionnaire was modified in consideration of the literacy rate and other factors, so that the survey result is not included in this analysis. Table 3.5-2 shows the summary of responses by 116 companies in the three regions. See Annex 3 for details.

- The number of companies that have received the actual service is smaller in Greater Accra (garment) than in Ashanti and Central.
- In terms of service type, many companies have received service relating to management, market development, and financial service, in particular, SME loan, management consultation, and entrepreneurship.
- Financial service is most frequently cited in all the regions as the service in most demand.
- It is then followed by management support, production technology, and market development.
- High demand is seen in the participation of an exhibition, management consultation, and SME loan.
- High demand is also seen in the services that companies have already received.

In Greater Accra, not many garment companies have received service despite the large number of private BDS suppliers, probably because the service fee was too expensive. Thus, the availability of private BDS providers does not assure sufficient service delivery.

On the other hand, services highly demanded by micro enterprises (MEs) and SMEs are completely provided by public and private BDS providers in the country. Thus, if the fee issue is resolved, existing services will be able to meet the needs in a satisfactory manner by ensuring geographical expansion and enhancement of service.

Table 3.5-2 BDS Demand by MEs and SMEs

Unit: Number of Response

Support Services	Responses from the Regions							
	Greater Accra		Ashanti		Central		Total	
	Received in the Past	Demand in the Future	Received in the Past	Demand in the Future	Received in the Past	Demand in the Future	Received in the Past	Demand in the Future
1. Improvement of Management								
Management consultation	2	57	9	16	6	18	17	91
Setting up a company	2	45	6	19	3	10	11	74
Training of manager	2	28	7	8	3	11	12	47
Entrepreneur seminar / Incubation program	1	25	10	24	6	18	17	67
Other				1		2	0	3
2. Development of Production Technology								
Specific technology training		39	5	24	5	13	10	76
Leasing of production equipment and tools		24	4	20		13	4	57
Advice for modernizing a facility	1	38	5	14	1	9	7	61
Technical assistance and consultation for Productive improvement		21	6	14	3	13	9	48
Assistance for improving research and development	1	25	6	20	1	9	8	54
Cooperative R&D with universities and / or Research Inst.		8	2	7	2	6	4	21
3. Market Development								
Participating an exhibition	3	64	4	18	5	16	12	98
Provision of marketing information		47	2	19	5	18	7	84
Cooperative marketing	2	21	3	16		18	5	55
Intermediate agent service		6		6	1	5	1	17
Assistance for new product development and new design development		49	2	19		8	2	76
Improvement of marketing capability		44	3	19	1	15	4	78
New market exploration		40	2	20		16	2	76
4. Financial Assistance								
Loan for small and medium enterprises	1	52	12	21	9	17	22	90
Capital participation	1	18	5	9		3	6	30
Credit guarantee system	1	34	5	14		13	6	61
Subsidy for loan interest		31	4	21		13	4	65
Leasing systems for machineries		13	2	17		12	2	42
5. Human Resource Development								
Training / Education of skilled worker	1	19	8	22	3	11	12	52
Training of Engineers		1	1	6	1	7	2	14
Training of Middle-level Managers		3		5	1	11	1	19
Other		18				1	0	19
6. Improvement of Business Environment								
Factory location placement		45	1	16		6	1	67
Testing, inspection		17	1	26		7	1	50
Upgrading distribution system		17	3	12		8	3	37
Information Technology		17	3	6		11	3	34
Revitalization of chamber of commerce and industry / trading association		18	3	6		10	3	34
Promotion and dissemination of ISO accreditation		12	1	12		9	1	33

Source: prepared by the team

Most importantly, companies do not realize the existence of the root cause, or even if realized, they are not enthusiastic about the solution of such problems by making serious efforts or taking the necessary risk, because they are busy pursuing immediate profits. Also, efforts to build a collaborative network for the industry or to enjoy benefits from collective activities[12] tend to be given the lower priority. Thus, addressing problems of individual

[12] Collective purchase of raw materials, joint order receiving, sales promotion, negotiation, training, and shared facilities and equipment, which lead to cost reduction in comparison to the same activity by a single company.

companies has a small impact on other companies[13] and does not likely lead to the development of groups and clusters that serve as the core of local industry development.

[13] If there is a company that serves as core, supports maybe focus on it. However, there are few core companies in Ghana's local industries.

3.6 Issues Relating to Local Industry Development

In this section, major issues relating to the local industry development are identified on the basis of discussion in 3.1 to 3.5.

(1) Policy and institution

The present development policy based on GPRS indicates that private sector development is considered to play an important role. Within this framework, TSSP defines the implementation method for private sector development. TSSP specifies project outlines, size and its implementation body. If it is implemented in an efficient manner, it will contribute greatly to the development of the private sector including local industries, although the plan should be finalized in detail prior to actual implementation. From local industry development perspectives, there seem to be three issues.

First of all, there are many TSSP projects and programs that need implementation, which make it difficult for the current staffing of MOTI/PSD/PSI to implement them according to schedule[14]. In fact, many projects seem to be behind schedule. For instance, SME/Technology division, which is the direct counterpart in the present study, has the largest number of staff members among other organizations and difficulties to implement its projects according to the schedule. A major reason for such delay in the project implementation is the failure to secure an original budget according to the plan.

Secondly, TSSP is much segmented and it is difficult to implement many projects with proper coordination. If projects are implemented by aligning a schedule and/or target sector in a certain direction, it will likely have significant impacts on the private sector. However, a single project will be limited in effectiveness.

Finally, the majority of TSSP projects are oriented to export promotion, while some focus on the invigoration of the domestic market. While export promotion is an important goal, it is still a formidable challenge for many local companies. While it is proposed to build infrastructure (road and market) to correct regional disparity in the business environment, it takes considerable money and time to execute.

[14] TSSP Programme Implementation Plan addresses problems relating to the shortage of staff.

PSI and DIP are also export-oriented policies. Also, they are relatively large in size due to an emphasis on economic impacts or job creation effect. Nevertheless, no successful case has been reported. This is partly due to the financial constraint and partly due to capacity constraint on the project implementer's side.

(2) Government organization for local industry development

To ensure effective use of a limited budget, activities of ministries and agencies involved in local industry development (e.g., MOTI/PSD/PSI, MOFA, MLGRDE, NBSSI, and GIPC) need to be coordinated. In particular, MOTI/PSD/PSI does not seem to have much experience in working for maximum efficiency by mobilizing the ministry's resources.

A major issue facing NBSSI is the proper training of BAC's new recruits, in addition to budget and staffing. As BAC expands its activity bases throughout the country, it should be used as a support organization capable of providing direct support to local industries. Thus, training results of BAC staff govern content and quality of activities for local industry development. Also, BDS facilitator's activities are affected by how the databases on BSD providers/resource persons and the development of microenterprises and SMEs, which are under development, will be used.

For GRATIS, major issues are the enhancement and improvement of technical support service. As BDS providers specialized in technical support services are small in number, the presence of GRATIS is important. At the same time, GRATIS obtains most of the revenues from the training service and sales of production equipment and is expected to become financially independent in the future. Under these circumstances, it is difficult for GRATIS to provide service with free of charge or service that is not conducive to profit. Also, production equipment made and sold by GRATIS needs to be improved in terms of use, performance, and durability.

Local industry development activities by DA should be enhanced. As decentralization progresses, local government – in particular, DA – is expected to become the core element of local industry development. It has been conducting various support activities for local industries, such as microcredit and training, which have not been intensive enough, and some DAs do not provide any support. They need to step up efforts to promote the importance of local industry development and to intensify activities.

As for other support organizations, interview surveys and BDS surveys revealed that their services were not always suitable for local industries in terms of service quality and price, although the scope of service was broad. Also, their local activity bases and staffing are limited. Their operating budget is also limited and new activities cannot be expected unless they are funded by an outside source on a project basis.

(3) Expectation for RCB

For the local economy and its invigoration, RCB's more aggressive lending policy plays a critical role. While SUSU and microcredit service can meet short-term needs, there is unsatisfied demand for long-term funds used for capital spending. To meet such demand, two-step loans from the World Bank and other donor organizations are being considered and they may be supplied to SMEs via RCB. RCB searches prospective borrowers, and it is important to match supply and demand.

(4) Support activities by donor organizations

Most importantly, efforts should be made to ensure the continuation of various support activities by donor organizations. Their activities are specific in terms of geographic area or government organization. Support activities for SMEs and local industries are provided through private BDS providers (including NGOs) or public organizations such as BAC and GRATIS. In either case, it is important to continue each support activity – in some forms - after the termination of the formal period. In the light of this, the government intervention or involvement is very important, even in the case of a donor support activity conducted through a private BDS provider.

(5) Issues relating to private business support service

According to the BDS survey, Private BDS is unevenly distributed (See Annex 2 & 3 for detail). Especially, only a small number of BDS providers are available in the Northern region. Although NBSSI attempts to support micro enterprises and small enterprises by using BDS providers and resource persons, it faces difficulty in finding the sufficient number of providers in some areas. If BDS is to be entrusted to the private sector, the government should provide support by training private BDS providers.

4. Outline of Target Industries in Four Priority Regions and Trial Programs

4. Outline of Target Industries in Four Priority Regions and Trial Programs

In this chapter, the current statuses of each target industry in selected 4 regions are explained. Subsequently, summaries of each trial program are mentioned to give reasonable grounds for the master plan which is presented in the next chapter. The details of the trial programs are described in the Trial Program Implementation Report as a separate volume.

4.1 Selection of Target Industries in the Four Priority Regions

The following four industries were selected as temporary target industries in the minutes of meeting agreed between the Ministry of Trade and Industry, and the Preparatory Team of JICA dated 18 August 2005.

- Greater Accra Region: Garment
- Ashanti Region: Palm oil or Cassava processing
- Central Region: Citrus processing
- Northern Region: Shea butter

The team accepted these minutes and implemented the basic survey especially on those industries selected by counterparts. The team decided not to change the target industries unless a serious problem was found. However, in the case of Ashanti Region, since two candidate industries were proposed, the team selected Palm Oil processing as the target industry after due consideration of stakeholders' opinions and statistical data. The criteria used for selection are explained in section 4.3.

The next table shows the distribution of target industries in 10 regions.

Table 4.1-1 Industrial Structure by Region

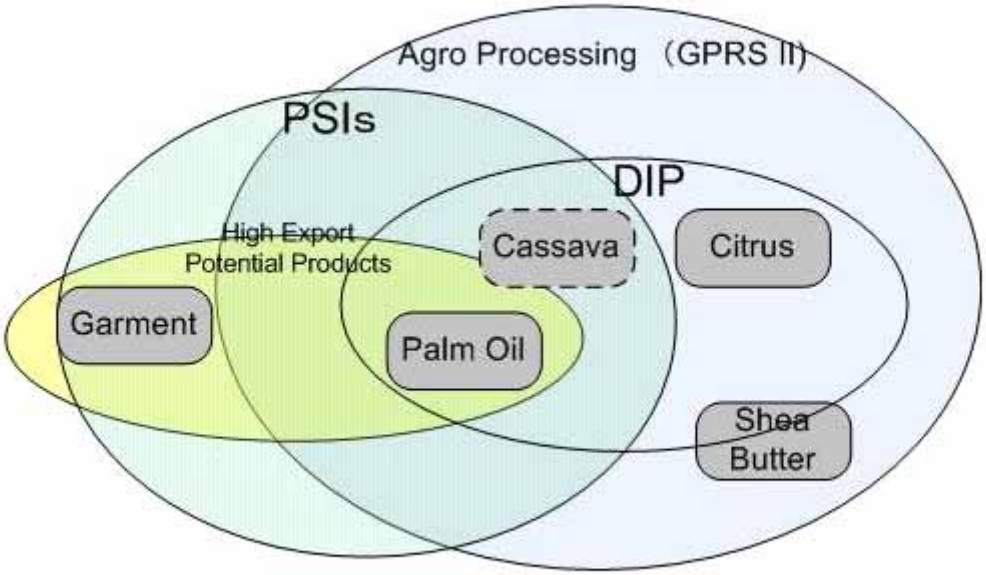
Category of Industry	Number of companies	Persons engaged	Distribution of company by Region									
			Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West
Total of all industrial sectors	27,157	298,243	7%	10%	25%	5%	11%	24%	7%	5%	3%	2%
1513 Processing and preserving of fruits and vegetables	32	1,317	16%	3%	16%	6%	16%	34%	3%	6%	0%	0%
1514 Manufacture of vegetables and animal oils and fats	586	16,414	11%	15%	3%	1%	13%	19%	1%	26%	8%	3%
1712 Finishing of textiles	192	3,211	4%	6%	19%	9%	15%	35%	5%	3%	2%	3%
1810 Manufacture of wearing apparel by cutting and sewing fabrics	10,411	59,175	7%	9%	33%	4%	13%	19%	7%	4%	2%	2%

Source: elaborated by the Team based on National Industrial Census 2003

The team elaborated the table above based on the data of National Industrial Census 2003. Although this figure probably does not cover all companies operating in Ghana, especially informal sectors, however, this is expected to indicate the industrial structure of each region. It is obvious that companies are concentrated in Greater Accra and Ashanti region and the sum of these two regions account for almost one half of the total companies in Ghana.

The percentages of those industries related to candidate industries of the study shows significant concentration in Ashanti region according to the census. On the other hand, Greater Accra has the highest concentration in garment (1810). Northern Region has smaller number of companies but it accounts for 26% of manufacturing of vegetables and animal oils and fat (1524), the highest percentage in the country. In the case of the Central Region, fruits and vegetable processing industry is still underdeveloped. The fact that only a few fruits processing companies were operating in Central Region was confirmed by the field survey.

Taking into consideration the relationship between major Ghanaian industrial policies and target industries, all industries seem to fall in line with major policies. Among those industries, palm oil is related to all major policies.



Source: Prepared by the team

Figure 4.1-1 Major Policies and Target Industries

The present situations of target industries in selected regions are described below. Then, summaries of trial programs, including outlines, results and lessons, are discussed.

4.2 Greater Accra Region

4.2.1 Current State of the Garment and Textile Industry

According to the country's industrial census conducted between 2003 and 2005, the total number of establishments in 25 industries is 27,157. Of the total, four industries have over 1,000 establishments each and the garment industry represents the largest share of around 40%, or 24,113 establishments. In terms of persons engaged, the garment industry (ISIC: 1810) hires 55,301 workers, which account for about 22% of the country's total workforce of 249,062. Clearly, the industry is a major employer in the country. On the other hand, its value of production amounts to 724.5 billion Cedis, only 1.9% of the national total, while its share in value added is 3.4%, totaling 4,920 million Cedis.

Greater Accra Region accommodates a variety of industries with the garment industry showing a high level of concentration. There are more than 3,400 companies with a workforce of about 16,000 persons, accounting for nearly one-half of companies operating in the region. Furthermore, various PSI-related projects such as training centers and the Garment Village are mostly operated in the region. The region also has a number of textile mills and dye shops (which are intensively operated in Ashanti Region), as well as textile wholesalers.

(1) Structure of garment and textile industry

Garment manufacturers in the country can be roughly divided into three types, depending on the type of the market/product they serve. The first type is the so-called dressmakers, which are micro enterprises which use several sewing machines and make tailor-made clothes as well as clothes sold on the street. The average number of employees per company in Greater Accra is 4.7 versus the national average of 5.7 (according to the industrial census). This indicates that most companies in the region's garment industry belong to the first group. In addition, owners of these companies operate sewing machines by themselves. The second group consists of companies that have a few employees and are managed by owners who sometimes act as designers, while their management including finance and production are separated and handled by different personnel. They produce Ghanaian traditional costumes and locally designed clothes. They also export products to neighboring countries and niche markets in the U.S. and Europe. The third group represents large manufacturers in terms of Ghanaian standard (with 100 or more employees) that make apparel products upon demand from foreign buyers and are located in the export processing zone or enjoy tax incentive for export promotion. As many of these companies started operating in the last three or four years,

they still have to secure a sufficient customer base. Their operating rate is relatively low as at February 2006 but sales are projected to increase gradually in the long run. First and second companies have nature of a tailor who makes the cloth from the beginning to the end. This way of manufacturing causes considerable variation in quality and makes it difficult for workers to be on top of the manufacturing process resulting in low productivity. Division of labor is not common in Ghana because the standard cloth market is not developed and order-made is still mainstream business. However, most of the imported products are standard cloths and the market share is expanding. Another reason for is due to the fact that the decision to industrialize the garment industry (knowledge of management) has not been extended to the micro and small companies. Japanese garment companies were also small and had an average of 15 employees. However, now almost all Japanese garment companies adopted division of labor because knowledge of management were spread among them and the share of standard cloth in the domestic market was increased.

The textile industry in Ghana first started as a cotton production unit of a government enterprise. The aim was to promote import substitution in line with government policy of the early 1960s. In the 1960s and 1970s, the government nurtured the industry by granting tax incentives for the establishment of textile mills. As a result, the industry served as a leading industrial sector and employed approximately 25,000 workers during its peak period, representing 27% of the manufacturing sector's total employment. From the 1970s to the early 1980s, the national economy stagnated while cotton prices rose sharply. The production of cotton products also declined significantly during the same period. The shortage of foreign currency reserves prohibited manufacturers from importing raw materials. Later on economic liberalization brought in its wake a flood of imports which caused the local textile industry to deteriorate sharply.

(2) Raw materials

Grey clothes used by garment companies in Ghana are batik, tie-dye, screen print, or wax print, together with kente, which are made of cotton, polyester, nylon, viscose, silk, wool, or linen. Locally made cotton holds a dominant share, while imports come from Europe, East Asia, Indonesia, Sri Lanka, and Turkey. According to "Diagnostic Report and Export Development Strategy for the Textile Industry in Ghana" published by Joint Integrated Technical Assistance Program (JITAP), imports account for 44% of raw materials used by the industry.

In Ghana, there are four textile companies in operation: Akosombo Textile Ltd. (ATL), Ghana Textile Printing (GTP), Printex, and GTMC (as of August 2006). ATL is the only company with an integrated process of spinning, weaving, dying, and finishing. GTP closed its spinning and weaving subsidiary, which produced grey cloth, in 2005. The other three companies import grey cloth from countries such as Cote d'Ivoire and China. Some printed products are exported to neighboring countries. The country's spinning and weaving industry is in decline due to high production costs (tax, fuel, labor, and social security). High cost of grey cloth makes, production cost in Ghana fairly high compared to those from Asian countries[1].

(3) Management and Human Resource

Many garment companies in Ghana are operated and managed by their owners, who solely oversee business administration, product development, production, and sales. It is often pointed out that this owner management is a major reason for inefficient operation, insufficient employee training, and/or the delay in the adoption of new technology. In terms of human resource development, the garment industry does not have or train employees having required skills because many companies are small and serve only the domestic, retail market. For the industry to secure volume contract manufacturing jobs or explore foreign niche markets, the industry needs to train professionals in areas of production and sales.

There are vocational training centers that have been established under the assistance of UNIDO or as part of PSI, and they teach sewing techniques by using industrial machines. Textile Garment Trading Center (TGTC) primarily train sewing shop workers for mass production, rather than dress makers with tailoring skills. In addition, basic management skills such as bookkeeping are taught to assist the startup of garment business. As a result, the number of machine operators and other technicians are gradually increasing, while there are plans to establish training centers in regions other than Accra. On the other hand, foreign manufacturers operating in the Garment Village in Tema, train operators on on-the-job training basis. They plan to produce simple designed products at the initial stage and add more complex design products to improve sewing techniques. However, they do not provide jobs on a regular basis and are not able to improve productivity. Besides, skills do not improve much because employees often leave the company or are absent from work. Foreign garment manufacturers use expatriate supervisors from their home countries. For garment manufacturers which labor cost accounts for relatively large portions of the total

[1] According to UNIDO's "Based on the work of Richard Chmielowiec Garment Consultant" (1994), the materials cost for Afrostyle long dresses accounts for 68% of the total production cost.

production cost, low labor productivity is a serious concern. Furthermore, wage levels of the foreign garment manufacturers [2] are not very low in comparison to those in Asia and higher than those in India and Sri Lanka. Clearly, it is very difficult for the industry to make viable operation from low value added, contract manufacturing. Some local companies hire foreign supervisors under the government's financial assistance as part of PSI. However, unless all managers become Ghanaians in the future, it is difficult to increase cost competitiveness.

(4) Production facilities

Most micro enterprises use old sewing machines, which are manually operated, and are thus not capable of meeting volume demand. To have the volume production capability, garment manufacturers need to have several types of single-function and durable machines in order to maximize efficiency of the sewing process. The results of a questionnaire survey conducted by JITAP of 83 garment manufacturers indicate that the number of industrial machines including over locking and buttonhole machines is much less than hand-operated machines (See Table 4.2-1). Equipments other than sewing machines (e.g. cutting machine and steam press) are owned by a relatively small number of companies.

Table 4.2-1 Breakdown of Equipment Used by Garments Manufacturers

Category of Equipment	Equipment/Machine	Quantity (Pieces)	Category of Equipment	Equipment/Machine	Quantity (Pieces)
Stitching	Sewing machine (hand)	132	Cutting	Cutting machine	10
	Sewing machine (electric)	46		Electric scissors	2
	Straight stitch	94		Guillotine	1
	Straight stitch (industrial)	86	Sub-total	-	13
			Forming / Pressing / Ironing	Steam presses	2
	Overlocking machine	41		Pressing iron	22
	Zigzag machine	41		Industrial iron	5
	Embroidery machine	36		Button making machine	1
	Buttonhole machine	15		Buckle making machine	2
	Blind stitch machine	1		Designing machine	6
	Flat lock machine	5		Dress stand	3
	Zigzag machine	1		Fusing machine	1
	(industrial)			Glue gun	1
	Buttonhole machine	1		Press studs machine	2
	(industrial)			Others	3
	Knitting machines	3			
Sub-total	-	502	Sub-total	-	48
			Total	-	563

Source: Diagnostic Report and Export Development Strategy for the Textile Industry in Ghana (JITAP)

[2] Some SMEs pay their workers on a piecework basis.

Garment shops visited by the team had machines made in South Korea and China, as well as those of reputable sewing machine suppliers in Japan and other industrialized countries, such as Juki, Yamato, Singer, and Pfaff. Many of them kept old machines that were no longer used without proper maintenance. Some machines were out of service and left idling for long periods due to the lack of repair parts. Furthermore, few companies had generators for emergency power supply, except for large shops.

(5) Market

Major customers are individuals. Some of them sell their products to open market vendors, private enterprises, government organizations supermarkets and sales agents. Some manufacturers have their own sales outlets. In the domestic market, local manufacturers are facing intensive competition with imports (including illegal ones) and used clothes originated in the U.S. and Europe, and many of them realize that they cannot effectively compete with foreign products in terms of price. According to the field survey, used clothes account for around 60% of the domestic market, as they are purchased by not only low income people but also the middle income class on the basis of comparison in terms of price and quality. Historically, there are not many retailers specialized in clothing, and many consumers buy clothes in open markets or bring cloth materials to dress makers for tailoring. There is no large retailer that sells clothing in large quantities, as seen in many industrialized countries. In terms of product type, so-called ready-made clothes are not sold widely and order-made production is the main business style. The rest of demand consists of uniforms used by companies and schools, but their share appears to be fairly small.

Textile and garment products exported from the country are primarily designed for markets in the U.S., the UK, and other EU countries, which hold a combined share of over 80%. The remaining share goes to the ECOWAS[3] market, South Africa, Zimbabwe, Namibia, and Ethiopia. Exported products include cotton print clothes of African garment, namely Fancy, Wax, and Java, as well as calico smog, and other women and men's clothes (so called "Afrocentric Garment"). In addition, local textile products, led by kente cloth, are exported. The majority of exports are distributed in importing countries through import traders. However, micro and small sized garment manufacturers in Ghana do not have sales agents in foreign markets, making it difficult for them to export their products on a continuous basis and

[3] The fifteen West African countries constitutes ECOWAS, Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leon, Togo. Nigeria has the largest market among them.

seemingly ending up in on-time sales in many cases. The largest importer is the U.S., totaling $1.07 million and account for 67% of Ghana's garment exports, followed by the UK ($70,000), Germany ($60,000), Tanzania (slightly less than $40,000), and Nigeria ($30,000). In 2004, the country exported $1.6 million worth of garment products[4]. Table 4.2-2 shows the major export garment items. The large volume items are footwear, men's shirts and worn clothing. It seems Ghana re-exports worn clothing to other countries.

Table 4.2-2 Major Garment Export Items (2004)

Item	FOB US$
Panty hose, tights, etc, and footwear, knitted or crocheted	775,729
Men's or boys' suits, ensembles, jackets, blazers, trousers, etc	233,768
Worn clothing and other worn articles	137,385
Women or girls' blouses, etc, knitted or crocheted	106,717
Used or new rags, scrap twine, cordage, rope and cables of textiles	58,749
Women or girls' suits, ensembles, jackets, dresses, skirts, etc	57,029
Other garments, knitted or crocheted,	50,180
T-shirts, singlet and other vests, knitted or crocheted	29,405
Blanket sand traveling rugs	23,265
Other made up articles (incl. dress patterns)	22,845
Babies' garments and clothing accessories	4,900

Source: MOTI/PSD/PSI

The value of garment products imported by Ghana in 2004 amounted to $75 million (CIF basis), of which worn clothing accounted for over 50%, or $42 million. The countries of origin are the U.S. ($13 million), Canada ($11 million), India ($7 million), China ($6 million), and the Netherlands ($6 million).

Table 4.2-3 Major Garment Import Items (2004)

Item	CIF US$
Worn clothing and other worn articles	41,630,005
Sacks and bags, used for packing goods	8,883,531
Panty hose, tights, etc, and footwear, knitted or crocheted	6,184,612
Women's or girls' suits, ensembles, jackets, dresses, skirts, etc.	2,384,732
Bed linen, table linen, toilet linen and kitchen linen	2,012,967
Men or boys' shirts	1,888,401
Tarpaulins, etc; tents; sails; camping equipment	1,416,864
T-shirts, singlet and other vests, knitted or crocheted	1,220,993
Men or boys' underpants, briefs, nightshirts, pajamas, etc	862,782
Babies' garments and clothing accessories	819,127

Source: MOTI/PSD/PSI

[4] Covering products under HS code (6-digit) 610000 through 631090; the same definition applies to Table 4.2-2.

(6) Global trend

The Multi Fibre Arrangement (MFA) was introduced in 1974 to impose quotas on textiles and garments from developing countries in an attempt to control massive exports from Asia to western countries. As the demand for market opening by developing countries arose, however, it was phased out under the Agreement on Textile and Clothing (ATC) that was effectuated, with the WTO agreement, in 1995.

Against a backdrop of the institutional changes, the U.S. government enacted the African Growth and Opportunity Act (AGOA) in May 2000, whose purpose was to encourage economic development of African countries by facilitating access to the U.S. market and thereby stimulating their exports to the U.S. In particular, the act applies the following incentives to textiles and garments exported by AGOA-eligible countries that have introduced the "Visa System" to allow effective export control of textile products: (a) products with local content of over 35% and using U.S.-made fabrics and cloths may be imported tariff free without limitation; (b) products using cloths made in Sub-Saharan Africa from fabrics made in Sub-Saharan Africa or the United States may be imported tariff free up to 1.5% of the U.S. total volume of textile product imports (the 1.5% limit will be raised to 3.5% over eight years; (c) countries whose GNP per capita as of 1998 is below $1,500 are eligible for the above incentives up to the end of September 2004, even if the third country's materials are used. The AGOA enables African countries to have international competitiveness as they are allowed to use import fabrics, making a sharp contrast to the Cotonou Agreement[5] and other trade agreements which require use of costly, domestic materials. Partly because of strong request from African countries, the special condition to allow the use of imported fabrics has been extended to September 2007.

Note that the introduction of the AGOA did not necessarily contribute to quick expansion of exports by all countries. Nevertheless, measures imposed by the AGOA, especially tariff exemption and the special privilege to use imported materials, helped African countries to improve their competitiveness. In particular, Lesotho, Kenya, Madagascar, and Swaziland enjoyed appreciable export growth after the introduction of the AGOA, in addition to South Africa and Mauritius that made significant exports before the AGOA. On the other hand, the AGOA failed to cause noticeable growth of textile exports from Ghana. The mixed results seem to be largely attributable to foreign direct investment. Foreign companies bring not

[5] The Cotonou Agreement is a treaty between the European Union and the group of African, Caribbean and Pacific states (ACP countries).

only management, technology, and equipment, but sources of raw materials and sales channels as well. Foreign direct investment stimulates domestic investors, creating the multiplier effect. However, Ghana does not seem to be attractive enough for foreign investors because it is not positioned as a major textile exporter. It can only offer comparative advantages in terms of political stability and low labor (nominal) costs, while the traditional textile and garment industry does not have volume production capabilities or a production management system that can meet a short lead-time demanded by U.S. companies. Furthermore, poor labor productivity[6] makes the actual labor cost higher than the nominal one, making the country less competitive for export.

Another unfavorable factor is the termination of the MFA quotas in the beginning of 2005, which has allowed competitive manufacturers in China to boost exports to the U.S., whereas exports from African countries declined by around 16% between January and November. This suggests that Ghana cannot expect much investment by foreign companies that intend to be engaged in mass production, unless the AGOA's special condition to allow the use of imported materials is retained after 2007, and more importantly, and unless labor productivity is improved significantly.

4.2.2 Problem Analysis and Summary of the Trial Program

As mentioned earlier, the detail of four trial programs (TP) is explained in the separate volume called "Trial Program Implementation Report". In this study, implementation of TPs delivered many lessons for making master plan and action plans. In this section, for consistency, completeness and convenience for readers, the summary and results of TP are presented.

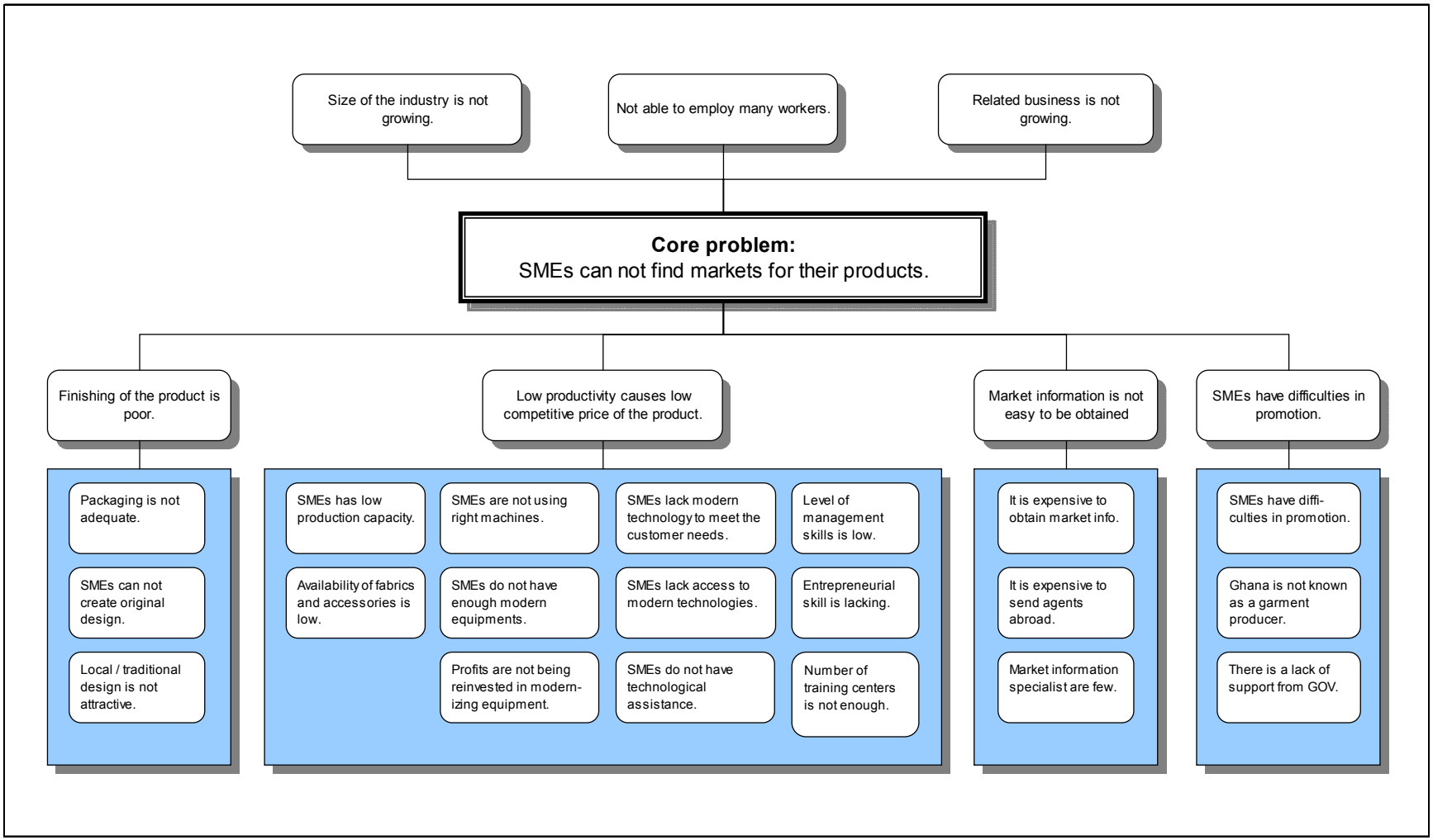
(1) Problem Analysis

At the workshop conducted on 26 May 2006, the core problem and their causes were identified. They were compiled into a problem tree shown in Figure 4.2-1.

Core problem was "SMEs can not find markets for their products" and the direct causes identified by participants were classified into the following factors.

1) Finishing of the product is poor.
2) Low productivity causes low competitive price of the product.
3) Market information is not easy to obtain
4) SMEs have difficulties in promotion.

[6] The labor productivity in the garment companies visited during the field survey was 5 – 6 pieces (shirts) per man-day. Chinese garment factory can make more than 20 shirts.



Source: Prepared by the team

Figure 4.2-1 Problem Tree of the Garment Industry in the Greater Accra Region

(2) SWOT Analysis

Based on problem analysis, literature survey and company visits, the team compiled the SWOT analysis shown in Table 4.2-4. The important factors for designing the TP are listed below.

Strength

- Substantial Afro-centric market in U.S. and Europe
- Ghana is a key production country of African prints

Weakness

- Cheap imported second hand garments dominates the local market
- Low Production efficiency
- Low capability to control production

Opportunity

- Duty free export to US market (AGOA)
- PSI scheme provides machineries
- Training centers provide skilled workers

Thread

- Competition in the export market is getting aggravated
- Declined local textile industry forces the garment industry to rely on imported materials

Due to the limitation of time, budget and human resources, it is not possible to take up all issues during the TP. The team determined that solving market and raw material problems and improvement of business environment were too large to be implemented within the time frame of the TP. The remaining important issues were manager training, human resource development and upgrading technology. The team prepared TP based on the opinions of counterparts and the target industry needs.

Table 4.2-4 SWOT Analysis: the Garment Industry in the Greater Accra Region

	Market	Production Technology	Raw materials	Human Resource	Development capability	Business Environment
STRENGTHS	• Substantial Afro-centric market in U.S. and Europe.	• Traditional fabrics such as Kente can be obtained.	• Ghana is a key production country of African prints. • Cotton production	• Comparative low wage (Min.19,200 cedi/day) • Workers are obedient and can be taught in English.	• Potential Afro-centric design ability	• Stable democratic government
WEAKNESSES	• Low purchasing power in domestic market • Cheap imported second hand garments dominates the local market.	• Low production efficiency • Old machinery • Inadequate maintenance • Low capability to control production	• High cost of fabrics and accessories. • Unstable raw material supplies	• Lack of work ethic • Low level of skill	• Limited information about world fashion trend	• Difficulties in access to finance due to the high cost. • Lack of management capability • Lack of business information
OPPORTUNITIES	• Duty free export to US market (AGOA). • Free zone regime provides favorable conditions to exporters. • Potential sales channels in Ghanaian communities abroad.	• PSI scheme provides machineries.	• Improvement of business environment attracts additional investment in textile industry.	• Training centers provide more skilled workers. • Training centers establish in other cities.	• New generation designer bring more sophisticate Afro-centric design.	• Promotion of PSIs. • Availability of finance scheme such as EDIF
THREATS	• Special treatment for importing foreign fabrics in AGOA comes to the end in 2007. • Competition over the same niche market is getting aggravated.		• Declined local textile industry forces the garment industry to rely on imported materials.			

(3) Selection of Trial Program

Major problem facing the garment industry is the high production cost due to low productivity. The problem analysis revealed that it was caused by the low level of management capability[7]. In addition, low level of management capability was identified as the weakness of the industry at SWOT analysis. In addition, some of SME managers who participated in the workshop expressed the need for training in the areas of management and factory operation. Furthermore, some companies visited by the team failed to perform proper administration and/or management. Taking all these into consideration, training of product management and management diagnosis was set as the theme of the TP in the stakeholder workshop.

Program: Training of SME managers to modernize their management

The major question was which the target group should take the training. The following opinions were expressed by potential beneficiaries and other stakeholders.

- Technology transfer to local consultants is considered to be better than training managers in terms of effectiveness, breadth and continuity.
- There are no qualified consultants. No effective support can be expected from consultants.
- SME managers may not have time to receive training for a long period.
- It is more urgent to improve the present manager's capability, rather than younger or next-generation managers.

In consideration of the above opinions, it was decided to make technology transfer to local consultants in the formal training program, which would then provide training for SME managers with the Team. It is considered to be the best way to ensure the program's sustainability.

(4) Outline of Trial Program

The summary of this TP is described in Project Design Matrix (PDM) shown in Table 4.2-5.

1) Purpose: SMEs managements are modernized.
2) Expected Output
   a) Organization for manager training is prepared
   b) Self-diagnosis and management improvement are implemented by a trained manager
   c) Dissemination system of manager training is prepared.

[7] Production management, marketing, financial management, labor management etc.

Table 4.2-5 Project Design Matrix — Greater Accra Garment Industry

Name of trial program : Training of managers toward modernizing management
Target group : Small and medium sized garment companies
Implementation Area : Greater Accra Region
Implementation period : August 2006～July 2007

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal SMEs gain competitiveness.	• Sales expansion	• Total sales volume	
Project Purpose SMEs managements are modernized.	• Improvement activities are done according to the results of self-diagnosis. • As result of improvement activities, the overall condition of management is improved.	• Inquiry about improvement activities • Score of self-diagnosis after improvement	1. Business environment of garment change dramatically.
Outputs			
1 Organization for training is prepared.	• Number of trained trainers • Manuals for training • Content of curriculum	Participants list Manuals Curriculum	1. Trainers change their jobs after training.
2 Trained managers implement self diagnosis and management improvement.	• Number of mangers trained • Improvement plan	• Participants list • Reports	
3 Manager training method is disseminated.	• Number of participants in W/S. • Plan for dissemination • Satisfaction of participants	• Participants list • Reports • Questionnaire	
Activities 1-1 Invite and select local consultants as trainer candidates. 1-2 Compile manuals for the training. 1-3 Determine the curriculum contents 1-4 Train selected local consultants as trainer candidates. 1-5 Improve manuals in line with the current conditions of the industry. 1-6 Invite and select managers for training. 2-1 Provide training (classroom lecture) to managers by local trainers. 2-2 Practical training at a sample company 2-3 Implement self-diagnosis and management improvement. 3-1 Evaluate results of self-diagnosis and management improvement. 3-2 Present results of self-diagnosis at the workshop. 3-3 Formulate dissemination plans.	**Inputs** JICA Study team • Japanese experts • Operating expense - Employment costs of Ghanaian staff - Transportation and accommodation costs - Expenses of training, meetings, workshops - Expenses of training materials Ghanaian counterparts • Counter personnel • Office space, office equipment and furniture • Operating expense - administrative and management costs		1. The government changes the policy for the garment industry. **Pre-conditions** 1. Adequate local consultants agree to become trainers. 2. Adequate participants agree to join the program.

(5) Trial Program Achievements

- Major achievements and results:
  - Training for 20 trainers (4th field survey)
  - Training for 18 owners / manages from 14 different companies (5th field survey)
  - On the site training of 5S and follow up (6th field survey)
  - Training of garment production management technology for supervisor of PSI garment training center (6th field survey)
  - Follow up survey on participant companies and guidance (6th field survey)
  - Producing teaching materials of garment production management technology (videos and slides) (6th field survey)

- The program was implemented mostly according to the PDM without a significant problem. The inputs were also made as planned, but the involvement of NBSSI's district office was limited to selection and participation of trainers.

- Outputs have been mostly achieved. As for participation in the training program, the target number was achieved for trainers, whereas the number of participants representing owners and managers fell below the target, i.e., 14 versus 20 companies contemplated for the plan.

- As for training results, priority was given to implementation of 5S and production management techniques, rather than implementation of self-diagnosis. This is because owners could not see direct or immediate effect of self-diagnosis, while the course was rather advanced and thus difficult to understand.

- Regarding the project purpose "modernization of management of SMEs," actual progress in improvement of production activity and practice – in the form of 5S and layout modification - was confirmed by the follow-up survey.

(6) Lessons learned from trial program

- The program has proven that the initiative introduced under the program – 5S, small group activity, and production management techniques[8] – would be highly useful for the apparel industry in Ghana. On the other hand, other initiatives - self-diagnosis and kaizen planning – have failed to gain understanding or acceptance of owners and managers who participated in the trial program.

[8] Production management techniques are situation analysis, motion study, time study, production planning and factory layout.

- The trial program has trained and produced human resources and teaching materials that can be used as the basis of continuing it as a permanent program.
- It has been confirmed that the apparel industry does not have international level of production technology and thus the training program such as the one conducted under the trial program plays an important role in raising their technological base.
- The training program was accepted by participants because of their practical applicability. However, it tried to cover rather broad subjects, some of which were difficult to understand and/or did not meet immediate needs. Clearly, the curriculum should be reviewed and refined in consultation with related parties.
- Among the activities offered in the trial program, field trip and practical training at various factories was proven to be highly effective. Coupled with use of visual aids, participants have gained high level of understanding.
- Closer collaboration with polytechnic and PSI Training Center, e.g., participation from the planning stage, could have improved the program's sustainability.

4.3 Ashanti Region

According to the industrial census conducted in 2003, there were 111 oil and fat processing factories in the region[1]. In addition, there were 13 factories processing starch. However, the census results primarily cover formal enterprises and the above figures would increase if informal enterprises were included.

4.3.1 Current State of the Palm Oil Processing Industry

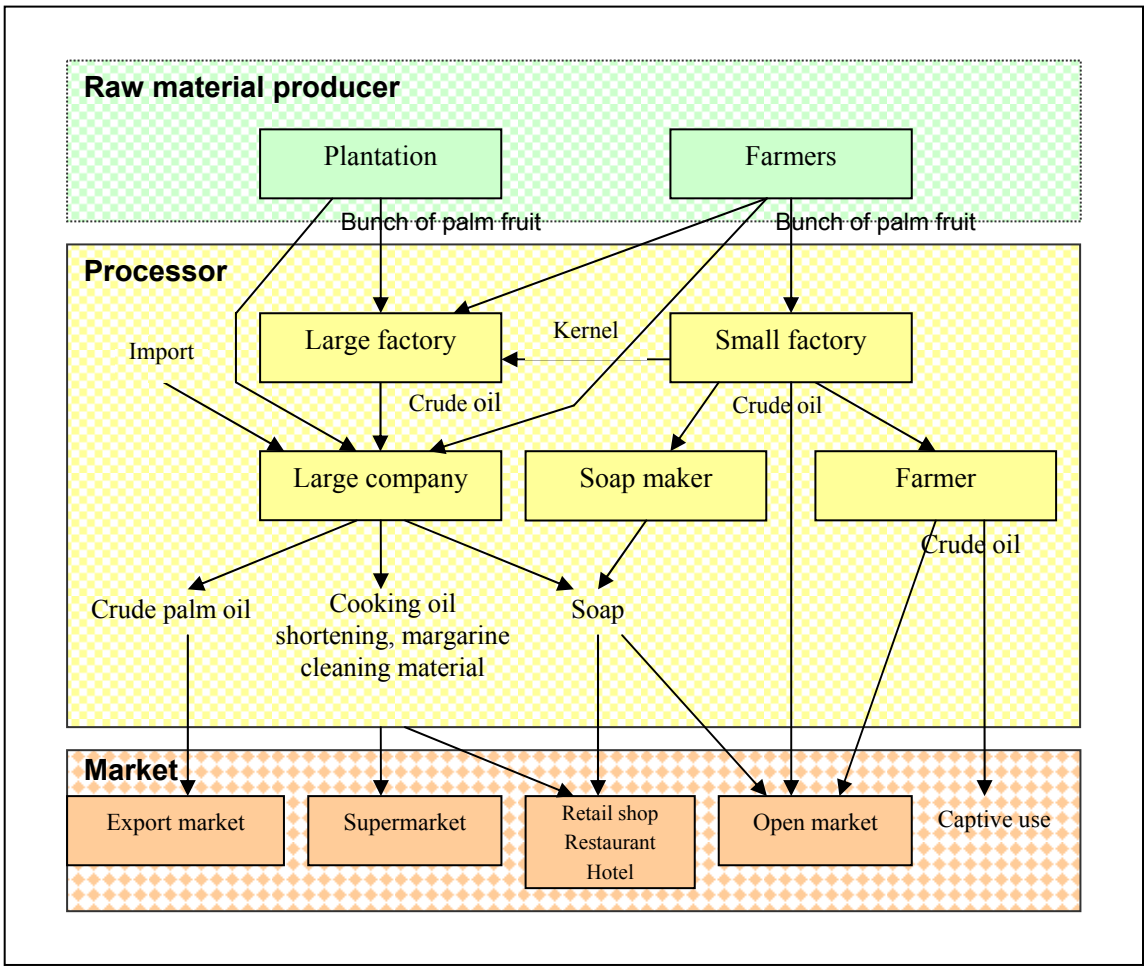
(1) Structure of palm oil processing industry

The supply chain of palm oil in Ghana, from production of raw materials to processing and consumption, is illustrated in Figure 4.3-1. Supply chain of palm oil industry can be divided into 3 layers; material production, processing and market.

Material production can be divided into mainly two groups; the first group consists of large scale well-organized producers and the second group consists of independent small scale producers predecessors run by farmers. Top four large scale plantations such as GOPDC, BOPP, TOPP and NOPL produce 28% of total palm fruits in the country (MOFA Agricultural Statistics 1999).

The supply chain of palm oil industry can be divided into 3 types. The first type is processing from palm fruits to crude oil and the second type is a processor which purchases crude oil as raw materials to refine. The last type is a secondary processor, which manufactures products like soap from crude oil. Crude oil processors are mainly small in production scale and can be divided into a company and a cooperative run by about 10 female workers. Those processors with refineries are large scale and produce crude oil as well as soap or other products; sometimes they even run palm tree plantations by themselves. The secondary processors are mainly small. The market can be export market, wholesale market for super markets, retail shops, restaurants and hotels, roadside and open market. The some are used as home captive consumption by processors.

[1] More accurately, they should be called manufacturers of animal/vegetable oil and fat. However, most of them are said to be engaged in processing of vegetable oil, such as palm oil and shea butter.



Source: Prepared by the team

Figure 4.3-1 Palm Oil Processing Industry

(2) Production of palm fruit

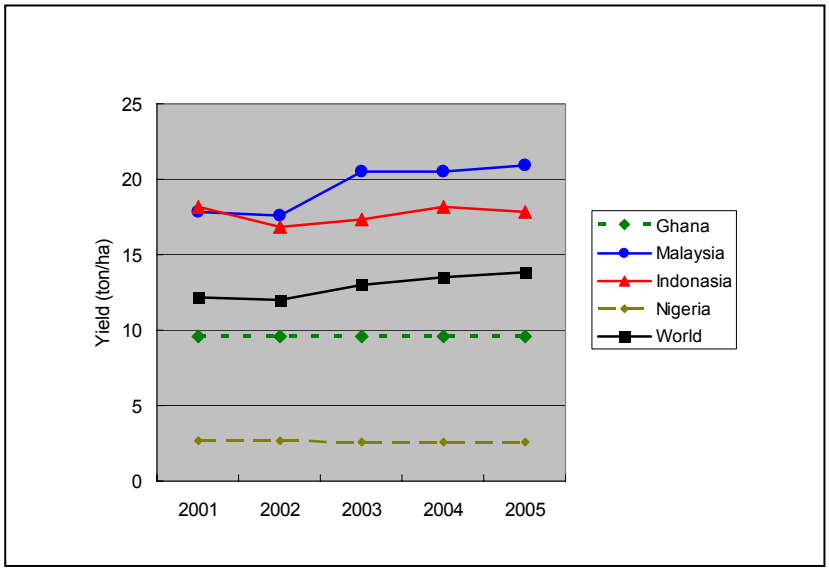
In Ghana, approximately 1,070,000 tons of palm fruit were produced from the cultivated area of 112,000 hectares in 2005[2]. The production accounted for 0.8% of world production and 6.8% of total production in Africa, it ranked fifth in Africa[3]. Ashanti Region represents 18%[4] of the country's palm fruit production.

[2] (http://faostat.fao.org/faostat/collection?subset=agriculture) However, according to "Agriculture in Ghana: Facts and Figures" compiled in 2004, the harvested area for palm oil in 1999 totaled 284,949ha, that is 2.5 times the figure here. The Team confirmed with FAO's Ghana office and FOA estimated the harvested area and the yield.

[3] The largest producing country is Nigeria, account for 54.8% of total production in Africa, followed by Cote d'Ivoire, Cameroon, Democratic Republic of the Congo and Ghana. There is no substantial difference between second and fifth in the ranking.

[4] According to the interview with MOFA

To measure international competitiveness of palm oil, the yield per unit area (representing productivity of palm oil) is a major indicator. Figure 4.3-2 compares Ghana's yield of oil palm fruit with that in Malaysia, which controls 50.9% of world palm oil trade, Indonesia – holding 37.4% share[5].



Source: Prepared by the team based on FAO's data

Figure 4.3-2 Yield of Oil Palm Fruit

The table indicates that the yield in Ghana is nearly one half that in Malaysia and Indonesia, and 30% lower than the world average. On the other hand, it is 3.7 times that in Nigeria. These findings bear the following three implications.

- There is a large room for yield improvement in Ghana by means of breed improvement and the improvement of cultivation methods, such as fertilizer application and the use of agricultural chemicals[6].
- It is difficult to compete directly with Malaysia and Indonesia, and Ghana's oil palm industry should preferably establish its position in niche markets.

[5] The volume of world palm oil trade (export) reached 23,165,282 tons in 2004, which increased by 114% over the decade, or an annual rate of 7.9% (calculated from FAO data).

[6] According to "Agriculture in Ghana," the yield of palm fruit per hectare was 3 tons for small farms, 7.5 tons for medium-sized farms, and 14.4 tons for BOPP, a major plantation farm. The large share of small farms in terms of cultivated area – accounting for 87% of total – and the substantial yield differentials suggest that there is a large room for breeding as well as the improvement of cultivating methods.

- Ghana has a competitive edge over Nigeria (that is the largest palm oil consuming country in Africa)because in terms of raw materials, production cost and the export price which is much less than the import price of Nigeria.

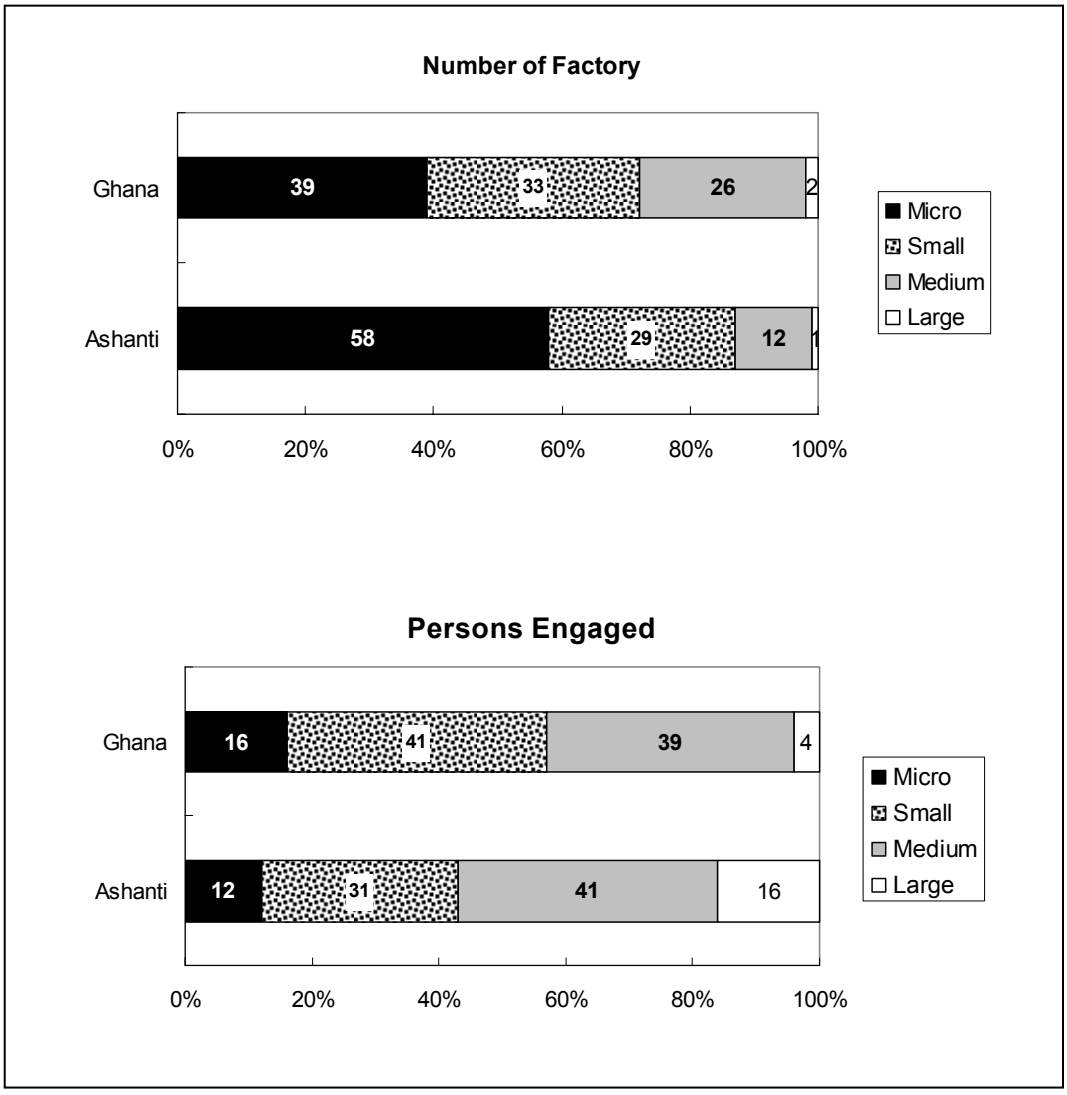
(3) Production of the palm oil

According to the industrial census, 586 oil and fat factories are operated throughout the country and have a total of 16,414 person engaged, which represent 5.5% of the total workforce in the manufacturing sector[7]. In Ashanti, there are 111 oil and fat factories with the total workforce of 1,422 person engaged. Figure 4.3-3 shows the number of oil and fat factories by size and the number of persons engaged in the country and in Ashanti[8].

There are 14 large scale oil factories with more than 100 persons engaged but only one located in Ashanti. There are 152 middle scale factories with 30 to 99 persons engaged and 13 factories are located in Ashanti. There are 192 small scale factories with 6 to 29 persons engaged with 32 factories located in Ashanti. There are 230 micro scale factories with less than 5 persons engaged with 65 factories in Ashanti. From these figures, there are more micro and small scale factories and less middle and large scale factories in Ashanti.

[7] Note that for some companies, workers of oil palm plantations are included in this figure.

[8] Ghana classifies enterprises by the number of employees and the value of fixed asset (for instance, see "Ghana Integrated Industrial Policy for Increased Competitiveness," Sept. 2002). Accordingly, for the purpose of this study, manufacturing establishments with five employees or less are classified as microenterprises, those with 6 – 29 employees as small enterprises, those with 30 – 99 employees as medium-sized enterprises, and those with 100 or more employees as large enterprises. Note that a unit of establishment is used, rather than a unit of enterprises, because they are used as the unit of measurement in the industrial survey.



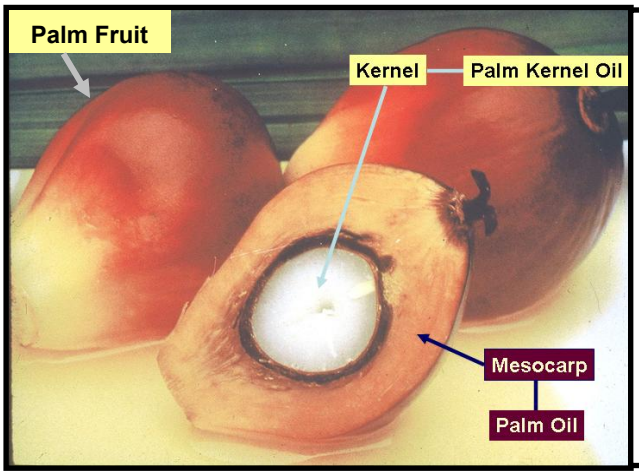
Source: Prepared by the Team based on Industrial Census 2003

Figure 4.3-3 Distribution Ratio of Number of Companies and Persons Engaged

(4) Manufacturing process

Palm oil is produced by squeezing palm fruits that are collected from oil palms. More precisely, oil produced from a mesocarp of palm fruits is called palm oil[9] and that produced from albumen contained in a palm seed is called palm kernel oil (See Figure 4.3-4)

[9] Palm oil before refined is called crude palm oil and processed palm oil thereafter. Processed palm oil is further divided into liquid portions that are called palm olein, and solid portions that are called palm stearin. The former is used as cooking oil and the latter is processed to margarine, shortening and ghee.



Standard composition of palm fruit

Weight per bunch	23～27kg
Fruit content/bunch	60～65%
Oil content/bunch	21～23 %
Kernel/bunch	5～7%
Kernel oil content/kernel	21～22%

Source: Presented by Malaysian oil palm Promotion Council, http://www.mpopc.org.my/faq.asp/.

Figure 4.3-4 Palm Fruit and Oil

Figure 4.3-5 shows the crude palm oil manufacturing process up to storage of kernel that is the byproduct. Note that details of the clarification process, which consists of separation of unesterified fatty acid and gum substance, discoloration, deodorization, etc. as well as separation of processed palm oil by heating to liquid palm olein and solid palm stearin, are omitted in the diagram.

The sterilization process at large factories uses high pressure steam to deactivate an enzyme (lipase) contained in the palm fruit - which destroys oil and fat content - and thereby preventing hydrolysis and autoxidation. This also facilitates oil extracting and allows the removal of palm fruits from a bunch. Small factories that cannot afford to use high pressure steam make sterilization using hot water. As hot water is absorbed through thorns on the bunch, heat sterilization is carried out after palm fruits have been detached from the bunch.

The digestion process (fruit crushing) is carried out to facilitate oil extraction by crushing palm fruits. In this process, fine iron in the crusher tends to be included in oil, causing oxidization and rancidity odor.

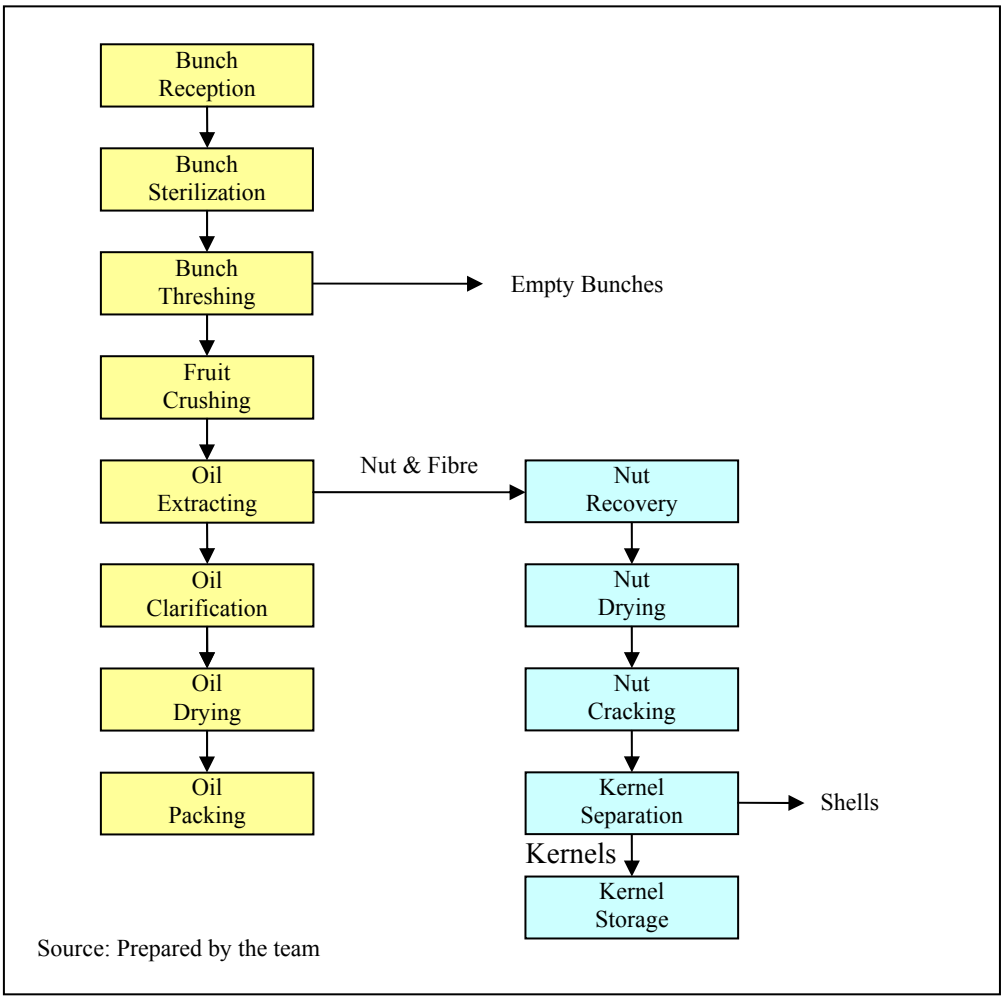


Figure 4.3-5 Palm Oil Processing

There are roughly three oil extracting methods. Firstly, the dry method is to apply mechanical pressure to crush palm fruits, and it is divided into two types according to the type of machine, i.e., batch and continuous. Secondly, the wet method is to use hot water and make oil leach from crushed palm fruits. The third method is a hybrid of the dry and wet methods. Oil extraction is made at first by applying the dry method and then remaining solid matters are placed in hot water to facilitate oil leaching, following by pressing. Among the factories visited by the team, larger ones used the wet method (continuous type) and the small ones employed the wet method (batch type).

The separation process removes water, solid matters, fibers, and non oil content mixed in the extracted oil. By adding hot water, heavy substance settles at the bottom of the cooker, while gum substance and resin dissolve in hot water, and oil comes to the surface which is then separated. The separated oil is called crude palm oil because foreign matters are not

removed completely. Quality problems at small plants include high content of water or FFA, inclusion of foreign matters, and low oil yield[10].

(5) Palm oil market

Table 4.3-1 summarizes the supply and demand situation on palm oil and kernel oil. If palm oil imports are used to satisfy domestic demand, the country's dependency on import is 41.6%, suggesting a large room for import substitution that can be achieved if the oil extraction rate is improved.

Table 4.3-1 Balance of Supply and Demand of Palm Oil and Kernel Oil

(Unit: ton)

Section			Palm oil	Kernel oil
Supply	Production		108,400	13,351
	Import		117,879	59
	Total		226,279	13,410
Demand	Domestic	Food	62,801	6,705
		Other uses	122,978	6,125
		Sub total	185,779	12,830
	Export		40,500	580
	Total		226,279	13,410

Source: Prepared by the team based on FAO's data

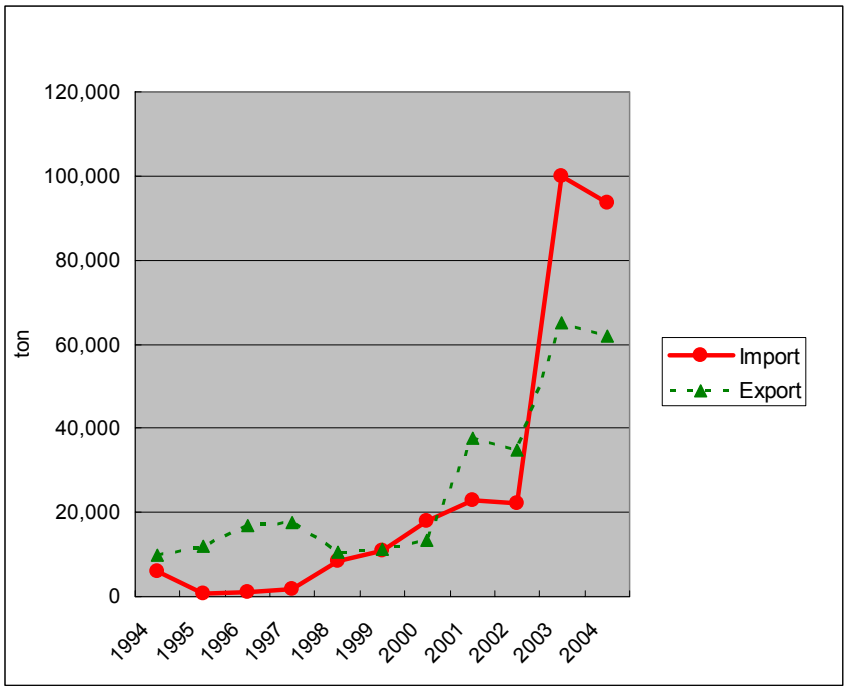
As shown in Table 4.3-1, palm oil is consumed in several ways, i.e., crude palm oil, cooking oil after clarification, a raw material for shortening and margarine, and a raw material for soap and detergent.

In rural regions, edible palm oil is sold in the open market or on the street. In Greater Accra, it is also sold at retail stores and supermarkets. The retail sales price is 20,000 cedis (US$2.20) for crude oil sold in a 4 – 5 liter plastic bottle (in the open market or on the street) and 14,000 cedis (USUS$1.54) per liter for processed cooking oil[11].

While palm oil exports fall below imports, both of them are on the rapid rise recently (Figure 4.3-6). As seen in Figure 4.3-7, the export price is nearly one half the import price, and thus crude oil is presumably exported whereas refined oil is imported.

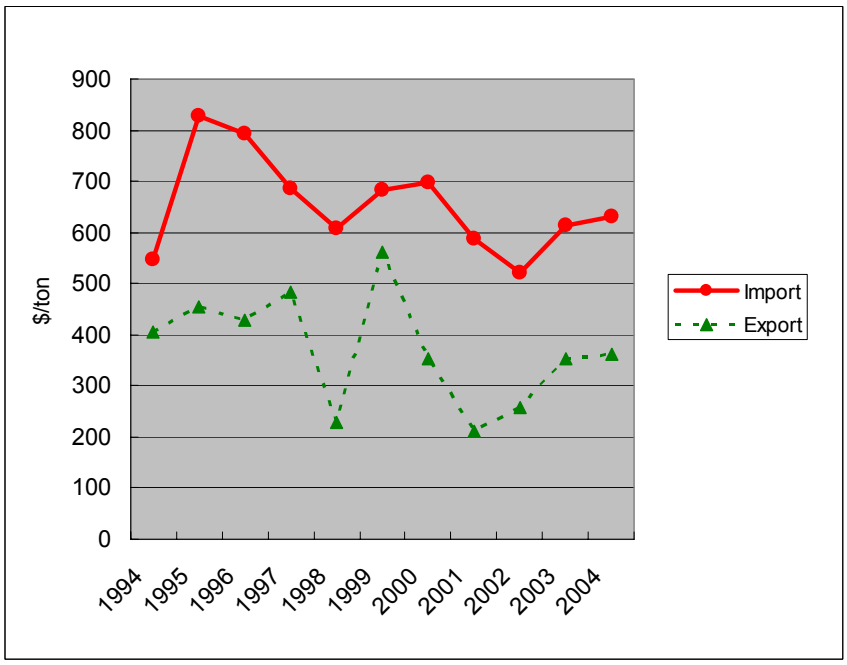
[10] Based on FAO's data, the average oil extraction rate in Ghana is estimated at 9.9% for palm oil and 30% for kernel oil.

[11] Cooking oil produced by a multinational operating in Ghana is 18,000 cedis ($1.98) per liter (as of June 2006).



Source: Prepared by the team based on FAO's data

Figure 4.3-6 Trade Volume of Palm Oil of Ghana



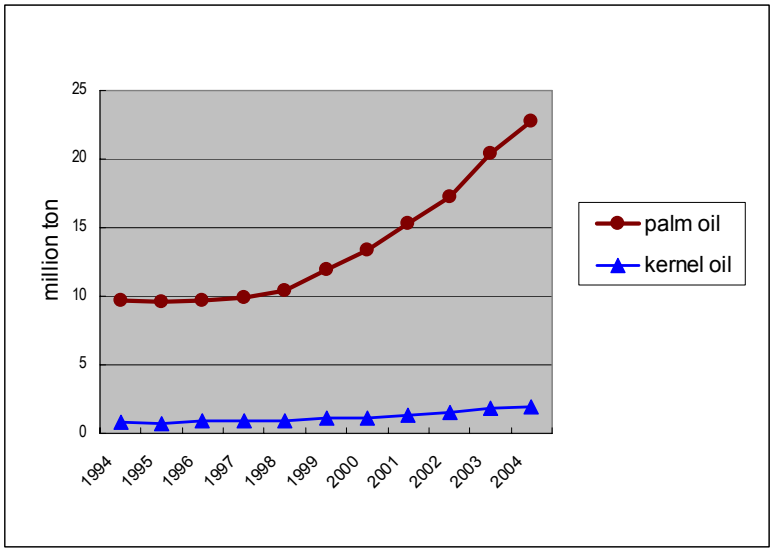
Source: Prepared by the team based on FAO's data

Figure 4.3-7 Unit Price of Palm Oil Trade of Ghana

(6) World palm oil market

World palm oil production is estimated at around 28.4 million tons[12], of which 76% is traded in the international market. Figure 4.3-8 shows yearly changes in world imports of palm oil and kernel oil in the recent ten years. Clearly, the volume of palm oil trade has been growing rapidly since 1999. Between 1998 and 2004, it grew by 120%, equivalent to an annual growth rate of 14.0%. A similar trend is observed for kernel oil trade.

Malaysia's export price per ton (CIF) ranged between US$253 and $616 for palm oil and between US$345 and $767 for kernel oil during ten years up to 2004. Both prices are on the steady rise after 2001, reaching at US$462 and $517 in 2004[13].



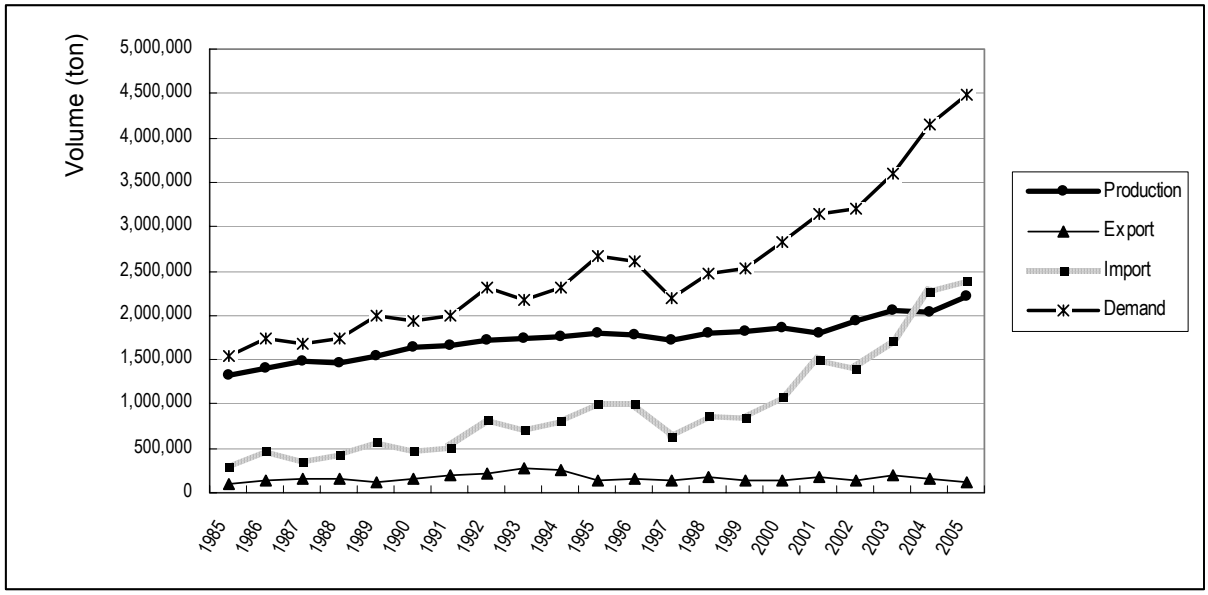
Source: Prepared by the team based on FAO's data

Figure 4.3-8 Import Volume of Palm Oil & Kernel Oil in the World

Figure 4.3-9 shows palm oil supply and demand trends in Africa over the past twenty years. Demand has been on the rapid rise since 1999, which accompanies strong growth of the import volume at an annual rate of 22.5%, well over the world average. Africa's import volume accounts for 11.0% of world total in 2004. As for palm oil import in the top three of Africa is Egypt (725,340 tons, 2005), South Africa (273,590 tons, 2005) and Tanzania (250,540 tons, 2005). Ghana ranked fifth in the African ranking, with its import volume (89,300 tons, 2005) doubling in the five year period since 2000.

[12] "Oil World," 2003/2004 (estimate)

[13] The FOB price per ton in April 2006 was $386 for crude palm oil, $410 for processed palm oil, and $522 for crude kernel oil. Malaysian Palm Oil Board, http://www.mpopc.org.my/.



Source: Prepared by the team based on FAO's data

Figure 4.3-9 Demand and Supply of Palm Oil in Africa

4.3.2 Current State of the Cassava Processing Industry

(1) Structure of cassava processing industry

Cassava is divided into two types, namely bitter cassava with high content of detrimental cyanhydric acid[14] and sweet cassava with lower content. The former has a large rootstock and is characterized by high yield. Because of high starch content (25%), it is used as raw material for starch production. Starch made from cassava is used to make fiber sizing and adhesive for corrugated cardboard box or construction materials or used as a raw material for fermentation to make glutamic acid and vitamin C. Also, it is dried in a chip or pellet form and used as hog feeds. On the other hand, sweet cassava can be used for cooking or is dried and crushed to make cassava powder from which gari or flour substitute (for bread or biscuit) is made[15].

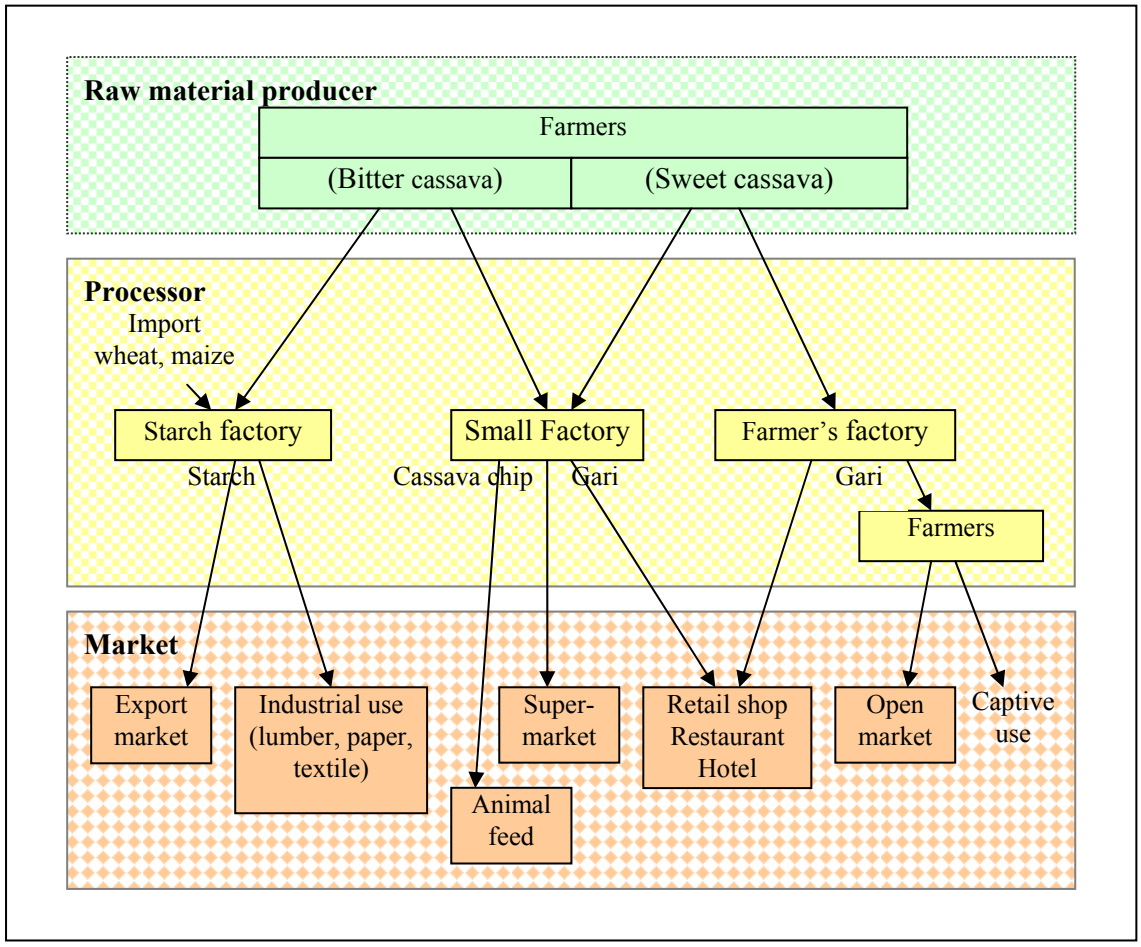
As cassava deteriorates rapidly after harvesting and adversely affects product quality or processing yield, it is processed within 48 hours after harvesting. Raw cassava is rarely traded because of its low price[16] as well as quick deterioration over time.

[14] The toxicity can be removed by heating or water washing.

[15] Gari is used to prepare typical Ghanaian foods, such as fufu which is a water-dissolved and kneaded gari and is eaten in a soup.

[16] The cassava price including physical distribution is said to be in the range between $36 and $75 per ton. "Global cassava market study," 2004, FAO an IFAD

The supply chain of Cassava and processed product markets in Ghana is illustrated in Figure 4.3-10.

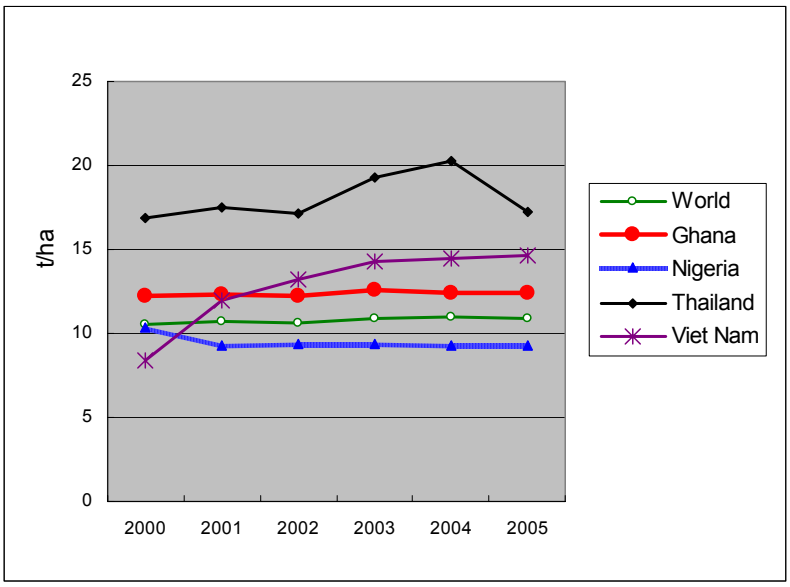


Source: Prepared by the team based on FAO's data

Figure 4.3-10 Cassava Processing Industry

(2) Cassava production

According to the Annual Sample Survey of Agriculture conducted by MOFA, Ghana produced 9,738,812 tons of cassava from the total cultivated area of 738,947 hectares in 2004, of which Ashanti accounted for 12.6%. The national average yield in 2005 is 12.4 tons per hectare (ha), which is better than the world average, but 15% - 28% lower than Thailand (holding 75% share in the dried cassava and cassava starch export market) and Vietnam (12%) (Figure 4.3-11). A major reason for the low yield compared to major exporting countries is the fact that the exporting countries cultivate bitter cassava with higher yields, whereas Ghana mainly produces edible sweet cassava.



Source: Prepared by the team based on FAO's data

Figure 4.3-11 Yield of Cassava

The wholesale price of sweet cassava is around US$220 per ton[17]. By multiplying it by the yield of 12.4 tons, income earned from cassava heaving per hectare is US$2,727. To earn the same income from bitter cassava, 90.9 tons are required[18]. This is 5.3 times the yield in Thailand and is practically impossible to achieve with the current cultivating technique. From the above calculation, the following implications are obtained.

- Even if the yield is raised to that in Thailand, income earned from bitter cassava will be US$516 per hectare, which would not provide a strong incentive to farms.
- In consideration of competitiveness, it is not feasible to target the EU, major market for dried cassava, or China and Japan that are major importers of cassava starch[19].
- Cassava processed products can target niche markets[20] in neighboring countries and import substitution in the domestic market[21].

[17] During the period between late 2005 and early 2006, the price of a 91kg bag was approximately 180,000 cedis.

[18] The sellable price of bitter cassava is assumed to be $30 per ton. The export price of dried cassava with the 50% yield is around $70 per ton.

[19] The similar suggestion was made in "Global cassava market study," FAO and IFAD, 2004, and so were Techno Serve and other NGOs as well as donor organizations.

[20] Cassava processed products like Gari is treated as minor ethnic food in the export market and form the niche market

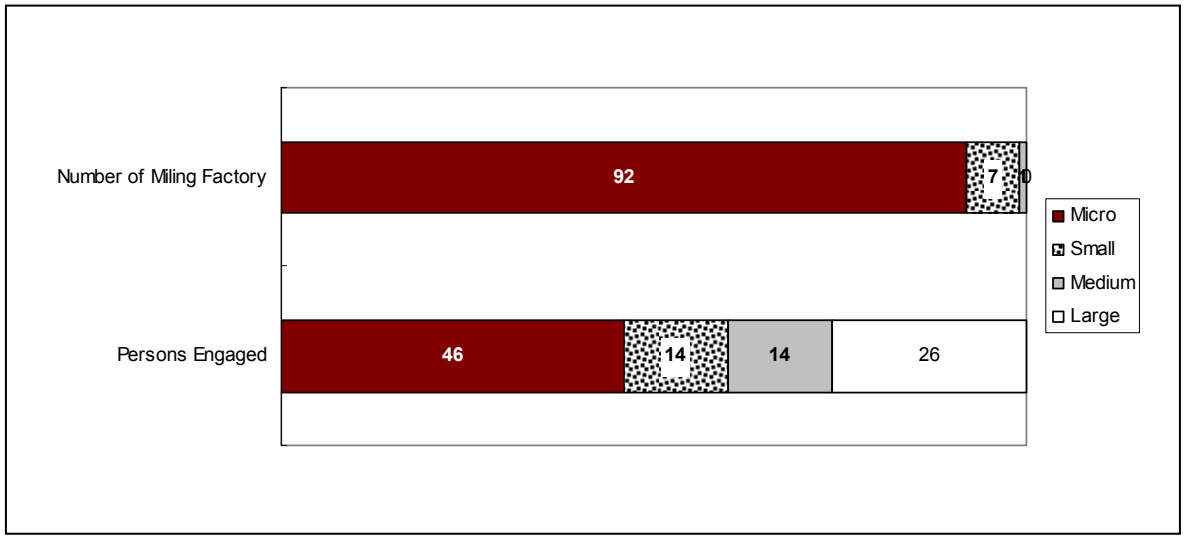
[21] As the means of import substitution, locally made cassava can be used to make industrial glue that is currently made of imported flour or maize, or to partially replace flour used for biscuit production.

(3) Structure of the cassava processing industry

As the above mentioned national industrial census does not cover the cassava processing industry as a separate category, specific data on cassava processing factories are not available[22]. Instead, data on milling factories and starch factories, which seem to include cassava factories, are analyzed as follows.

- There are 1,394 milling factories in the country, which employ 6,789 workers. Ashanti Region accounts for 20% of the total in the number of factories and 13.7% in the number of employees.
- There are 83 starch factories in the country, with 734 persons engaged. Ashanti Region accounts for 15.7% of the total in the number of factories and 4.2% in the number of persons engaged.
- Both milling and starch factories in Ashanti are characterized by a smaller share of employees compared to that of factories, indicating a relatively large number of small factories.

Figure 4.3-12 shows composition of milling factories in the country by size, in the number of factories and the number of employees[23].



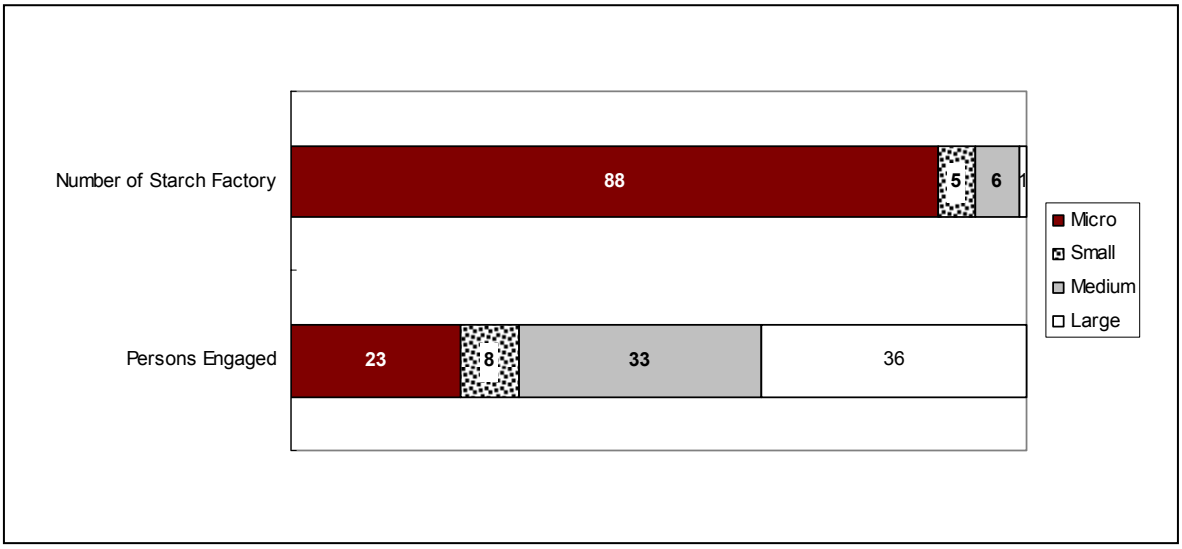
Source: National Industrial Census 2003

Figure 4.3-12 Distribution Ratio of Number of Factories and Persons Engaged (Milling factory)

[22] Cassava factories are apparently classified in milling factories (classification number 1531) and starch factories (1531), while the former includes factories milling flour and maize and the latter starch factories using flour or maize.

[23] The classification standard is the same as that presented in Note 8.

Figure 4.3-13 shows composition of starch factories in the country by size, the number of factories and the number of person engaged. The difference in size is larger for starch factories than for milling factories, indicating that a relatively small number of large factories control the market.



Source: National Industrial Census 2003

Figure 4.3-13 Distribution Ratio of Number of Factories and Persons Engaged (Starch factory)

(4) Manufacturing process

The process flow chart in Figure 4.3-14 illustrates the manufacturing process for gari and starch. Generally, gari is produced at small factories, while starch is made at large ones. Other cassava products include cassava flour, dried cassava, and tapioca. Cassava flour is made through more or less the same process as gari, and dried cassava is made by thinly slicing and drying cassava. Tapioca is made in the same process as starch.

Quality problems relating to processed cassava products are summarized as follows.

- High moisture content (It occurs when products are dried in the sun and are wet by rain. On the other hand, artificial drying requires a higher cost with adequate control of moisture content.)
- Low pH (due to use of deteriorated materials because of poor transport conditions)
- Inclusion of foreign matters (poor cleaning, processing without proper peeling, poor filtration)
- Coloration (processing without proper peeling and excessive drying)
- Odor (use of deteriorated materials and addition of odor in the artificial drying process)

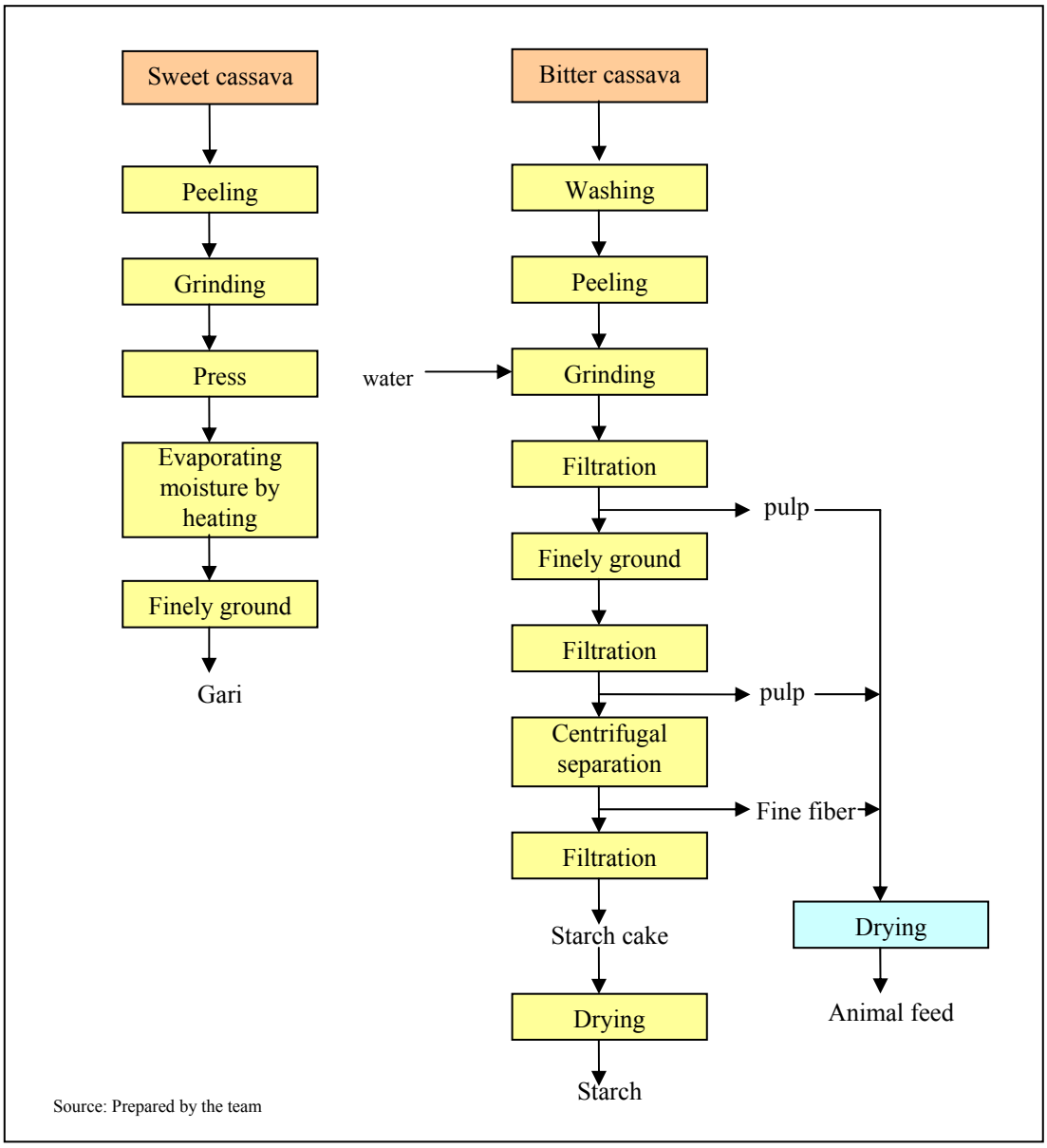


Figure 4.3-14 Gari and Cassava Starch Processing

(5) Cassava and processed product markets

Table 4.3-2 shows the supply and demand situation of cassava. 64% of domestic demand is accounted for by edible products, 30% by animal feeds, and 6% by industrial materials. Characteristically, the level of cassava processing in the country is extremely lower than that in Thailand[24]. Furthermore, approximately 30% of products are disposed as waste and loss.

[24] In Thailand, over 90% of cassava is processed to produce industrial materials and animal feeds.

In Ghana, cassava is mainly consumed as food directly or after processed to gari. Finely ground cassava flour is used to partially replace flour as an ingredient for biscuit and cake, but substitution is not wide spread as expected[25]. Annually, 2,142,000 tons of cassava is consumed as animal feed[26].

Table 4.3-2 Balance of Supply and Demand of Cassava & Processed Cassava

(Unit: ton)

Section			Cassava
Supply	Production		10,239,340
	Import		32
	Total		10,239,372
Demand	Domestic	Food	4,595,318
		Feed	2,141,988
		Other uses	414,863
		Sub total	7,152,168
		Waste	3,073,462
	Export		13,742
	Total		10,239,372

Source: Prepared by the team based on FAO's data

Cassava starch and flour are used as industrial materials for making fibers, medicine adjuvant, corrugated cardboard boxes, and plywood[27], but market acceptance seems to be limited. A bamboo plywood factory visited by the team used imported starch, because they considered local cassava starch to have a weak adhesion and result in a short life, despite its economical price.

[25] According to "Global cassava market study," Natural Resources Institute, Food Research Institute, and University of Ghana are conducting a joint research on use of cassava flour to substitute 35% of wheat for sweet biscuit and 60% for hard biscuit. If 35% of wheat flour is replaced by cassava flour, the production cost is said to decrease by 32%. However, it is still difficult to make cassava flour of consistent quality and development of infrastructure (such as road) and installation of special production equipment is required to make high quality cassava flour. Other reasons for the retard of market acceptance, despite cassava flour's clear advantages, may be related to consumer taste (sour taste, poor taste, odor, color, etc.)

[26] FAO, 2003

[27] In 1996, 4,200 tons of maize, cassava and potato-derived starch were estimated to be used for these purposes. See "Global cassava market study."

(6) International market for processed cassava

Major processed cassava products are dried cassava and starch. Tapioca and cassava flour represent only 1% of dried cassava, as measured by the volume of trade. Table 4.3-3 summarizes international markets for the two processed cassava products based on FAO's data.

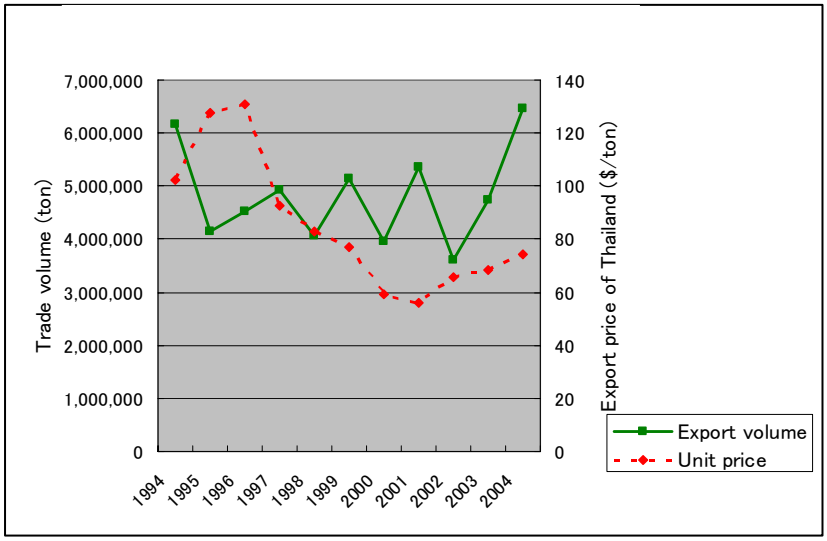
Table 4.3-3 International Market of Processed Cassava

(Unit: ton)

	Dried cassava		Cassava starch	
Total export vol.	6,466,759		1,376,365	
Major exporter	Thailand	5,019,012	Thailand	1,039,699
	Viet Nam	749,666	Indonesia	185,320
	Indonesia	234,169	China	107,467
Major importer	China	3,473,061	China	1,087,709
	Spain	803,695	Japan	130,121
	Netherlands	774,826	Malaysia	113,837

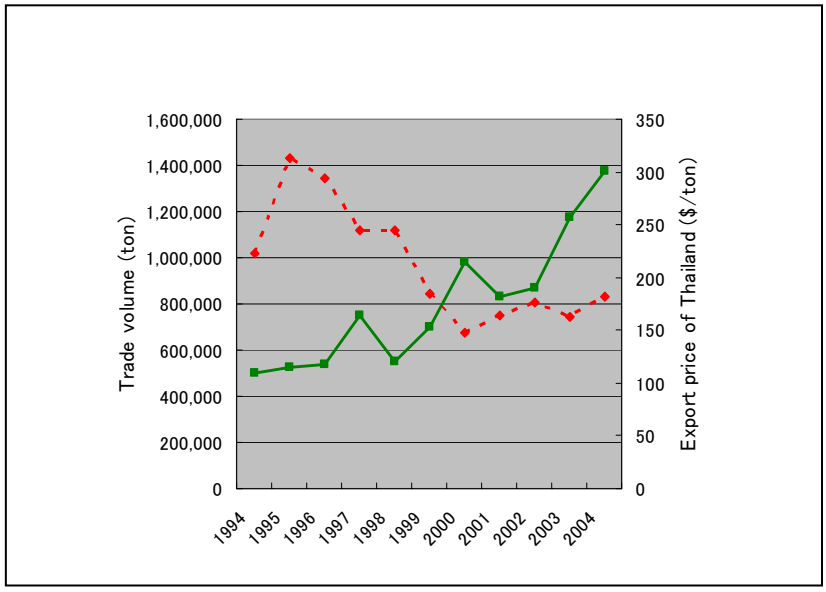
Source: Prepared by the team based on FAO's data

Clearly, Thailand holds predominant shares of dried cassava and starch exports, while China is the major importer of the two products. Note that starch is also made from maize, flour or potato. Accordingly, it is made from various materials, depending on local availability. For instance, maize starch is widely used in the U.S., and wheat flour and potato starch in the EU. Figure 4.3-15 shows yearly changes in the volume of dried cassava exports in the world market and export prices in Thailand, and Figure 4.3-16 the same trends for cassava starch.



Source: Prepared by the team based on FAO's data

Figure 4.3-15 Trade Volume and Price of Dried Cassava



Source: Prepared by the team based on FAO's data

Figure 4.3-16 Trace Volume and Price of Cassava Starch

As seen in the above graphs, the export prices of processed cassava products hit bottom in 2000 and have been growing gradually since then, but their current price levels are still 30% below the peak levels in 1995 and 1996. To export the products at prices competitive with the present international prices, the raw material (cassava) cost must fall below US$30 per ton, while the peak international prices should be limited to US$40.

4.3.3 Selection of the Target Industry for the Trial Program

For Ashanti Region, palm oil processing and cassava processing are selected as candidate industries for the trial program (TP). The following criteria were used to select one of two candidates.

Table 4.3-4 Criteria for Selecting Target Industries

Criteria and Grading View	3 points	2 points	1 point
Criterion 1. Raw materials (availability and growth in production volume)	Large	Medium	Small
Criterion 2. Impact on regional economy (increase in employment, value added)	Large likelihood	Medium	Small
Criterion 3. Marketability (possibility to sell products in wide areas)	Large	Medium	Small
Criterion 4. Possibility for acquisition of foreign currencies (export, import substitution)	Large likelihood	Medium likelihood	Small likelihood
Criterion 5. Necessity for business support (degree of importance by entrepreneurs with necessary technical level)	Large	Medium	Small

Source: Prepared by the team

To make a final selection, the two industries and their conditions are compared and evaluated according to the selection criteria and based on the results of the above mentioned study. Table 4.3-5 summarizes the results of evaluation on the two industries in terms of suitability for the TP.

Table 4.3-5 Situation of Two Candidate Business Categories

Criteria	Palm oil processing	Cassava processing
Raw material	- Palm oil production does not increase. - Yield is lower than that of Malaysia and Indonesia. - Yield per unit area is higher than Nigeria but there is a substantial room for further improvement. - Ashanti Region accounts for one half of palm fruit production in Ghana. 3	- Production nearly tripled in the 90's but growth halted in 2003. - Yield per unit area is lower than Thailand and Vietnam but higher than the world average and Nigeria. - 30% of waste and loss because of transportation and storage is occurring. - Cassava for processing does not have cost competitiveness. - Ashanti accounts for 12.6% of the country's cassava production. 2
Impact on local economy	- The increase in the number of palm oil processors in the region can lead to growth of palm fruit sales. - If local factories increase in number or scale with cost advantage for transportation of raw materials, additional jobs will be created. 3	- Comparing to palm oil processing, the number of workers engaged in cassava processing is less than one half. - Cassava processing can increase employment opportunities for women. 2
Marketability	- Domestic consumption is growing. - Price competitiveness is relatively high. 3	- Domestic consumption fattens. - Demand for processed products does not increase due to quality problems. 1
Possibility of acquisition of foreign currency	- Exports markets in the world and Africa are on the rapid rise. - It is clear that Ghana has the price competitiveness to Nigeria's import price. - The dependency on imported palm oil reaches at 42% and represents a large room for import substitution. 3	- There is little export capability. - There is possibility to substitute flour and starch imports. - In this connection, quality problems constitute a bottleneck. 1
Needs of business support	- There is a substantial room for yield improvement. - There is also a large room for quality improvement. - There is the strong need for improvement in the technology and marketing. 3	- There is a large room for reduction of waste and loss by improving storage and transportation of raw materials. - There is also a substantial room for quality improvement of processed products. - There is the strong need for improvement in the technology and marketing. 3
Total of evaluation score	**15**	**9**

Note: The figure in each column denotes a score assigned based on predetermined criteria, on a scale of one to three.

Source: Prepared by the team

The overall evaluation score is 15 points for palm oil processing and 9 points for cassava processing. Based on the above results, the Team has selected palm oil processing as the target industry for the TP in Ashanti Region.

Note that, if palm oil processing is formally selected for the TP, the following four issues are pointed out and need to be addressed for effective implementation.

1. There is a large room for improvement of productivity, particularly yield.
2. There is a significant room for improvement of value added, including production of soap and refined edible oil.
3. Application markets for kernel can be expanded, such as the use of extracted oil and waste as animal feed.
4. There are substantial export opportunities in Nigeria and other neighboring countries as well as the EU.

4.3.4 Problem Analysis and Summary of the Trial Program

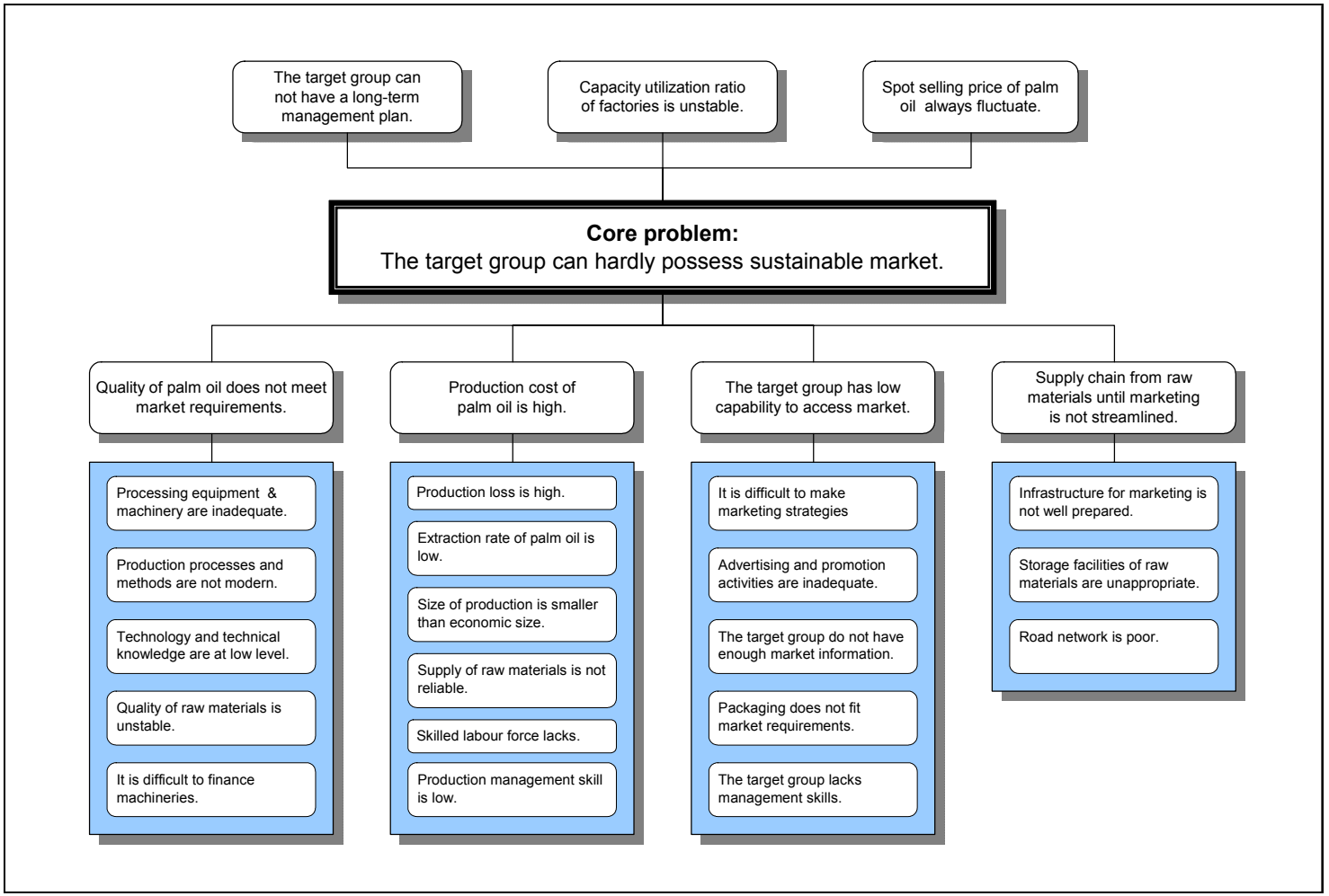
The detail of four trial programs (TP) is explained in the separate volume called "Trial Program Implementation Report". In this study, implementation of TPs delivered many lessons for making the master plan and action plans. In this section, for consistency, completeness and convenience for readers, the summary and results of TP is presented.

(1) Problem analysis

At the workshop conducted on 30 May 2006, the core problem and their causes were identified. They were compiled into a problem tree shown in Figure 4.3-17.

During the problem analysis at the workshop, the core problem is set as "Secure Sustainable Market of Palm Oil" and the direct causes identified by participants were classified into the following factors.

1) Quality of palm oil does not meet market requirements.
2) Production cost of palm oil is high.
3) The target groups have low capability to access market.
4) Supply chain from procurement of raw materials to markets is not streamlined.



Source: Prepared by the team

Figure 4.3-17 Problem Tree of the Palm Oil Processing Industry in the Ashanti Region

(2) SWOT Analysis

Based on problem analysis, literature survey and company visits, the team compiled the SWOT analysis shown in Table 4.3-6. The important factors for designing the TP are listed below.

Strength

- Increasing domestic consumption
- Easy to buy palm fruit
- Palm and oil research in local universities and research institutes

Weakness

- Mostly sold as edible oil (limited diversification)
- Production management method is not well developed
- Dura with low oil content has often been used

Opportunity

- Strong demand from other than general consumers
- Great possibility to increase production by improving extraction rate
- Promotion of Tenera plantation by PSI

Thread

- Import of higher quality edible oil with lower price
- Setting up a large scale factory may cause the shortage of palm

Due to the limitation of time, budget and human resources, it is not possible to take up all issues during the TP. The team determined that solving market problems and improvement of business environment were too large to be implemented within the time frame of the TP. The remaining important issues were manager training, human resource development and upgrading technology. The team prepared TP based on the opinions of counterparts and the target industry needs.

Table 4.3-6 SWOT Analysis: the Palm Oil Processing Industry in the Ashanti Region

	Market	Production / technology	Raw material	Human resource	Development capability	Business environment
STRENGTHS	• Easy access to local market • Increasing domestic consumption	• Availability of affordable processing equipment	• Easy to buy palm fruit around factory.	• Abundant supply of labor.	• Palm and oil Research in domestic universities and research institutes	• Transportation cost from Ghana for EU is cheaper than that of south-east Asia.
WEAKNESSES	• Mostly sold as edible oil. (Limited diversification)	• Production management method is not well developed.	• Small scale palm plantation • Dura with low oil content has often been used.	• Lack of technical staff	• Poor development capability in palm oil processing companies	• Lack of transportation means. • Inferior storage condition for raw material
OPPORTUNITIES	• Production volume is less than domestic consumption. • Strong demand from other than general consumer.	• Great possibility to increase production by improving extraction rate.	• Promotion of plantation increases volume of palm production.		• Development of palm oil related products	
THREATS	• Import of higher quality edible oil with lower price.		• Setting up a large scale factory may cause the shortage of palm.		• Imports of high quality palm oil related products	

(3) Selection of Trial Program

At the workshop on program analysis, high production costs were identified as a major issue, and production loss and the low extraction rate were pointed out as their main causes. On the other hand, palm oil production in Ghana remains at an annual rate of 120,000 tons since 1998, whereas consumption grows substantially. Furthermore, palm oil consumption and imports in the EU – a major export market for Ghana – is on the steep rise. If the Ghanaian palm oil industry can boost production and lower the cost by raising the extraction rate, it will be able to take advantage of the growing demand, creating large impacts on the national economy.

Program name: Palm oil process improvement (KAIZEN) program

The program accords with the Ghanaian government's policy direction to promote expansion of palm tree plantations under President's Special Initiative (PSI). Also, each district assembly accepts that the program will contribute to reduction of poverty by benefiting not only manufacturers but farmers as well.

(4) Outline of Trial Program

The outline of trial program is summarized in the Project Design Matrix (PDM) shown in Table 4.3-7.

1) Purpose: Increase the yield rate of the target group
2) Expected Output
   a) The implementation structure consisting of participating companies and research institute is established.
   b) The performances of each process in participating companies are clarified.
   c) Improvement plans of yield rate based on the analytical work are proposed to participating companies.
   d) The results of the trial program are disseminated through printed materials and workshops

Table 4.3-7 Project Design Matrix ― Ashanti Palm Oil Processing Industry

Name of trial program : Increase yield and reduce loss of palm oil process
Target group : Small and Medium sized company with certain mechanical equipments
Implementation Area : Ashanti Region
Implementation period : August 2006～August 2007

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The total palm oil production increase	• Increase of palm oil production	• Total production volume	
Project Purpose Increase the yield rate of the target group	• Improvement in the yield rate.	• Inquiry about improvement •	1. The demand of palm oil does not decrease
Outputs			
1 Establish the implementation organization consisting of participating companies and research institute.	• Name of implementation organization and activities • Number of participants companies	• Agreements • Scope of work • Letter of content	1. Supply of oil palm is stable. 2. The demand of palm oil does not decrease
2 The performance of each participating company is clarified.	• The results of measurement of material balance in each company	• Comparison table of measurement results	
3 Participating companies receive the improvement plans of yield rate based on the analytical work.	• Submission of proposal • Satisfaction of recipients	• Proposal documents • Feedback from participating companies	
4 The results of research are disseminated through printed materials and workshops.	• Workshop • Printed materials	• Participants list • Feedback from stakeholders	
Activities 1-1 Hold a motivational workshop 1-2 Establish the implementation organization 1-3 Determine the detail of the program 2-1 Calculate a standard material balance 2-2 Develop measurement plans for factories. 2-3 Measure performances of factories 2-4 Make a comparison table of results. 3-1 Analyze causes of differences in results 3-2 Develop proposals for improvement of sample factories yield rate. 3-3 Propose improvement plans to factories 4-1 Hold a dissemination seminar. 4-2 Implement dissemination activities.	**Inputs** JICA Study team • Japanese experts • Operating expense - Employment costs of Ghanaian staff - Transportation and accommodation costs - Expenses of research on sample factories yield - Expenses of training, meetings, workshops - Expenses of publishing materials Ghanaian counterparts • Counter personnel • Office space, office equipment and furniture • Operating expense - Administrative and management costs		1. The government does not change the policy for the palm oil industry. **Pre-conditions** 1. Adequate no. of participant in the program

(5) Trial Program Achievements

- Major achievements and results:
  - Measurement of yield rate at 10 sample companies to understand the present situation. (4th to 5th field survey)
  - Drawing the table of measurement results (5th field survey)
  - Finding causes of low yield rate (6th field survey)
  - Making proposed measures to improve yield rate (6th field survey)
  - Improvement measures were implemented at four sample companies (7th field survey)
  - Analyzing and verifying the results of yield improvement (7th field survey)
  - Making Improvement manuals (100 copies) (7th field survey)
  - Holding the workshop for improvement of yield rate (7th field survey)

- Inputs have been made generally according to the plan and the schedule
- As for the improvement of yield that is set as the project purpose, 70% - 90% improvement was realized among micro and small enterprises.
- On the other hand, the program failed to offer a direct method to improve yield for Medium sized companies of sample companies.
- As the improvement initiatives implemented under the trial program did not involve substantial investment, their results – yield improvement and increase in production – led to the decline in per-unit production cost.
- In addition to yield, other improvement activities such as misalignment of operation lines or transportation of raw materials within the factories can help decrease the overall production cost.

(6) Lessons learned from the trial program

- Uncertainty lies in impact, which depends largely upon the method for dissemination and continuation as well as its extent.
- Collaboration with universities has significant effects, but it is subject to various restraints such as class schedule. Also, universities are not accustomed to activities like the trial program.

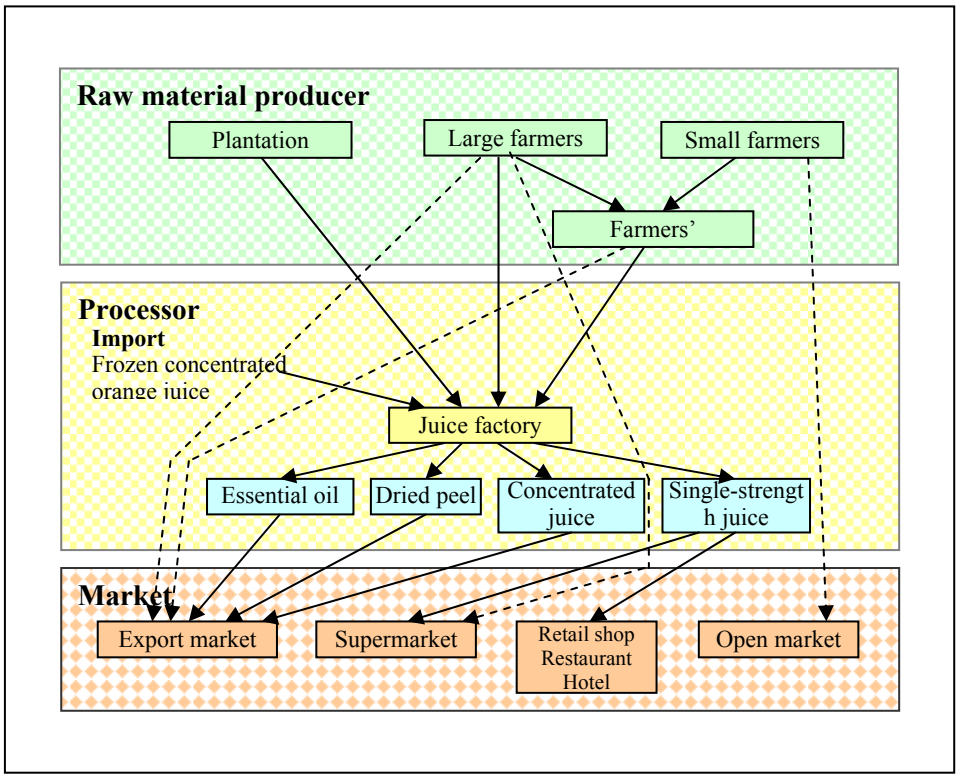
- Like the palm oil processing industry, other industries seem to face the similar situation. One reason is the lack of knowledge on production management and techniques on the management side.
- A similar program such as yield improvement can be applied to other industries. It is necessary to review other industries for adaptation.
- The program results are generally applicable to palm oil industries in other regions and can easily be disseminated by NBSSI (BAC).
- Improvement of the production system leads to sales promotion and industrial growth of the palm oil industry.

4.4 Central Region

4.4.1 Current State of the Fruit Processing Industry

(1) The Citrus Processing Industry

The supply chain of citrus in Ghana, from production of raw materials to processing and consumption is shown in Figure 4.4-1. Citrus fruits are mostly produced by farmers, whereas plantations owned by juice factories account for minimal share.



Remark: Dotted arrow shows the flow of citrus without process

Source: Prepared by the team

Figure 4.4-1 Citrus Processing Industry

There are only few citrus processing companies in the Central region because: 1) Factories usually locate near plantations in the major orange juice producing countries like the US and Brazil. However, it is difficult to purchase the same volume of raw materials to set up the large scale factory due to scattering plantations and undeveloped distribution infrastructure in the Central region. 2) It is better for a company like Tampico which uses imported concentrated frozen juice as raw material to be located a place where the factory can have access to imported materials and to the market. 3) It is difficult for small and medium scale factory to use plastic bottle because of huge investment. 4) Small and medium scale factories

can use glass bottles instead because the investment is relatively small. It is better for small and medium scale companies to locate near the large market where they can recycle glass bottles. For these reasons, although Central region had abundant raw materials, it was not attractive enough for both large and small/medium factories to set up base. On the other hand, there are more than thirty small / medium scale factories in Accra.

(2) Production of citrus and pineapples

As mentioned earlier, there are a small number of citrus producing factors in the region. For the purpose of evaluation the citrus industry's suitability for the trial project, pineapples are included as citrus.

FOA's 2005 estimate on citrus production in Ghana is summarized as follows[1].

<Orange>

- Throughout the country, orange is grown in approximately 42,000 hectares of land, from which around 300,000 tons are produced annually. The yield per hectare is 7.1 tons.
- Orange production increased by 50% over the past decade.
- Ghana accounts for 5% of total orange production in Africa and ranks fifth among other orange producing countries on the continent. It is the largest producer in West Africa.

<Lime>

- Lime is cultivated on approximately 5,000 hectares of land. Production is estimated at around 30,000 tons and the yield per hectare is 6 tons.[2]
- The production of lime has not been grown for the last decade.
- The country's share of lime production in Africa is 5% and it ranks fifth in all Africa and top in the West Africa.

<Pineapple>

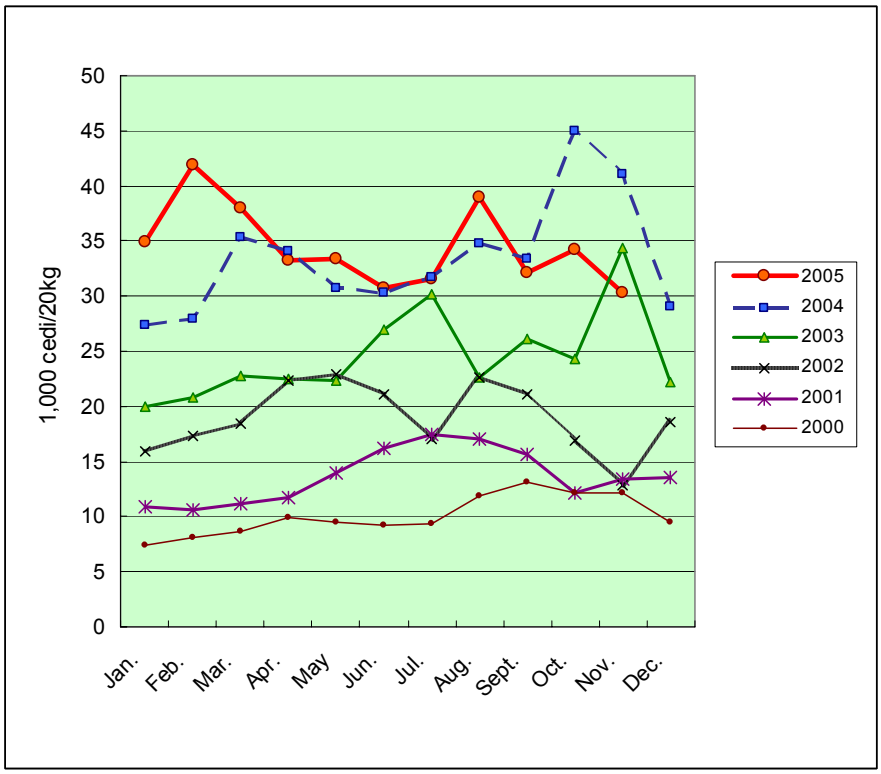
- Pineapples are grown in 10,000 hectares of land, which produce 60,000 tons annually. The yield per hectare is 6 tons.
- The country's pineapple production soared in the late 20th century but remains flat since 2001.
- The country's share of pineapple production in Africa is 2% and it ranks ninth.

[1] As of 2005; based on FAO's data, as MOFA does not have chronological data. Note that MOFA estimates Ghana's orange production at around 500,000 tons.

[2] While statistics treat lime and lemon in the same category, Ghana does not produce lemon and statistical data cover lime only.

According to MOFA's estimate, orange production in Central Region is the second largest in the country (approx. 120,000 tons), next to Eastern Region. Pineapple production also ranks second after Eastern Region, totaling 50,000 tons. 95% of orange produced in the region is Valencia[3]. Main varieties of pineapples are Smooth Cayenne and Sugar Loaf, while MD2, which features strong sweetness and long shelf life, is being propagated.

Figure 4.4-2 shows monthly trends of orange whole sales price in recent years. While it is difficult to read seasonal patterns from the graph, prices drop during the harvest season between December and next May, according to juice factories.



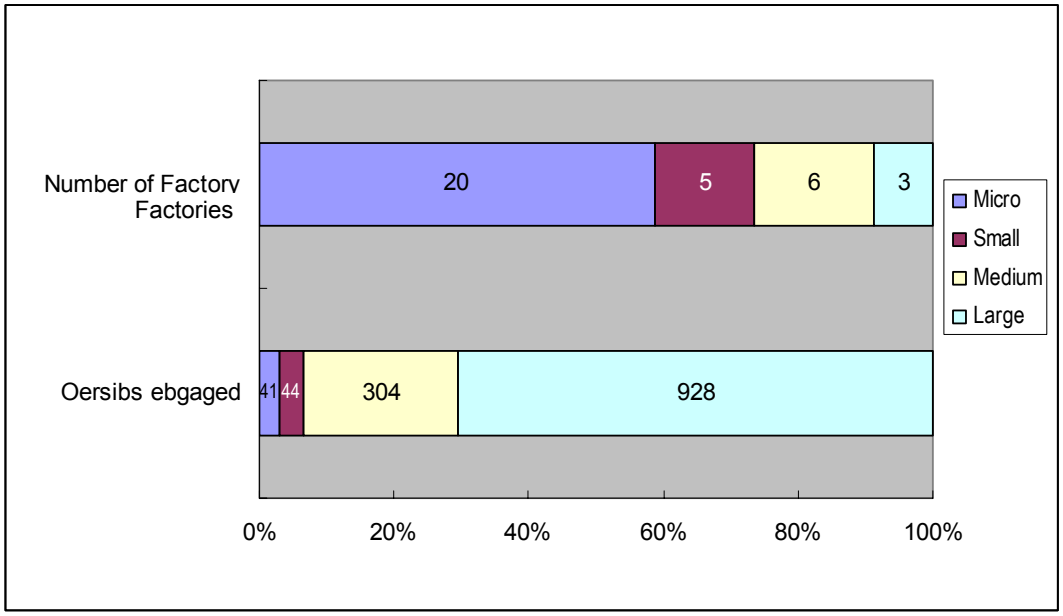
Source: Prepared by the team based on MOFA's data

Figure 4.4-2 Wholesale Price of Orange

[3] The peak harvest season for Valencia (95%) is between December and next May, Sweet Meditarian (3%) in October and November, and Spain Meditarian (2%) in June and July.

(3) Composition of juice factories

The industrial survey reveals that there are 32 fruit and vegetable factories throughout the country, which employ 1,327 persons[4]. As pointed out earlier, 11 of them are said to be located in Central Region and only a few of them are juice factories. Figure 4.4-3 shows composition of fruit and vegetable factories by size of establishment and the number of workers[5]. Note that the three largest factories account for 70% of total persons engaged, suggesting the industry's polarized structure.



Source: Industrial Census 2003

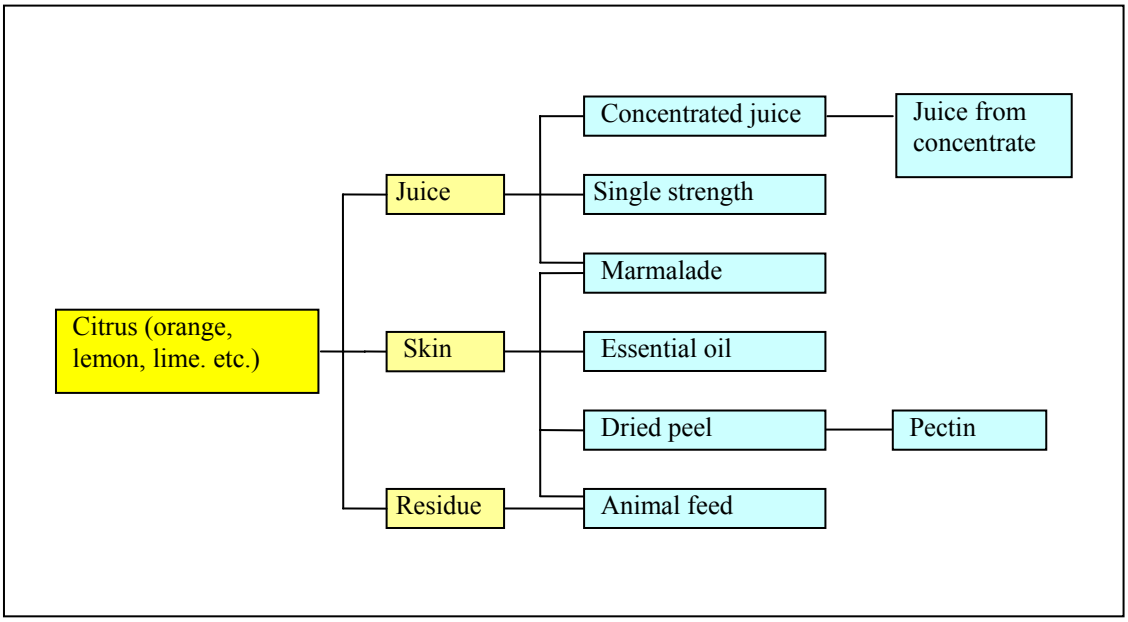
Figure 4.4-3 Composition of Fruit/Vegetable Factories by Size and Persons Engaged

(4) Juice manufacturing process

Figure 4.4-4 shows a conceptual view of citrus processing in terms of major products/by-products.

[4] They are officially classified as "factories processing fruits and vegetables," which products include, ketchup, jam and banana chips, in addition to juice. Note that they do not probably include informal, family-operated shops that make banana chips.

[5] In Ghana, companies are classified into different sizes in terms of the number of employees and the value of fixed asset (for instance, "Ghana Integrated Industrial Policy for Increased Competitiveness," Sept. 2002). For the purpose of this study, companies with five employees or less are denoted as microenterprises, those with 6 – 29 employees as small enterprises, those with 30 – 99 employees as medium-sized enterprises, and those with 100 or more employees as large enterprises. Furthermore, as the industry survey counts individual factories rather than companies, the present study classifies the former according to the number of employees. This classification rule applies to the rest of the report.



Source: Prepared by the team

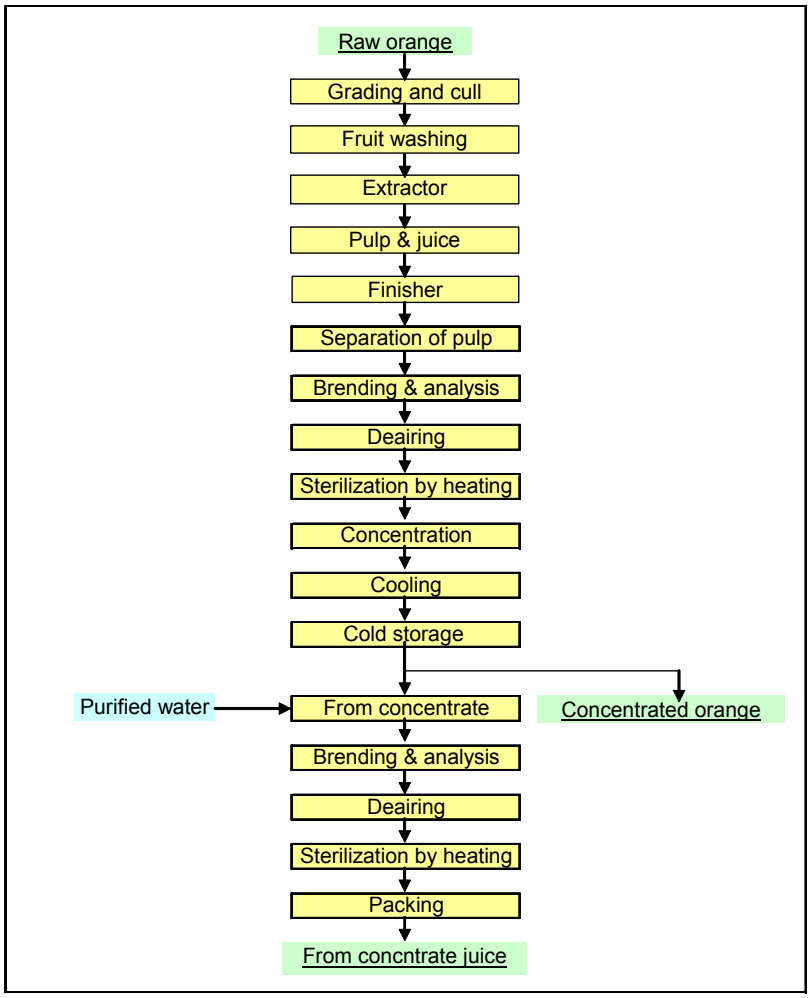
Figure 4.4-4 Process Expansion of Citrus

As citrus fruits can generally be harvested in a certain season, they are purchased and processed in the season – during which price is low – to produce concentrated juice (by six times) that is frozen for storage. During the pre-harvest months, juice is produced by adding water to the concentrated juice. On the other hand, the concentrated juice is largely distributed for export and import because of a lower transportation cost than single strength[6].

The orange juice manufacturing process of a large factory is summarized in Figure 4.4-5. One ton of Valencia orange produces approximately 400kg of raw juice (before concentration), which is concentrated through a vacuum, heating evaporator by weight ratio of 1 : 5.7, to produce and freeze 70kg of concentrated juice for storage.

The above process produces various by-products, mainly pectin and dried peel. Pectin is extracted from the peel but the extraction process requires a large amount of investment, together with large energy consumption and delicate production control, making it difficult for small factories to produce. The break even point is said to be the annual orange consumption of 30,000 tons or over[7]. Instead, small factories sell dried peel for pectin production or dairy cattle feeding by drying the peel in the sun to reduce water content from 80% to 10%.

[6] It refers to the juice that has been sterilized after being squeezed from fruits, without concentration.
[7] "Principles and practices of small- and medium-scale fruit juice processing," 2001, FAO

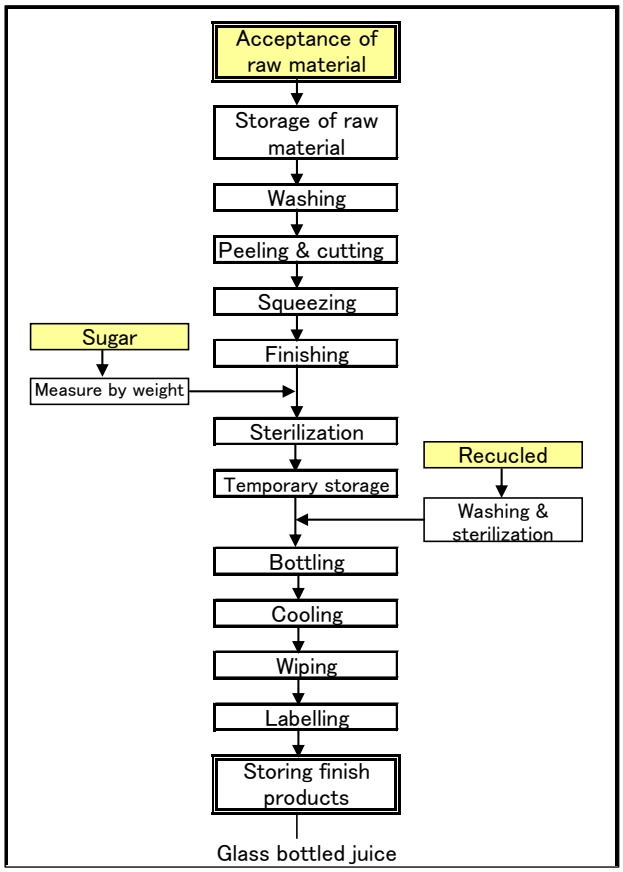


Source: Prepared by the team

Figure 4.4-5 Orange Juice Processing

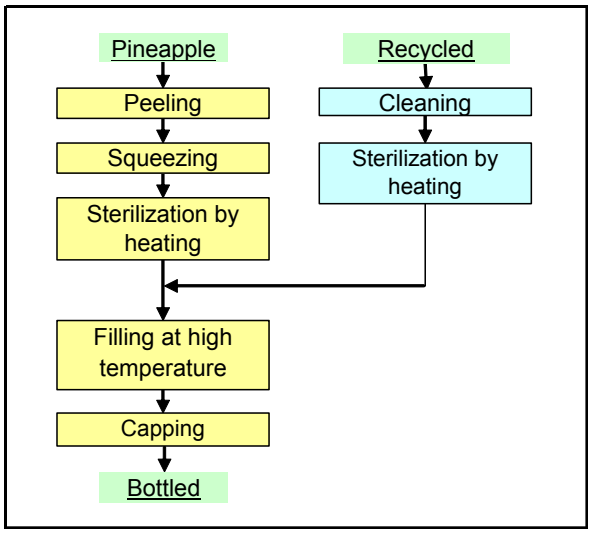
Figure 4.4-6 shows a pineapple juice manufacturing process applicable to small factories. Cleaning of raw materials, peeling and cutting are done manually, while squeezing and sterilization are done by batch type small machines. The most significant difference from a large scale company is bottling. Normally large companies use unreturnable pet bottles while small to medium sized companies use returnable glass bottle.

Figure 4.4-7 indicates pineapple juice process in a small scale factory.



Source: Prepared by the team

Figure 4.4-6 Orange Juice Processing in a Small Scale Factory



Source: Prepared by the team

Figure 4.4-7 Pineapple Juice Processing in a Small Scale Factory

(5) Market for processed fruit products

There is no data on the domestic market for processed orange and pineapple products. Based on estimates made by several manufacturers, the domestic market for orange juice is approximately 22,000 tons.[8] Supply and demand for the fruit products is estimated from balance of supply and demand as shown in Table 4.4-1.[9]

As seen in the table, orange demand is largely satisfied by domestic production and both export and import are small. By contrast, 83% of pineapples produced in the country is exported without processing. Only 25% of orange within the country goes to processing.

Table 4.4-1 Demand and Supply of Fruit and Processed Fruit

(Unit: ton)

			Orange	Pineapple
Demand & supply of raw fruit	Production		300,000	60,000
	Domestic supply		302,193	10,140
	Waste		30,000	6,000
	Domestic consumption	Raw diet	204,193	n.a
		For processing	68,000	n.a
		Sub-total	272,193	4,140
Trade of fresh fruit and processed fruit	Fresh fruit	Import	2,340	31
		Export	147	49,891
	Concentrated juice	Import	291	
		Export	0	
	Single-strength juice	Import	189	105
		Export	45	1,625

Source: Prepared by the team based on FAO's data and team's estimation

Orange and pineapple juices are not widely bought on the open market, but they are usually available at retail stores, hotels, and restaurants that own refrigerators. As for supply chain, the majority of juice is supplied directly from producers to retailers without involvement of wholesales or brokers. The largest juice manufacturer in the country operates under license from an American company and uses imported, concentrated juice. The sales margin is 10% - 15% for retailers and 40% - 45% for hotels and restaurants.

[8] It is converted into single-strength volume.
[9] FAO; fresh fruit supply and demand data in 2003 and trade data in 2004.

(6) International trade of juice

Worldwide trade of orange and pineapple juices in recent years is summarized in Table 4.4-2.

Table 4.4-2 Trade of Orange Juice and Pineapple Juice

(Unit: ton)

		2002		2003		2004	
Orange juice	Concentrated	1,740,160		1,755,350		1,754,514	
	Single-strength	1,881,479		2,471,414		2,561,819	
Pineapple juice	Concentrated	62,613		245,697		91,794	
	Single-strength	348,174		453,410		445,604	
Main exporter of Concentrated orange juice		Brazil	58%	Brazil	60%	Brazil	58 %
		Belgium	17%	Belgium	19%	Belgium	23 %
		USA	11%	Spain	5%	Spain	5%
Main importer of concentrated orange juice		Belgium	14%	USA	19%	Belgium	21 %
		USA	13%	Belgium	19%	USA	12 %
		Japan	4%	Japan	4%	UK	9%

Source: Prepared by the team based on FAO's data and Statistic of Japanese trade

Major findings from the table are as follows.

- Orange juice trade is approximately 13 times as much as pineapple juice trade.[10]
- As for orange juice, concentrated juice is nearly four times as much as single-strength. On the other hand, there is no significant difference between the two for pineapple juice.
- While trade volume of concentrated juice remains more or less flat, that of singe-strength juice increases steadily probably because of better flavor.[11]
- Main exporters of concentrated orange juice are limited to several countries, led by Brazil. On the other hand, main importing countries are diverse.
- Belgium holds large share as it provides intermediary service for orange juice trade.
- Although not in the table, exporting countries of single-strength juice, where transportation cost is relatively high, are fairly diverse[12] and geographical proximity

[10] Converted into single-strength juice.
[11] Orange juice increased by 110% over the past decade, and pineapple juice by 61%.
[12] For instance, Brazil represents only 22% of world single-strength orange juice export.

to major importing countries constitutes an advantage, such as Spain and Switzerland.

In addition, as for African import market of orange and pineapple juice, it is less than 1% of world trade volume.

4.4.2 Problem Analysis and Summary of the Trial Program

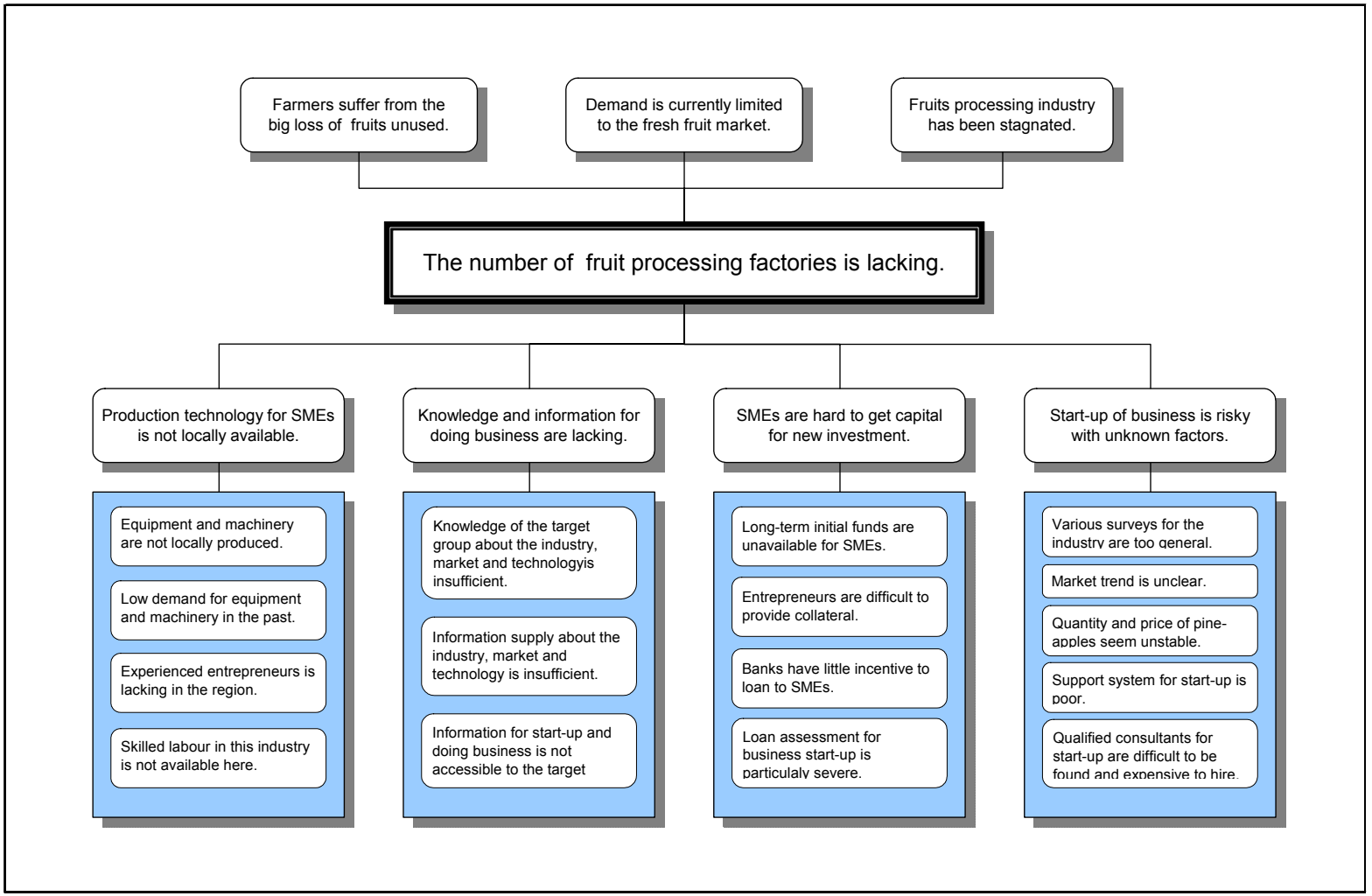
The detail of four trial programs (TP) is explained in the separate volume called "Trial Program Implementation Report". In this study, implementation of TPs delivered many lessons for making the master plan and action plans. In this section, for consistency, completeness and convenience for readers, the summary and results of TP is presented.

(1) Problem analysis

At a workshop conducted on 6 June 2006, the core problem and their causes were identified. They were compiled into a problem tree shown in Figure 4.4-8.

During the problem analysis workshop, the core problem is set as "The number of fruit processing factories is lacking" and the direct causes identified by participants were classified into the following factors.

1) Production technology for SMEs is not locally available.
2) Knowledge and information for doing business are lacking.
3) SMEs are hard to get capital for new investment.
4) Start-up of business is risky with unknown factors.



Source: Prepared by the team

Figure 4.4-8 Problem Tree of the Citrus Processing Industry in the Central Region

(2) SWOT Analysis

Based on problem analysis, literature survey and company visits, the team compiled the SWOT analysis shown in Table 4.4-3. The important factors for designing the TP are listed below.

Strength

- Easy access to large market such as Accra and Kumasi
- Easy access to raw materials

Weakness

- Domestic demand for processed products is not clear
- No appropriate locally made machinery in terms of capacity and price
- Luck of skilled person

Opportunity

- Possibility to export to neighboring countries
- Increasing demand of fruits encourage breed improvement
- Some students are willing to start a processing plant

Thread

- Importing better quality products with lower price
- Increasing damage of Medfly

Due to the limitation of time, budget and human resources, it is not possible to take up all issues during the TP. The team determined that it is difficult to implement the program to assist processing companies because there were very few citrus processing companies. The remaining important issue was entrepreneurship. The team prepared TP based on the opinions of counterparts and the target industry needs.

Table 4.4-3 SWOT Analysis: the Citrus and Pineapple Processing in the Central Region

	Market	Production / Technology	Raw materials	Human Resource	Development capability	Business Environment
STRENGTHS	• Easy access to large market such as Accra and Kumasi.		• Abundant on orange and pineapple • Price is low during the peak season. • Easy access to raw materials	• Abundant labor force • FRI provides basic knowledge of processing.		• Growing interests in fruits processing from local authority. • Support from professors and students in Cape Coast University (Dept. of Management Studies).
WEAKNESSES	• Domestic demand for processed products is not clear. • The product specification which is accepted by the market is not known.	• No appropriate locally made machinery in terms of capacity and price. • No manufactures specialized in this sector.	• Price fluctuation of raw materials may cause difficulties for processors to get necessary amount of raw materials.	• Luck of skilled person in areas of marketing, finance and production.	• Luck of product development capability	• Luck of own fund for business start-up. • Difficulties in borrowing money. • Troublesome procedure for business start-up. • Performance of a few operating processor in the region discourage the processing business.
OPPORTUNITIES	• Possibility to export to neighboring countries with improved quality and package.		• Increasing demand of fruits encourage breed improvement.	• Some students are willing to start a processing plant.	• GRATIS has the plan to develop machineries for SMEs.	
THREATS	• Importing better quality products with lower price.					• Unstable packaging material supply • Unstable electricity and water supply.

(3) Selection of the trial program

At the problem analysis workshop, the small number of fruit processors was raised as a core problem. The major cause, as pointed out there, was a large risk to start up fruit processing business due to the lack of information required for making an investment decision. In response, the team proposed to carry out a feasibility study for fruit processing.

Program: Feasibility study on construction of the citrus processing factory in the Central Region

The team checked directly with the local citrus and pineapple producers' association and confirmed their expectation for the construction of a fruit processing factory. While Central Region is known for the production of oranges and pineapples, producers are often forced to sell them at low prices due to limited local demand. Because of this, they hope the presence of a fruit processing factory would be ready to purchase their fruit products regularly.

Generally, the fruit processing industry can enjoy various advantages when it is located near the source of raw materials, i.e., the transportation cost can be saved significantly as processing near the source reduces the volume of fruits to one third that in the case of remote processing. Besides, fresh juice can be produced because fruits can be processed soon after their harvesting. In addition, loss due to rotting or moisture evaporation can be minimized. Moreover, local processing offers a great advantage for Ghana where the means of transportation is limited and costly.

(4) Outline of Trial Program

The outline of the trial program is described in Table 4.4-4.

1) Purpose: Increase potential investors for fruit processing factories
2) Expected Output

a) Marketability of the product is clarified in size, channels and prices.
b) Suppliabilty of raw materials in the Central Region is clarified.
c) Specifications of products, production capacity and a factory site are determined for F/S.
d) Production facilities are designed as a module factory.
e) Project cost and operation costs are summarized.
f) Project implementation plan is finalized.

Table 4.4-4 Project Design Matrix — Central Region Citrus and Pineapple Processing Industry

Name of trial program : Feasibility study on construction of a fruit processing factory
Target group : Local stakeholders interested in building the fruit processing factory
Implementation Area : Central Region
Implementation period : August 2006～August 2007

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Increase total production of local fruits industry	• Production volume	• Statistics	
Project Purpose Increase potential investors for fruit processing factories	• New investment of fruits processing in the region	• No. of investment	1. Fruits production does not decrease.
Outputs			
1 Establish the local organization to implement F/S.	• Organization members and activities	• Organization chart	1. Domestic economy does not change dramatically. 2. Exchange rate is stable.
2 Clarify domestic and local demands and sales distribution	• Amount of demand and distribution channel	• Report	
3 Clarify sources of raw materials and these prices	• Amount of raw material available and price range	• Report	
4 Decide specifications of products, production capacity and a site proposed	• Specifications, production capacity and plant site	• Report	
5 Clarify the equipments and plant plan	• List of equipments and layout of plant	• Report	
6 Clarify costs of construction and operation	• Costs of construction and operation	• Report	
7 Reveal the result of financial analysis with the sales plan	• Financial analysis • Sales plan	• Report	
8 Realize the investment plan	• Investment promotion plan • Name of potential investors	• Report • List	
Activities (1)-1 Establish a feasibility study (F/S) execution committee (1)-2 Prepare an F/S execution plan (1)-3 Assign Institutions responsible for tasks in F/S (2)-1 Execute demand survey and marketing channel survey (2)-2 Execute test marketing if possible (3)-1 Execute raw material survey (3)-2 Investigate farmer's associations about suppliability and intensions (4)-1 Determine a product(s) with specification to produce (4)-2 Determine a production capacity as a module factory (4)-3 Determine a factory site for the feasibility study (5)-1 Design an appropriate process and estimate machinery costs (5)-2 Design and estimate auxiliary and off-site facilities (6)-1 Estimate and summarize the total project cost (6)-2 Estimate and summarize the operating cost (7)-1 Make sales and revenue plan (7)-2 Project financial statements and analyze financial indicators and ratios (7)-3 Prepare a feasibility report (8)-1 Promote the envisaged project to potential investors (8)-2 Propose the organization for the new business (8)-3 Make decision on execution of the envisaged project	**Inputs** JICA Study team • Japanese experts • Operating expense - Employment costs of Ghanaian staff - Transportation and accommodation costs - Expenses of training, meetings, workshops - Expenses of training materials Ghanaian counterparts • Counter personnel • Office space, office equipment and furniture • Operating expense - administrative and management costs		1. Any crucial problem to make the processing plant is not found. **Pre-conditions** 1. Possibility of investment is very low. 2. Market for processed fruits exists.

(5) Achievements of the trial program

- Major achievements and results:
  - Implementation of Local material survey (25 associations, 99 farmers in 5 districts) (4th to 5th field survey)
  - Implementation of demand survey for pure fruits juice (82 distributors, 34 restaurants & hotels, 22 schools) (4th to 5th field survey)
  - Setting the product specification and production capacity (4th to 5th field survey)
  - Determining production facilities and the factory layout (5th field survey)
  - Calculation of costs of construction and operation (5th to 6th field survey)
  - Execution of Financial feasibility study (6th field survey)

- Input of the team in the sixth field survey was reinforced (i.e., addition of team members) to allow the feasibility study to be completed according to the original schedule. Thus, outputs have also been produced according to the plan.

- The project purpose was set for promotion of investment in the citrus fruit processing industry by publishing the feasibility study report. As the program was materialized, it was able to attract DA's attention and several potential investors expressed interest.

- Nevertheless, it takes some more time to attract investment actually. It is therefore very difficult to expect investment decisions during the program period.

(6) Lessons learned from the trial program

- New investment is essential in development of local industries, but support for existing industries can be easily focused because issues are clearly identified.

- It takes considerable time and effort to obtain valid information. Information access should therefore be incorporated into a permanent mechanism to promote investment and industry development.

- Notably, it was very difficult to obtain information on machinery and equipment required for factory operation, as well as packaging materials. A few potential investors who want to start the juice plant are facing similar problems.

4.5 Northern Region

4.5.1 Current State of the Shea Butter Industry

Shea butter is vegetable fat that is extracted from the nuts (more precisely the kernels, however, words "shea nuts" are used in this report) of the shea trees that grow naturally in the tropical and savanna regions of West Africa. It has been traditionally consumed in the shea tree growing areas as edible oil because of high fat content.

According to SNV's Sub-sector Analysis, the shea tree ceases to grow at the height of around 6m when it is located near a slash-and-burn area (under shifting cultivation). On the other hand, when protected from the fire, it grows to 15m on average and even over 20m. It takes more than 15 years until a shea tree produces nuts. Shea trees bloom in early November and shea nuts are harvested and collected between May and August. After drying and storage, shea butter is produced in each compound between November and March. Generally, women in rural villages are engaged in harvesting of shea nuts and production of shea butter, serving as an important source of income for farmers. In Ghana, the northern three regions (Northern, Upper West, and Upper East) are major shea nut producers and produce a large amount of shea butter.

(1) Structure of shea butter industry

Shea nuts collected and processed primarily by women are directly sold to companies and are sold in local markets. Production groups led by women purchase shea nuts in cash in the local market and produce shea butter from it, and consume it by themselves or they sell it in the local market in order to earn money to purchase shea nuts (See Figure 4.5-1). Partly because demand is limited, the sales price seems to be at an around break-even level. According to women's groups visited by the Team, shea butter prices are far from uniform. In particular, the unit price per kilogram varies greatly because shea butter is sold in a container called the calabash which resembles a gourd. Note that shea butter prices vary according to shea kernel unit prices that fluctuate throughout the year.

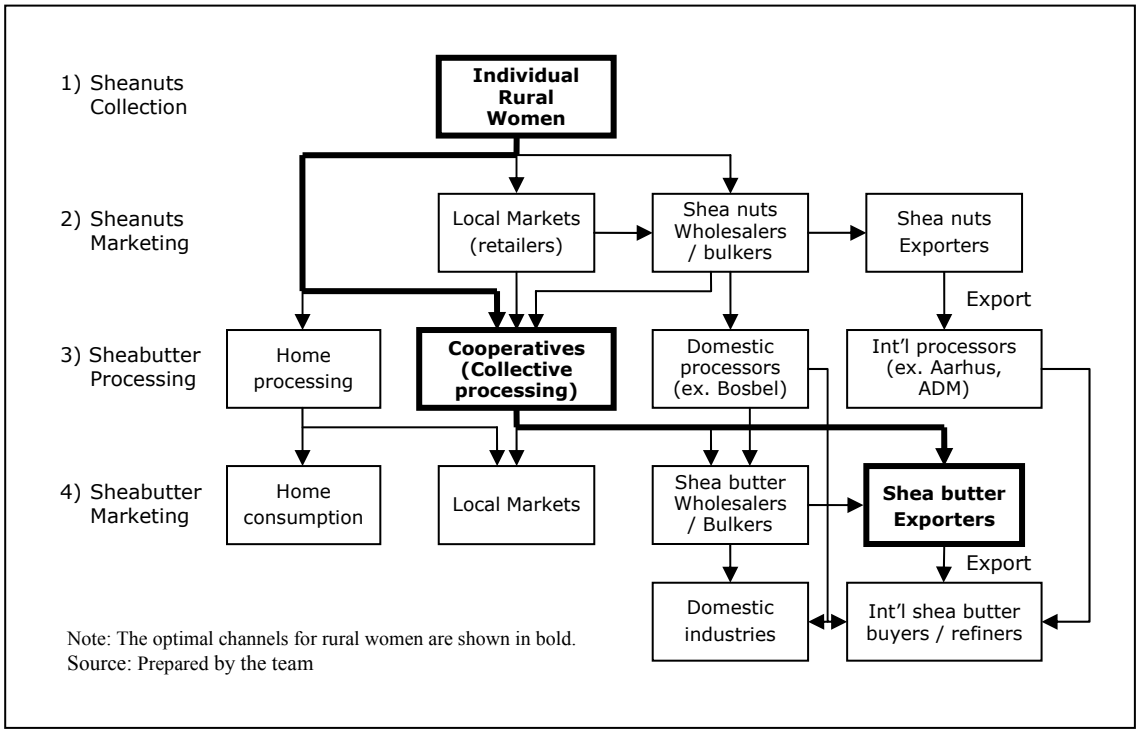


Figure 4.5-1 Shea Butter Industry[1]

According to the results of a survey conducted by an NGO which is called Africa 2000, the shea butter cost structure is summarized as follows.

Table 4.5-1 Shea Butter Production Cost

INPUT	Unit:¢
A bag of shea-nut (85-90kg)*	150,000～250,000
Water	5,000
Fuel wood	30,000
Grinding mill costs	30,000
Labor (average of 10hr. @¢3,000)	30,000
Total	245,000～345,000

Note: Price changes from the peak season to the lean season.
Source: Africa 2000

As seen in the table, the raw material (shea nut) cost accounts for 66% - 72% of the total. Assuming that the extraction rate is 30%, approximately –25 -27 kg of shea butter is produced

[1] Bulker is a domestic broker which purchase shea nuts or butter from woman groups and sell them in bulk to exporters

from 85 - 90kg (one bagful) of shea nuts and the cost to produce one kilogram of shea butter ranges between 5,500 ¢ and 10,000 ¢ (in US dollar , ranges US$0.60 – US$1.10, however, actual market prices are often lower than the costs.) Yet it is difficult to say with the aforesaid remark whether shea butter is a profitable business partly because shea nuts are largely collected by producers themselves and then, the bulk of shea butter is consumed by producers themselves, not to mention the influence of unstable shea nut prices. Nevertheless, it is currently producing a small profit, and stable supply of shea nuts and the improvement of the extraction rate will benefit producers significantly.

In Ghana, there are five oil and fat manufacturers that operate on a commercial basis, and they export crude butter to leading European manufacturers for further refining, as discussed earlier, although quantity is small. Recently, the above manufacturers purchase or attempt to purchase crude butter from women's groups for export after refined by the manufacturers. However, there are quality problems relating to the crude butter, which prevent volume exports.

Finally, the above sales channels account for small portions of crude butter distributed in the country. Thus, distribution through an extensive marketing channel is rather limited. In addition, women collecting nuts and producing butter manually are not organized and cannot earn sufficient income for their hard work due to market access and negotiation problems.

(2) Production of Shea butter

There are roughly three methods for producing shea butter. The first method is traditionally adopted by women's groups. Shea kernel is immersed in water to separate oil content. As it can produce shea butter by using a simple tool, the method is widely employed in West Africa. However, producing shea butter by this method causes unstable quality. The quality standard of shea butter is mentioned below.

Table 4.5-2 GSB Standard

	Grade 1		Grade 2		Grade 3	
	Min	Max	Min	Max	Min	Max
Moisture (%)	--	0.05	>0.05	0.2	>0.2	2.0
FFA (%)	--	1.0	>1.0	3.0	>3.0	8.0
Peroxide (mEq/kg)	--	10.0	>10.0	15.0	>15.0	50.0
Impurities (%)	--	0.09	>0.09	0.2	>0.2	2.0

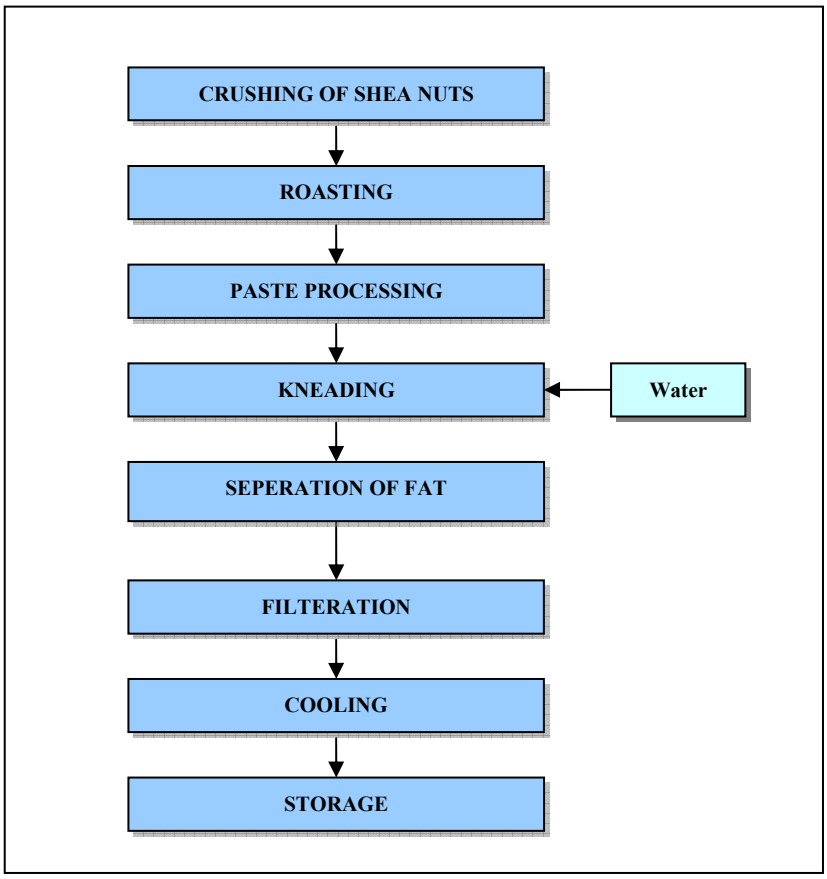
(Grade 1 for cosmetics, Grade 2 for edible oil, Grade 3 for soap making)
Source: Ghana Standard GS 238: 2006

The above table indicates the quality specification; however, quality indication of local market is different from that of the export market. Quality indications used in the local market, especially open-air market are odor, taste and texture. On the other hand, the quality specifications required by buyers are almost same as the GSB standard but they do not require quality of Grade 1 rigidly. Since users can remove moisture and impurities, buyers require products with quality of less free fatty acid.

The second method uses a screw press (expeller) which is good for medium-sized production. It can achieve the extraction rate of 40% - 50% in comparison to 25% - 30% for the manual method. In addition, it can assure stable quality as it has no roasting process, i.e., an undesirable color and odor can be eliminated. Because of machine-based production, the labor cost can be reduced substantially. Shea butter produced by the method seems to be entirely exported. While the method offers volume production capability, no company seems to be specialized in production of shea butter due to insufficient demand. Thus, shea butter is produced by companies that also make other edible oil and fat products. The labor saving feature produces an adverse effect on poverty reduction because women in rural areas lose important income source.

The third method uses a solvent to extract shea butter. The large-scale production usually adopt this method. The extraction rate is high at 60% - 70% and product quality is stable. In terms of shea butter equivalent, this method seems to produce the largest quantity among other methods. However, production is carried out in foreign countries and does not bring foreign currency earning to Ghana as compared to other methods. In addition, use of the solvent is said to eliminate trace active ingredients contained in shea butter, including substances that are antioxidation or have a medical effect. As a result, shea butter used for production of CBE (Cocoa Butter Equivalent) is made by the second or third method, while that for production of natural cosmetics is made by the first method.

The production process employing the first method in Northern Ghana is illustrated below.



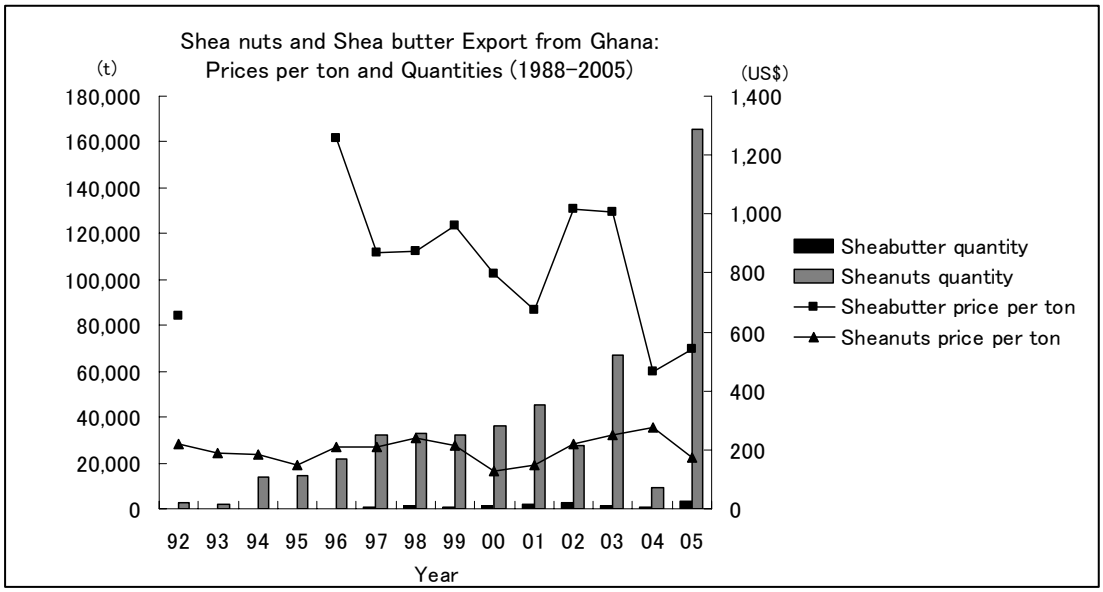
Source: USAID Shea Butter Value Chain Production

Figure 4.5-2 Shea Butter Processing

To reduce manual work of the first method, simple machines are introduced in some processes. They have been donated by grant aids, NGOs or government organizations. There are cases that these machineries are left derelict because women's groups do not have enough funds to fix the machine after machineries get damage by heat and vibration. Notably, kneading machines are not capable of making fine adjustments on water volume and temperature, and some prefer manual work by skilled women.

(3) Shea nuts and butter export

Export volumes and prices of shea nuts and shea butter were presented in Figure 4.5-3. While the price of shea butter fluctuated dramatically, the price of shea nuts had been stable for last 14 years. The volume of shea butter export was quite small comparing with that of shea nuts.



Source: Ghana Export Promotion Council (provided in December 2006)

Figure 4.5-3 Shea Nuts and Butter Export

Other West African countries that export shea nuts in large quantities are Burkina Faso, Benin, Cote d'Ivoire, Nigeria, Mali, and Togo.

Shea nuts are mainly imported by oil and fat manufacturers in Europe. They produce shea butter that is used as CBE. Leading manufacturers are Aarhus of Denmark, Fuji Oils of Japan, Karlsham of Sweden, and Loders Croklaan of the Netherlands. While CBE demand is said to be stable, it may increase due to the progress of EU integration to allow more countries to use CBE.

Another market is cosmetics. Historically, shea butter has been used in the region as moisturizing cream. It has attracted attention of European and American manufacturers of natural cosmetics, who have started to import shea butter that was handmade in West Africa. The most famous brands are Body Shop and L'Occitane (imported from Burkina Faso) and are used for production of soaps and lotions.

According to local information, shea butter demand in the international market is on the rise, although specific data are not available[2]. Nevertheless, demand is not fully met due to quality or delivery problems. As production information in Ghana is difficult to obtain

[2] Reasons for increase demand in the export market are increase of Inquires to NGOs for purchasing shea butter, more visits of buyers to butter producers and higher volume of purchase.

outside the country, it is difficult to match demand with supply. Under these circumstances, efforts are being made to build up a supply chain as part of development assistance projects, such as the USAID (West Africa Trade Hub (WATH)) and JETRO. Under a JETRO-assisted project, a shea butter-based soap factory has been constructed in Tamale and production is underway. The product was promoted at the Africa Fair that was held in Japan under JETRO's sponsorship.

4.5.2 Problem Analysis and Summary of the Trial Program

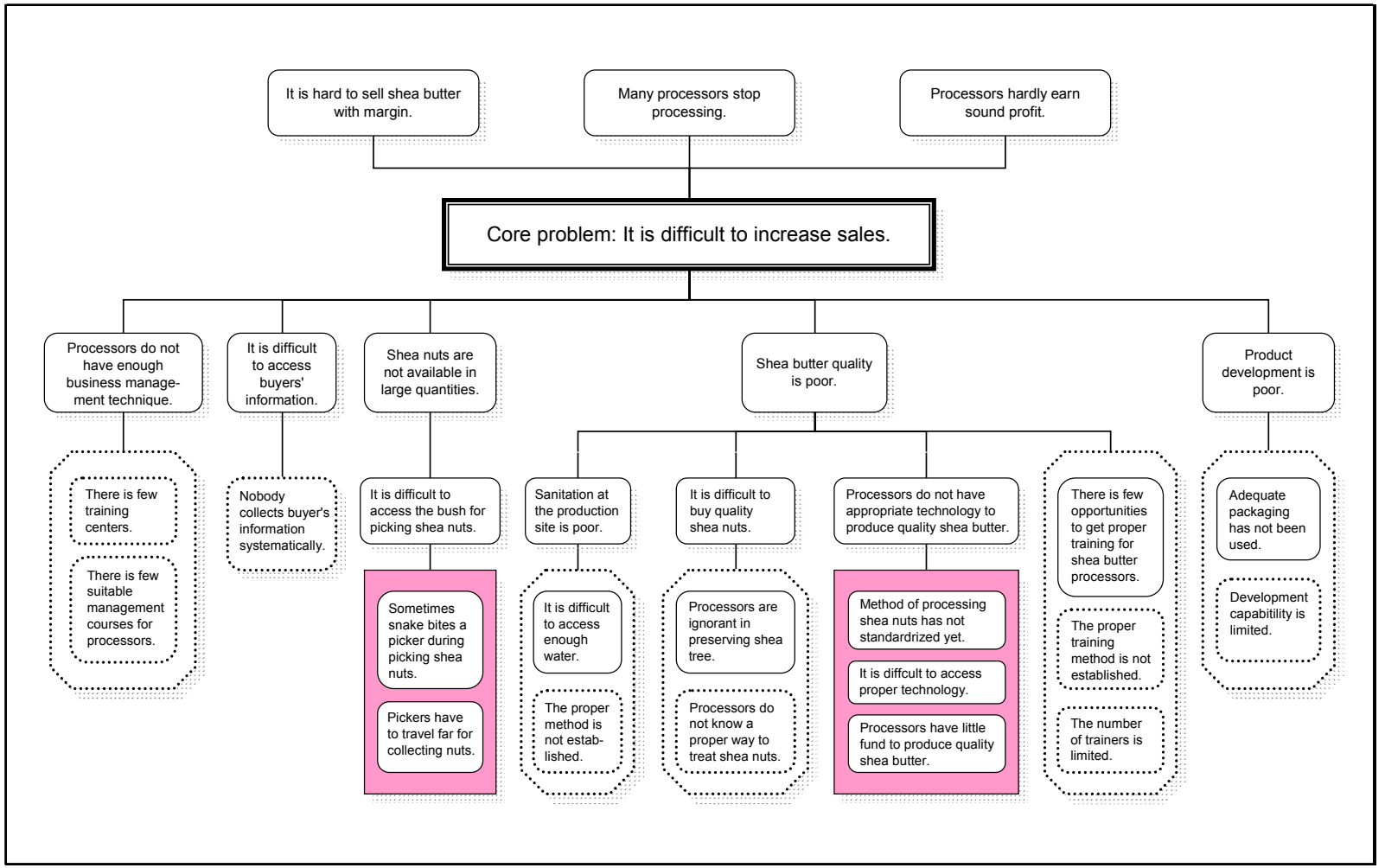
The detail of four trial programs (TP) is explained in the separate volume called "Trial Program Implementation Report". In this study, implementation of TPs delivered many lessons for the making master plan and action plans. In this section, for consistency, completeness and convenience for readers, the summary and results of TP is presented.

(1) Problem analysis

At the workshop conducted on 3 June 2006, the core problem and their causes were identified. They were compiled into a problem tree shown in Figure 4.5-4.

During the participatory problem analysis, the core problem was set as "It is difficult to increase sales" and the direct causes identified by participants were classified into the following factors.

1) Processors do not have enough business management technique.
2) It is difficult to access buyers' information.
3) Shea nuts are not available in large quantities.
4) Shea butter quality is poor.
5) Product development is poor.



Source: Prepared by the team

Figure 4.5-4 Problem Tree of the Shea Butter Industry in the Northern Region

(2) SWOT Analysis

Based on problem analysis, literature survey and company visits, the team compiled the SWOT analysis shown in Table 4.5-3. The important factors for designing the TP are listed below.

Strength

- Stable demand of shea butter as eligible oil in northern Ghana
- Northern Ghana belongs to shea nuts belt
- Flexibility of conventional production

Weakness

- Stagnated domestic sale of shea butter
- Unstable product quality
- Unstable harvest

Opportunity

- Possibility of expanding domestic and foreign market
- Improvement of process and quality control may increase quality and quantity
- Room to increase cultivation of shea nuts

Thread

- Competition against other shea butter producing countries
- Sudden depletion of shea nuts

Due to the limitation of time, budget and human resources, it is not possible to take up all issues during the TP. The team determined that product development and improvement of domestic market are too large to be implemented and difficult to produce certain results within the time frame of the TP. The remaining important issues were human resource development and technology upgrade. The team prepared TP based on the opinions of counterparts and the target industry needs.

Table 4.5-3 SWOT Analysis: the Shea Butter Industry in the Northern Region

	Market	Production / technology	Raw material	Human resource	Development capability	Business environment
STRENGTHS	• Stable demand of shea butter as eligible oil in northern Ghana.	• Flexibility of conventional production	• Northern Ghana belongs to shea nuts belt	• Abundant work force.		• Foreign Donors and NGOs can assist shea butter processing.
WEAKNESSES	• Usage of shea butter is limited in other regions. • Stagnated domestic sale of shea butter.	• Unstable product quality • Lack of technical knowledge.	• Shea tree plantation is difficult. • Unstable harvest • Risky and hard work of harvesting.	• A little chances of training. • Lack of skill and knowledge of shea butter processing	• Lack of development capability. • A few companies produce shea butter related products.	• Lack of funds for mechanization and sales promotion.
OPPORTUNITIES	• Possibility of expanding domestic and foreign market by improvement of package. • Growing interests in developed countries.	• Improvement of manufacturing method and quality control increase quality and quantity.	• Room to increase cultivation of shea nuts (only half of available fruits are collected)		• Research efforts in University/research institute	• Promotion of central and local government for shea butter development.
THREATS	• Demand of local made shea butter grows at a sluggish pace. • Competition against other shea butter producing countries may become intense.	• Improvement is difficult due to adhering to conventional method.	• Sudden depletion of shea nuts	• Work of women's groups can be replaced by cheap and mechanized manufacturing.	• Existing research institute shift the study focus to other products.	

(3) Selection of the trial program

At the workshop (problem analysis) in June, the quality issue was raised by many participants. In particular, "poor quality of shea butter" was pointed out as a major cause for poor sales. Then, causes for poor quality were cited, including "lack of appropriate technology" and "lack of training." In fact, the Team confirmed from vendors in the local markets that shea butter of good quality was sold well. Meanwhile, shea butter processors are not much aware of product quality. Those processors lost buyers' confidence because there are cases of mixing water or additive to increase product volume. On the other hand, "production volume and product quality can be upgraded by introducing proper production method and quality management" was pointed out in SWOT analysis. Considering these, the team decided to formulate codes of practice to improve the quality of the product.

Program: Standardization of shea butter processing

As shea butter is made in each community, if quality improvement leads to sales growth and then price rise, it will create positive impacts on beneficiaries. The need for quality improvement was also confirmed by buyers and experts.

As a quality standard for shea butter products was already introduced, the Team chose to establish a process standard in compliance with it with view to securing sustainability. However, as it became apparent that the implementation time constraint would make it very difficult, it was decided to select a best practice for production of shea butter with quality levels demanded by the market. Later, the team would disseminate it to each community.

(4) Outline of Trial Program

The outline of the trial program is summarized in Project Design Matrix (PDM) shown in Table 4.5-4. The purpose and outputs are as follows:

1) Purpose: Standardized process is promoted in the region
2) Expected Output
   a) The qualities required by each market are clarified.
   b) The standard operation (codes of practice) to produce the required quality shea butter is found.
   c) The dissemination system of codes of practice and quality management method is prepared.

Table 4.5-4 Project Design Matrix — Northern Shea Butter Industry

Name of trial program : Standardization of Shea butter processing
Target group : processing groups
Implementation Area : Northern Region
Implementation period : August 2006～September 2007

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Increase the sales amount	• Sales expansion	• Total sales volume	
Project Purpose Standard process is promoted in the region	• Code of practice is used widely. • Improvement of shea butte quality in the region.	• Inquiry • Test samples	1. Shea butter market does not change dramatically.
Outputs			
1 Clarify the quality required in the market	• Specification required by buyers • Items concerned by consumers	• Specifications and items in the report	1. Shea butter business does not change dramatically.
2 Find out the code of practice to produce the required standard product	• The code of practice • Quality management method	• The Code of practice • Management method	
3 Disseminate code of practice and quality management method	• Method of dissemination • Number of resource person participate	• Manuals • Participant list	
Activities (1)-1 Select a surveyor for marketing survey and decide the content (1)-2 Execute the market survey to determine product qualities by markets (1)-3 Determine the target quality specifications (2)-1 Assign an institute responsible for making code of practice (2)-2 Research on participating processing groups to identify process and quality (2)-3 Find out the best practice among above groups and investigate better production conditions based on best practice (2)-4 Test the daft production condition with processing groups to prove the daft code of practice (2)-5 Invite experts on shea butter to check the draft code of practice (3)-1 Find out the production management method to follow the code of practice (3)-2 Make a guide manual of code of practice and management method (3)-3 Transfer code of practice and management method to resource persons	**Inputs** JICA Study team • Japanese experts • Operating expense - Employment costs of Ghanaian staff - Transportation and accommodation costs - Expenses of training, meetings, workshops - Expenses of training materials Ghanaian counterparts • Counter personnel • Office space, office equipment and furniture • Operating expense - administrative and management costs -		1. The government does not change the policy for the garment industry. **Pre-conditions** 1. Quality of shea butter can be controlled by process

(5) Achievements of the trial program

- Major achievements and results:
  - Survey on current shea butter processing method (42 women's groups) (4th field survey)
  - Analysis of 84 shea butter samples (5th field survey)
  - Survey on picking shea nuts and preservation (6th field survey)
  - Formulation of the draft code of practice from picking raw materials to processing shea butter (6th to 7th field survey)
  - Making the video manual and the pictorial manual (7th field survey)
  - Training to disseminate the code of practice (2 times total 50 women from 24 groups) (7th field survey)
  - Analysis and verification of shea butter quality processed on the code of practice (7th field survey)

- Inputs by the team have been made according to the plan. On the other hand, inputs by the counterpart were led by coordinators and UDS, which served as contractor.
- Originally, participation of MOTI and NBSSI was expected, but their participation was limited.
- The project purpose, "to promote work standardization," has been accomplished well for the target group, as training based on work standardization was conducted as part of the trial program.
- It was also confirmed that the overall goal – improvement of shea butter quality in the entire region – can be achieved by using the pictorial manuals, video manual, and the codes of practice that were produced as a result of the trial program.

(6) Lessons learned from the TP

- It is necessary to carry on additional research to improve quality further.

- In addition to outside support, self-help efforts of producer (women) groups and local communities are called for.
- MOFA (AEA) should provide assistance for dissemination of the codes of practice throughout the region.