



INVESTMENT OPPORTUNITY GHANA



Chili Pepper

Millennium Development Authority

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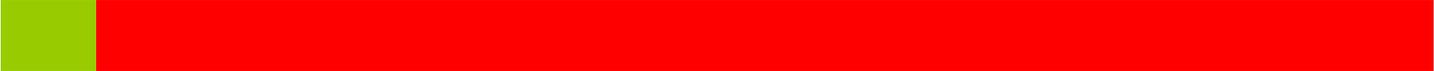


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REASONS TO INVEST IN CHILI PEPPER PRODUCTION IN GHANA

- **Abundant Land with Ample Water Resources**
- **Favorable Climate for Chili Pepper Production**
- **Convenient Access by Air to European Markets**
- **Experienced and Well-organized Chili Pepper Farmers**
- **MiDA Support for Agribusiness and Infrastructure**
- **Low Labor Costs for Farm Operations**
- **Trade and Investment Incentives for Export Businesses**
- **Politically Stable Democratic Government**
- **Transportation Trade Hub for all of West Africa**
- **Warm and Friendly People**

BUSINESS OPPORTUNITY SUMMARY

The business opportunity for chili peppers in Ghana is to establish a nucleus farm operation with outgrower model to export a unique variety, Legon 18, and Bird's Eye chili peppers to the European markets, particularly Germany and the United Kingdom. This opportunity allows investors to take advantage of Ghana's strengths in chili pepper production.

Chili peppers have been widely produced in Ghana for local consumption but have been increasingly exported to the European market in accordance with the development of Legon 18 in recent years. Currently, Ghana is the fifth largest exporter of chili peppers to the European Union, where the demand for chili peppers has been growing annually by 17 percent on average since 2000. Ghanaian chili peppers have a good reputation in the European markets compared with chili peppers from other countries. Legon 18, in particular, has a great taste and a longer shelf life. Additionally, Bird's Eye chili represents a new and growing opportunity for higher value chili exports.

Ghana's competitive advantages over other African chili peppers producers are its proximity to the EU for fresh produce and cheaper airfreight costs. There is also significant available land with plentiful water resources near the Volta River, Lake Volta, and Ghana's many other river systems within a few hours drive from the Kotoka International Airport (KIA). An investor in Ghana's growing agribusiness sector will be supported by the Millennium Development Authority (MiDA). MiDA is an agency of the government of Ghana that is focused on increasing the production and productivity of high-value cash crops in specific intervention zones. MiDA's programs and activities provide additional services from which investors will benefit:

- Up to 60,000 farmers trained in business planning and value chain approaches
- Infrastructure projects improving key transport corridors
- Renovation project to provide cold storage capacity at KIA
- Land tenure facilitation to ensure tenure security for land users and facilitate access to land
- Credit services to increase farmers' access to credit for the improvement of value chain activities

The farmers trained under MiDA's programs are well-organized farmer-based organizations (FBOs) that can provide excellent outgrower relationships for a chili pepper nucleus farmer. A 250 acre nucleus farm operation with 100 acres of outgrowers for the export of chili peppers in Ghana is forecasted to yield a first-year revenue of GH¢9.8 million (\$7.0 million) and net profit of GH¢4.5 million (\$3.25 million) as operations scale up, with estimated revenue increasing to GH¢19.7 million (\$14.0 million) and profit of GH¢9.6 million (\$6.8 million) by the third year of operations.

The Millennium Development Authority (MiDA) is a Ghanaian public agency, created to implement the programs pertaining to the Millennium Challenge Compact valued at \$547 million and signed in August 2006 between the Government of Ghana and the Government of the United States. The Compact includes an allocation of \$241 million for Agriculture Projects to increase productivity and \$306 million for Transportation and Rural Services Projects that will complement the strengthening of capacity in the agricultural sector. MiDA will facilitate investment in this business opportunity for interested domestic and foreign partners, including access to farmer organizations, community leaders, service providers, government agencies, and other organizations as necessary. See MiDA's website at <http://www.mida.gov.gh>.

CHILI PEPPERS IN GHANA

Current Production

Chili peppers have always been part of Ghana's agriculture and diet. Chili peppers require sunny, semi-tropic or tropical conditions and annual rainfall of between 600mm and 1,250mm. Chili peppers have a relatively quick growing and harvesting period of 3 to 4 months in Ghana and are generally grown by local farmers during the rainy season.



Most chili peppers are currently produced under rainfed conditions without irrigation systems, which causes a significant drop in production volume during the dry season. It is estimated that the Ghanaian chili farmers are only producing at 50 percent of attainable yields because of the lack of irrigation systems and improved inputs. After harvesting, farmers sell their chili peppers to exporters at farm gate prices ranging from GH¢ 0.5 to 1(\$0.35-0.70) per kilogram throughout the year.

Specialty Chili Peppers

Although Ghana has been exporting chili peppers for over fifteen years, significant growth in the production of chili peppers for export is relatively recent phenomenon. The growth in exports was prompted by the development of a hybrid chili pepper, **Legon 18**, developed specifically for Ghanaian soil by researchers at the University of Ghana-Legon. In addition to being well-suited to Ghanaian soil and climate conditions, Legon 18 is designed to maintain freshness to enhance its exportability. Since becoming more widely available, Legon 18 has been increasingly produced for export by local farmers through MiDA technical training programs and is now exported to nine countries.



Legon 18 Chili in Sogakope



Bird's Eye Chili Pepper

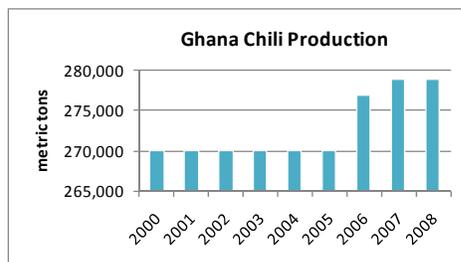
Bird's Eye chili pepper production has also been increasing in Ghana. Bird's Eye pepper is widely produced in India, Thailand, Vietnam and Malaysia. Bird's Eye chili has a very high capsicum content, which are 100,000 to 225,000 Scoville Heat Units, and therefore yields a high market price in export markets and experiences less price volatility. This is partly due to its alternative industrial use in pepper spray. Bird's Eye chili grows in similar conditions to Legon 18; thus Ghanaian climate and soils are suitable for its production. For these reasons, Bird's Eye chili pepper production also represents an opportunity for a nucleus farmer model.

MiDA Sector Intervention: Business and Technical Training for Farmers

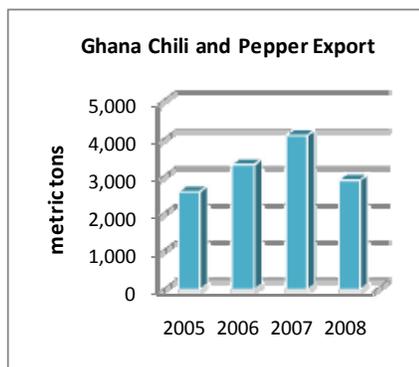
MiDA is providing training to approximately 60,000 farmers. Farmers participate in six weeks of classroom training on business aspects of farming, FBO organizational development, and crop planting decisions based on market dynamics. Farmers also receive three weeks of field training on a specific crop, assisted with a starter kit of inputs for the chosen crop. Legon 18 is one of the value chain crops, which has become increasingly popular among farmers.

Production Volume and Export Trends

The production volume of chili peppers remained relatively constant during last 10 years. It increased slightly from 270,000 metric tons in 2000 to 277,000 in 2006 and 279,000 in 2008 along with increased availability of the Legon 18 seed variety and MiDA's chili pepper production training programs. Currently Ghana is producing about 279,00 metric tons.



Source: FAOSTAT



Source: ADRA Ghana

Ghanaian chili exports have ranged between 26,000 and 41,000 metric tons over the past 5 years. Exports increased about 60 percent from 2005 to 2007 since Legon 18 started being exported. However, chili pepper exports decreased in 2008 due to the global recession.

Ghana exports chili peppers to the European markets, with top export destinations in Germany, the United Kingdom (UK) and Switzerland, where exporters can realize benefits from cheap transportation costs and well-developed cargo networks.



Source: UNCOMTRADE

In order to reach European markets, chili peppers are generally harvested early in the morning and are transported to the Kotoka International Airport for overnight transportation. Chili peppers from Ghana are on the shelf in Europe the day after harvest.

Good Reputation in European Markets

According to an international exporter operating in Ghana, Legon 18 has built a very good reputation for taste and quality in European markets. While regular fresh green chili peppers have a shelf life of only three days, Ghanaian Legon 18 has a shelf life of more than one week. It remains crisp and fresh on the shelf, which is preferred by customers and beneficial to importers in terms of reducing losses from spoilage.

Chili peppers that are picked at farms are transported to the airport and loaded to air cargo carriers. The peppers will be on the shelf of supermarkets in UK on the next day, fresh.

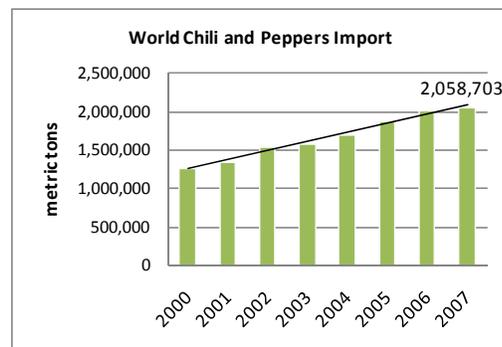
Packaging and Processing Opportunity

Currently, chili peppers are exported fresh from Ghana and generally are not packaged or processed in any way. In European markets, specialty packaging and cut or semi-processed chili peppers are becoming more popular as the customer base expands. Certain customer segments are willing to pay more for visually appealing cut or semi-processed chili peppers, and Kenyan exporters have begun to enter this market segment. There is an opportunity for a nucleus farmer to realize increased profits by moving upmarket with high quality Ghanaian chili peppers.

GLOBAL DEMAND AND SUPPLY OF CHILI PEPPERS

Global Demand

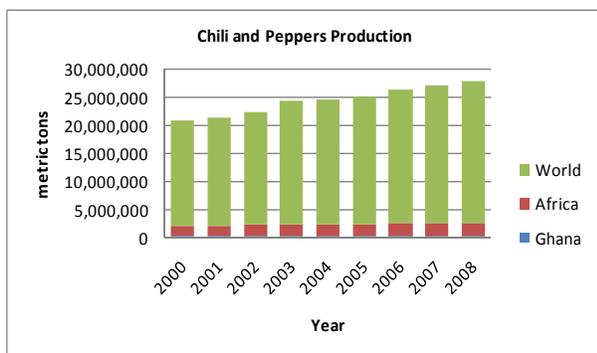
World demand and supply of chili peppers have been steadily increasing. Between 2000 and 2007, fresh chili and peppers increased on average 6.6 percent per year in the world and 6.3 percent per year in Europe. Ghana has mainly focused on the European market, particularly Germany and the UK, because of its proximity and resulting comparative advantage over other African countries in terms of air transportation costs.



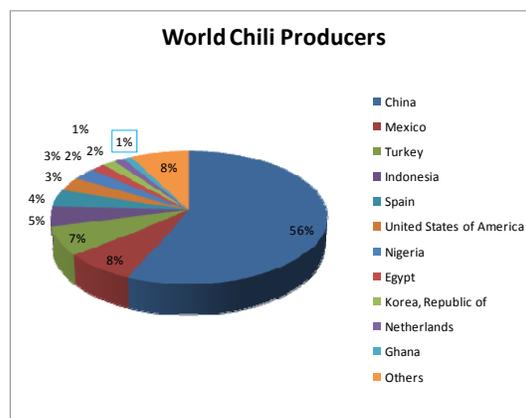
Source: FAOSTAT

Global Supply

World chili pepper production has grown on average 3.9 percent per year during the last 10 years led by a steady increase of global demand. The main chili peppers producers in the world are China, Mexico, and Turkey, which in total account for more than 70 percent of the world chili pepper production. The leading global exporters include Mexico, the Netherlands and Spain. Ghana ranks 11th place among the global chili producers, producing approximately 1 percent of total global production.



Source: FAOSTAT



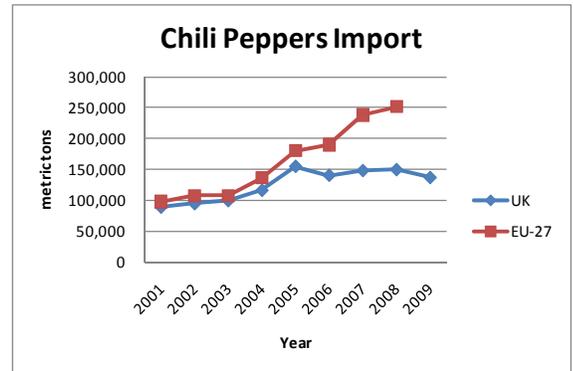
Source: FAOSTAT

Although several Western European countries are themselves exporters of chili peppers, there is a supply and demand gap in those countries during the winter. This is the time when demand and price for exported chili peppers reach their peak in Europe. Because of its tropical climate throughout the year, Ghana can supply to Europe during its high demand winter season. However, winter in Europe corresponds to Ghana's dry season, so irrigation is necessary to enable Ghanaian chili production to capitalize on the higher demand and prices during the European winter season.

European Demand and Supply of Chili Peppers

Demand in Targeted European Markets

The primary customer segment for chili peppers in Europe is the Asian ethnic groups in these countries, and several Ghanaian exporters have established strong business relationships with these markets in European cities. However, opportunities are not limited to these sectors, as more mainstream supermarkets now carry many varieties and choices of vegetables and peppers from around the world as consumer preferences expand.

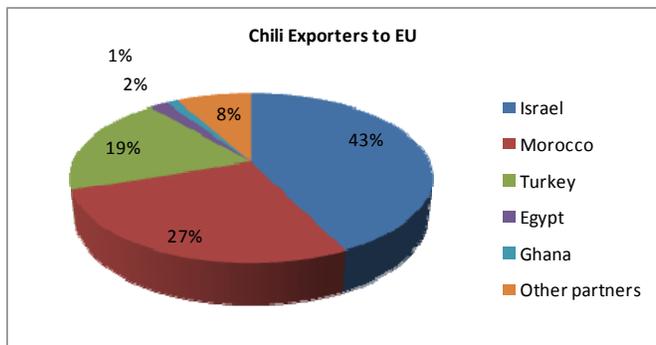


Source: UNCOMTRADE

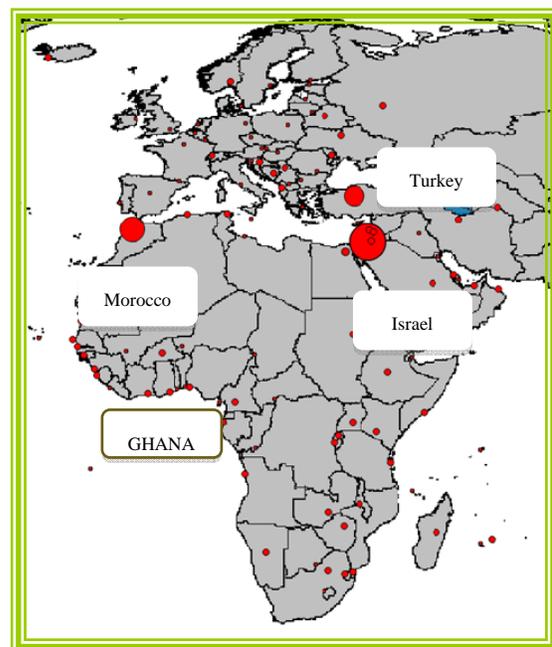
Supply to European Markets and Competition

Ghana’s main competitors in the chili pepper export sector to European market are Israel, Morocco, Turkey, and Egypt. These countries have comparative advantages over Ghana due to cheaper air transportation costs based on their proximities to Europe. Ghana only accounts for about 1 percent of the EU market share. In Africa, Kenya, Uganda and South Africa are Ghana’s main competitors. Ghana has a comparative advantage over these African countries in terms of shorter transport times and relatively inexpensive airfreight costs.

Moreover, Ghanaian chili peppers have been establishing a strong reputation by their great quality and taste as well as a longer shelf life. Ghanaian exporters seek opportunities to reach out to the mainstream customer segment through chain supermarkets in addition to the current niche Asian ethnic consumer markets. With expansion into larger supermarkets, quality will be a critical factor, which brings Ghanaian chili peppers an advantage over chili peppers from other countries.



Source: UNCOMTRADE



Source: UNCOMTRADE

CHILI PEPPER BUSINESS OPPORTUNITY IN GHANA

The business opportunity for chili peppers in Ghana is to establish a nucleus farm operation with outgrower relationships to export Legon 18 and Bird's Eye Chili peppers to European markets.



Chili Pepper Nursery

This opportunity allows investors to take advantage of Ghana's strengths in chili pepper production. Readily available, inexpensive land with ample water resources located close to Kotoka International Airport (KIA) provide the first set of key attributes that Ghana has to offer. The well-developed international and regional transportation network in Ghana, in addition to the experienced and organized local farmers, are important benefits to the potential chili investor. Chili pepper is also known as a high-value agricultural product, which tends to require 2 to 4 times more labor than cereal crops. Such labor intensiveness provides great opportunities for Ghana. The official minimum wage in Ghana is GH¢ 3.11 per day, although farms typically pay in the range of GH¢ 3-5 per day (\$2.22-\$3.57) and GH¢ 150 (\$107) per month for agricultural laborers.

Transportation System– Ghana is a transportation hub of West Africa to Europe. KIA is only 6 hours flight time from most major European destinations. Nucleus farmers can take advantage of the system of major roadways between nucleus farm operations from as far as 4 hours from the airport. Air freight costs from Ghana are significantly lower than from other parts of Africa, providing Ghana with a competitive advantage versus other vegetable and chili exporters, such as Kenya and Uganda. Freight costs to the UK, for example, are \$1.10 per kilogram by Air Ghana compared to Kenyan costs of \$1.90 per kilogram.

Currently, Ghanaian farmers and exporters do not use cold chain transportation or storage to preserve the quality of chili peppers. Yet, they are able to provide fresher chili peppers with a longer shelf life of 1 week than peppers from other countries, which usually have only a 3 day shelf life.



Land Prepared for Chili production in Kwahu South

Land Acquisition– Ghana boasts vast amounts of available, fertile land close to water resources. However, foreign investors can find the process of negotiating land leases daunting due to the traditional systems in place in many agricultural areas. Price and terms will be directly negotiated between investors and land owners, which may be traditional authorities. MiDA and its partners provide critical assistance in locating attractive land and facilitating the process with local authorities. More details on land acquisition in Ghana are described in Annex IV.

MiDA Sector Intervention: Cold Storage at the Kotoka International Airport

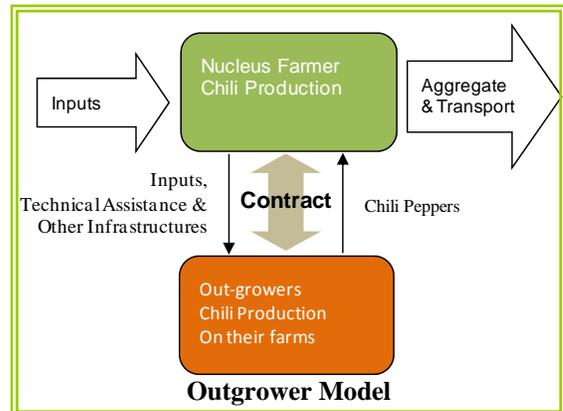
MiDA is rehabilitating the existing cold storage at the Kotoka International Airport for the export of fresh fruits and vegetables. The planned capacity of the facility is 1,200 square meters, and the rehabilitation is expected to be completed by the end of 2011. Upon completion, investors will be able to store fresh vegetables while waiting to be exported by air cargo carriers.

(Related Article Link: www.freshplaza.com/news_detail.asp?id=61779)

Nucleus Farmer Operation

Out-grower Models—One of the greatest advantages of Ghana for chili production is its large number of farmers who already have experience in chili production and are willing to work with investors. Investors can leverage the land holdings and experience of these outgrower farmers by boosting their production output through introduction of productivity-enhancing inputs.

Under a typical outgrower model, a nucleus farm will supplement its on-farm production by purchasing supplies of chili peppers from outgrower farmers who produce on their own land under contract for price, quantity, quality and other specifications. The nucleus farmer will contract to purchase the outgrowers' crops subject to meeting predefined standards, and provides them with inputs such as seeds and fertilizers as well as technical assistance for the purpose of quality control.



Investment Costs and Returns—A 250 acre nucleus farm operation with 100 acres of outgrower farmers for the export of chili peppers in Ghana is forecasted to yield an internal rate of return (IRR) of 256 percent on projected annual revenue in the first year of GH¢9.8 million (\$7.0 million) and net profit of GH¢4.5 million (\$3.25 million) as operations scale up, with estimated revenue increasing to GH¢19.7 million (\$14.0 million) and profit of GH¢9.6 million (\$6.8 million) by the third year of operations. Such a high IRR is achievable because chili pepper production does not require a large initial capital expenditure. The nucleus farmer is projected to reach the break even point within a year after starting the operation.

Together with the tax incentives, particularly the Export Free Zone, and inexpensive operating costs such as labor, transportation and land leases, the nucleus farmer will be able to profit from chili production in Ghana. The detailed cost structure and break even analysis are shown and described in Annex II.

Kotoso Community in Kwahu South District, Eastern Region

Kotoso is located on the shores of Lake Volta, approximately 4 hours drive time from Kotoka International Airport along paved roads.

There are 4 FBOs totalling 200 farmers (50 farmers /FBO) in Kotoso currently producing chili peppers, okra, watermelon and maize on their farms.

There are more than 1,200 acres of land with access to water resources that are controlled by a local chief and available for lease to investors.

Kua Community in South Tongu, Volta Region

Kua village, near Sogakope, is an ideal location for chili production. It is adjacent to the Angor River and 1.5 hour drive from Kotoka International Airport.

The 45-member FBO is currently producing chili peppers, maize and cowpea. They are well-organized and trained in the chili pepper value chain and business skills.

There are approximately 600 acres of land available to investors owned by 3 families, who are willing to negotiate with investors for long-term leases to attract a nucleus farm operation.

INVESTMENT CLIMATE AND INCENTIVES

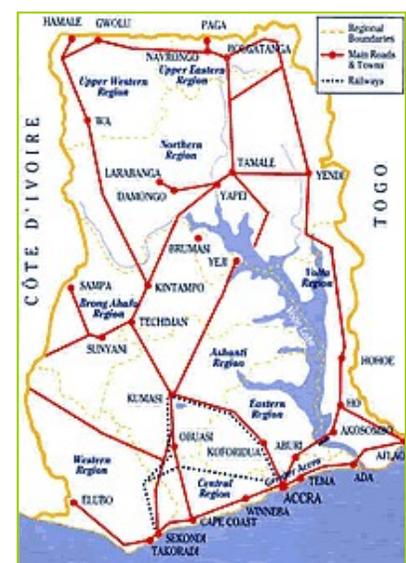
Ghana's Economy

- Ghana is the 2nd largest economy in West Africa. GDP was \$16.1 billion in 2008 and has been growing at an average annual rate of 5.4 percent from 2000 to 2007.
- The population of Ghana is 23.4 million and has been growing by 2.5 percent per year.
- Agriculture contributes 54 percent of GDP, accounts for over 40 percent of exports, and provides over 90 percent of the food needs of the country.
- The inflation rate has been relatively stable, between 10 and 15 percent per year, for the past 5 years, except for 2008, where it was 16.5 percent, due to the global food price inflation triggered by rise of crude oil price. It fell back to 14.5 percent in 2009, and is projected at 9.2 percent in 2010.
- The exchange rate of the Ghanaian cedi has been stabilized over the past 15 years by strong management of the Central Bank of Ghana.



Ghana for Doing Business in Agriculture

- Ghana is ranked #1 in West Africa in “Ease of Doing Business” according to the International Finance Corporation’s *Doing Business 2010 Report*.
- Ghana offers a low cost labor supply. The official minimum wage is GH¢ 3.11 per day, although farms typically pay in the range of GH¢3-5 per day for agricultural laborers (\$2.22-\$3.57).
- Ghana has good port facilities, with two commercial ports at Tema and an international airport connecting Ghana to Europe and the rest of Africa. The road system in Ghana connects major regional centers to the ports and airports.
- Ghana has a stable representative democratic government and has had fair elections since 1992.
- The Government of Ghana is committed to increasing private sector development and agricultural capacity to realize its vision of Ghana as a prosperous middle-income country by the year 2020. The Food and Agriculture Sector Development Policy (FASDEP II) includes plans to modernize the agriculture sector through strengthening value chains, enhancing productivity, improving quality standards, and promoting public-private partnerships. MiDA is a unique government entity positioned to provide additional support for this investment opportunity.



Foreign investors can have 100 percent ownership in local companies and joint start ups. The minimum investment requirement is \$10,000 for a joint venture, in partnership with a Ghanaian, and \$50,000 for a wholly foreign-owned venture. Investors can also lease land for up to 50 years and have the option to renew. Other incentives include:

- Exemption from customs import duties on plant and machinery, equipment and accessories imported exclusively and especially for establishing enterprises
- Depreciation or capital allowance of 50 percent in the year of investment and 25 percent in subsequent years for plant and machinery respectively
- Full repatriation of earnings in the currency of investment
- Multilateral Investment Guarantee Agency (MIGA) membership – Ghana’s signature of the World Bank’s MIGA convention guarantees coverage against non-commercial risks
- Additional incentives for agro-processing activities, including a 5-year tax holiday from start of operation and, after 5 years, corporate tax incentive rates fixed according to location
- Location incentives –After the initial 5-year tax holiday period, agro-processing enterprises that use local agricultural raw materials as their main inputs will have corporate tax rates based on location: Accra-Tema-20 percent, Other Regional Capitals-10 percent, Outside Regional Capitals-0 percent, Throughout Northern, Upper East, Upper West Regions –0 percent
- Free Zone Act of 1995: Enterprises that export 70 percent of what they produce may be eligible for:
 - 10-year tax holiday followed by maximum 8 percent corporate tax rate
 - Tax exemption from withholding taxes on dividends
 - Guarantee of unconditional transfer through any authorized dealer bank of dividends, net profits, payments of loans and other payments
 - Guarantee to be free from nationalization or expropriation by the Ghanaian government
- **Increased Commitment to FDI**

Year	FDI Attracted into Key Sectors of the Economy				2006		2005		2004	
	No. of Projects	Est. Cost of Projects (US\$)	No. of Projects	Est. Cost of Projects (US\$)	No. of Projects	Est. Cost of Projects (US\$)	No. of Projects	Est. Cost of Projects (US\$)	No. of Projects	Est. Cost of Projects (US\$)
Agriculture	17	57,495,360	15	36,390,309	6	6,451,378	9	4,278,018	9	5,759,297
Building &	26	2,097,913,425	32	38,302,647	20	67,311,769	20	90,232,306	12	15,292,207
Export Trading	19	6,177,535	12	2,052,615	13	9,300,193	8	3,526,260	6	376,067
General	74	836,266,621	67	61,039,048	49	35,936,868	44	34,556,239	33	17,547,349
Liaison	10	9,524,085	10	361,200	18	-	9	-	18	-
Manufacturing	50	238,027,314	88	4,826,921,284	63	2,172,783,333	79	37,407,379	52	28,254,916
Services	86	295,088,725	52	54,763,876	68	61,068,029	44	39,715,742	49	97,848,303
Tourism	27	13,475,457	32	9,180,056	19	15,014,910	16	4,022,743	23	40,812,575
Total	309	3,553,968,522	308	5,029,011,035	256	2,367,866,480	229	213,738,687	202	205,890,714

**This excludes the total estimated value of Vodafone International Holding B.V.'s project.

Source: Ghana Investment Promotion Center’s Ghana 100 Magazine

ANNEXES

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ANNEX II: COST STRUCTURE

ANNEX III: LAND ACQUISITION

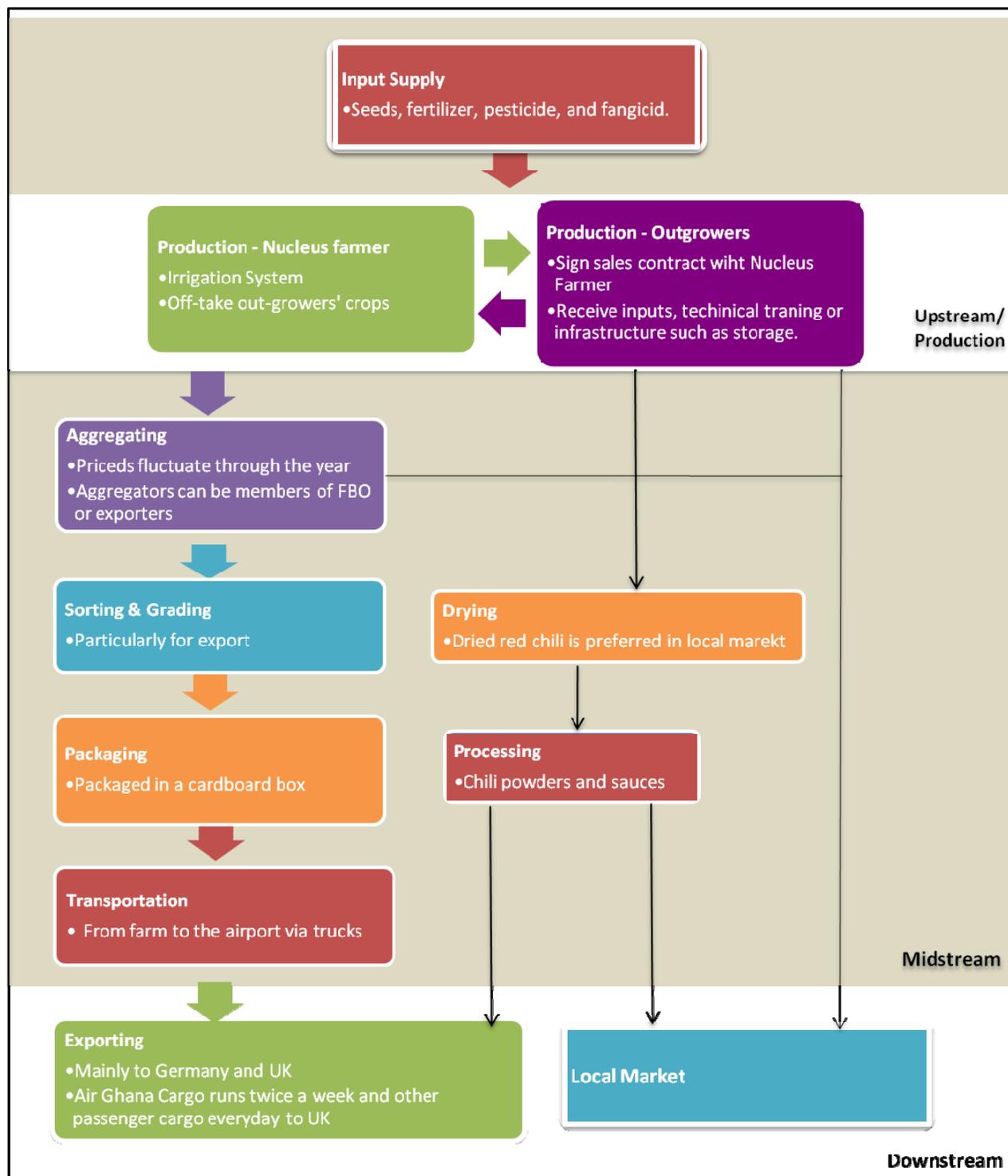
ANNEX IV: REGIONAL PROFILE

ANNEX V: RESOURCES AND CONTACTS



ANNEX I: VALUE CHAIN MAP

This is the value chain of Ghana's chili pepper industry. In addition to export, there are some chili peppers that are sold in local markets both fresh and dried, and some that are processed to chili powders and sauces that are sold in local markets and exported.



ANNEX II: COST STRUCTURE

Costs

The initial capital investment to start up a 250 acre of nucleus farm is expected to cost around \$1.72 million.

Initial Capital Investment	Unit Price		Quantity	Total	
	GHC	USD		GHC	USD
Land clearance	30	21	250	7,500	5,357
Road preparing/maintenance	70,000	50,000	1	70,000	50,000
Office building	70,000	50,000	1	70,000	50,000
Generators	70,000	50,000	1	70,000	50,000
Storage	14,000	10,000	1	14,000	10,000
Irrigation System	1,001,000	715,000	1	1,001,000	715,000
Trucks	84,000	60,000	7	588,000	420,000
Tractors	252,000	180,000	2	504,000	360,000
Vehicles	42,000	30,000	2	84,000	60,000
Total CAPEX				2,408,500	1,720,357

Total variable costs for annual operation and export per acre is estimated to be \$31,211 (including airfreight costs), which makes per box variable cost \$8.11 and per kg variable cost \$1.44. The costs for chili peppers to be purchased from outgrowers totaling 100 acres are included in the sections for packaging and transportation costs and overhead costs.

Variable Costs	Per Acre/Year		Per Box		Per kg	
	GHS	USD	GHS	USD	GHS	USD
Farm Operation Costs						
Land Rental	35	25	0.01	0.01	0.0015	0.0011
Land Preparation/Maintenance	1,380	986	0.36	0.26	0.06	0.04
Depreciation of Farm Equipment	992	709	0.26	0.18	0.04	0.03
Input	1,173	838	0.30	0.22	0.05	0.04
Labor	996	711	0.26	0.18	0.04	0.03
Sub-total	4,576	3,269	1.19	0.85	0.20	0.14
Packaging and Transportation Costs						
Packaging	3,080	2,200	0.80	0.57	0.13	0.10
Ground Transportation including vehicle depreciation	1,358	970	0.35	0.25	0.06	0.04
Airfreight costs to UK	32,610	23,293	8.47	6.05	1.41	1.10
Sub-total	37,048	26,463	9.62	6.87	1.60	1.24
Overhead Costs						
Personnel Costs	573	409	0.15	0.11	0.02	0.02
Financial Costs	840	600	0.22	0.16	0.04	0.03
Depreciation	59	42	0.02	0.01	0.0025	0.0018
Sub-total	2,082	1,487	0.54	0.39	0.09	0.06
Total Farm Operation Variable Costs	43,706	\$31,219	11.35	\$8.11	1.89	\$1.44
Variable Costs from Out-growers						
Purchase price from out-growers			5	\$3	0.78	\$0.56

Yields and Profits

A 250 acre nucleus farm operation with 100 acres of outgrowers for the export of chili peppers in Ghana is forecasted to yield an internal rate of return of 256 percent on projected annual revenue of GH¢19.65 million (\$14 million) and profit of GH¢ 9.3 to 10 million (\$6.7 to 7.2 million). Estimated cash flow and income statement are shown on p.15.

Market price of \$12.65/Box is used, which is based on the U.K. producer price of green chili and peppers of \$2.3/kg from FAOSTAT database in 2007. Yield for nucleus farm is projected as 7.7 metric tons per acre, which is 70 percent of attainable yields of 11 metric tons/acre. Yield for outgrowers is projected as 4 metric tons per acre, which is the actual average yield of current Legon 18 producers in Ghana.

Therefore, the total yields for 250 acre nucleus farm and 100 acre of outgrowers are projected in total as **6,975 metric tons**.

Yield per acre	Yield Per Season	Yield Per year
Nucleus Farm		
Box	1,283	3,850
metric tons	7.7	23.1
Out-growers		
Box	667	2,000
metric tons	4	12
Total Yield (250 acre Nucleus Farm + 100 acre outgrowers)		
Box	387,500	1,162,500
metric tons	2,325	6,975

Break Even Analysis

Based on the project costs and profits, investors are projected to reach break even at the production level of 374,576 boxes or 2,247 metric tons, which is expected to be achieved in the first year of the operation due to relatively low initial capital investments. After the break-even point, the investors will make a profit of \$4.54/box or \$0.86/kg.

Breakeven Analysis	
Initial Investment (\$)	\$1,701,786
Variable Cost (\$/Box)	\$8.11
Production (Box) to reach breakeven	374,576
Export Price (\$)/Box	\$12.65
Variable Cost (\$/kg)	\$1.44
Production (Kg) to reach breakeven	2,247,458
Export Price (\$)/kg	\$2.30
Revenue (\$)	\$4,738,390
Total Cost (\$)	\$4,738,390
Total Profit (\$)	0
Profit (\$)/Box after breakeven point	\$4.54
Profit (\$)/kg after breakeven point	\$0.86

ANNEX II: COST STRUCTURE

Cash Flow, Profit and Loss, and Loan Repayment for the first 5 years

These are detailed business models for the first 5 years. The IRR of 256 percent is based on the 15 year cash flow projection. Investors will start paying 8 percent tax from year 11, and the maximum profit of \$7.17million will be achieved between year 6 to year 10. The projected net profit after year 11 is \$6.67 million.

Cash Flow

Year		0	1	2	3	4	5
EBITDA		(1,720,357)	3,694,068	5,827,560	7,249,887	7,249,887	7,249,887
TAX	8%		0	0	0	0	0
Net Profit		(1,720,357)	3,694,068	5,827,560	7,249,887	7,249,887	7,249,887
FCF		(1,720,357)	3,694,068	5,827,560	7,249,887	7,249,887	7,249,887
IRR	256%						

Income Statement

Year		0	1	2	3	4	5
Yield: % of targeted yield			50%	80%	100%		
Revenue			7,019,479	11,231,167	14,038,958	14,038,958	14,038,958
Cost		(1,720,357)	(3,325,411)	(5,403,607)	(6,789,071)	(6,789,071)	(6,789,071)
EBITDA		(1,720,357)	3,694,068	5,827,560	7,249,887	7,249,887	7,249,887
Depreciation		0	(292,643)	(292,643)	(292,643)	(292,643)	(82,643)
Repayment		0	(150,000)	(140,000)	(130,000)	(120,000)	(110,000)
Taxable Income		(1,720,357)	3,251,426	5,394,917	6,827,244	6,837,244	7,057,244
Tax	8%	0	0	0	0	0	0
Net Profit		(1,720,357)	3,251,426	5,394,917	6,827,244	6,837,244	7,057,244

Loan Payment Schedule	Year	0	1	2	3	4	5
Repayment			(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
Remaining Principle		500,000	400,000	300,000	200,000	100,000	0
Interest	10%		(50,000)	(40,000)	(30,000)	(20,000)	(10,000)
Total payment			(150,000)	(140,000)	(130,000)	(120,000)	(110,000)

*Payment occurs at the beginning of the year

Overviews of Irrigation System and Labor Costs

Irrigation System	Quantity	GH¢	USD
80HP Diesel Water Pump	1	26,000.00	18,571.43
Jolly Sprinkler	750	134,250.00	95,892.86
Pipes, Couplings, Hoses and others		840,750.00	600,535.71
Total		1,001,000.00	\$715,000.00

Labor Costs	GH¢	Unit
Operational Staffs	150-400	per month
Part-time Workers for Harvesting	5	per day
Ghana minimum wage	3.1	per day

Assumptions

The yields, profits, breakeven, and income statement and cash flow calculations are based on the assumptions stated below:

Basics	
	1.4 GHC/\$
Exchange rate	0.6509 GBP/\$
1ha	2.471 acres
1Box at Farm	6 kg
1Box at sales	5.5 kg
Production	
Harvest 3 times in a year	3 times
Harvest once in Rainy season and twice in dry season	
*Harvest in rainy season	2
*Harvest in dry season	1
Investors own acres as a nucleus farm	250 acres
Investors contract with farmers	100 acres
Attainable yield in Ghana	11 t/acre
% in attainable yield that nucleus farmer produces can achieve	70%
Land lease is paid each year	
Investors harvest same amount in dry and rainy seasons	
Transportation	
All crops are exported to UK	
Use the MIDA cold storage system at KIA so trucks transport crops to the airport every business day.	
Investors only use Air Ghana cargo to UK, which leaves twice in a week.	
Farmers have different planing and harvesting schedule to have constant crops.	
A truck to transport chili from farm to KIA can load 250 boxes at a time	250 Boxes/ride
Sales Price	
Market price is \$12.65/Box (FAOSTAT UK Chili Producer Price 2008)	
Finance	
Finance \$5mil	
Investors finance at their home country	10% 5 years loan
Investors will be granted Export Free Zone Status so investors do not pay taxes for the first 10 years	
Tax rate after 10 years	8%
Repayment priod	5 years
Inflation is not considered	

ANNEX III: LAND ACQUISITION

Fertile Land and Water Resources

Ghana's vast tracts of fertile and inexpensive land with excellent water resources are extremely attractive to investors interested in commercial farming of maize, soy and rice. Given that only 16 percent of Ghana's arable land is currently under agricultural production, there is significant supply of land resources available for foreign investors interested in establishing commercial farm operations.

The process for acquiring land can be relatively cumbersome, time-consuming and complex for outside investors to navigate. However, foreigners are permitted to lease land for up to 50 years under a registered leasehold title. Sample annual rates for leasing an acre of agricultural land range from GH¢10-50 (\$7.15-\$35.70) per year.

Types of Land

In Ghana, the Constitution identifies three types of land:

- *Public lands* controlled by the state government
- *Stool or skin lands* controlled by traditional authorities (chieftaincies) on behalf of communities
- *Family or private lands* controlled by individuals or family clans

Foreigners may be able to acquire leasehold interests in public land directly from the government for very large tracts of land, but public lands represent only 20 percent of land in the country. Family or private lands are often not the most optimal in terms of size, fertility and access to water. Generally, the most attractive lands for investors in commercial agriculture are the stool or skin lands controlled by the traditional authorities in each area.

The Importance of Local Customs

The negotiation process to lease land from traditional authorities can differ from area to area, and in some cases can involve more than one chieftaincy. It is not uncommon for a representative to act on behalf of the traditional authority, at least in the initial stages. Following customs and respecting traditional authorities early in the process can reduce the possibility of misunderstandings or disputes over land rights as negotiations proceed.

There are often traditional ceremonial protocols to be followed with which foreign investors are unfamiliar; for example, in many areas, a business person is expected to bring schnapps to the chief before any request to negotiate for land. It is recommended that investors work through a trusted local partner, such as MiDA's implementing partners and local contacts, to assist in the process to ensure that customs are followed. An investor who is unfamiliar with these informal, yet very important, processes risks damaging the opportunity to work with a potentially beneficial partner for the simple lack of knowledge regarding local customs.

MiDA FACILITATION AND SUPPORT

The highlighted MiDA intervention zones represent areas within Ghana where investors can access communities with attractive land and water resources and where MiDA and its partners can provide information on land available for chili pepper production. MiDA and its partners have established relationships with the traditional authorities in these areas, as well as the relevant authorities from government entities involved in land transactions. This enables MiDA and its partners to provide information and facilitate meetings for investors during the negotiation process. Investors can look to MiDA as a trusted partner available to help navigate the unfamiliar process of land negotiation in Ghana.

MiDA and its partners are training 60,000 farmers in value chain approaches to agricultural production and assist in the growth and development of farmer-based organizations (FBOs) in these zones. Farmers participate in six weeks of classroom training on business aspects of farming, FBO organizational development, and crop planting decisions based on market dynamics. Farmers also receive three weeks of field training on a specific crop, assisted with a starter kit of inputs for the chosen crop. The FBOs develop an understanding of the benefits that a commercial operation can bring to their communities. In many cases, the FBOs act as economic development agents for their areas. These FBO-trained communities are particularly attractive from the perspective of an outside investor interested in a mutually-beneficial relationship with a local community in which to locate operations.



Key Points in Negotiations

Investors should initially focus on ensuring that the land in which they are interested will not be contested by neighboring families or chieftaincies. Investors or their representatives cannot be seen on the property until after they have met with the appropriate traditional authorities and the regional council to obtain their blessing and approval to proceed with exploration of the land and due diligence measures. Because most land available to investors is fallow, specific boundary lines are not always well established, thus care must be taken to identify any and all claims at the outset. Investors will also be interested in securing transferable rights and negotiating leases that are sufficiently long-term to justify the investment necessary to establish commercial operations.

Equally as important as the terms that the investor is seeking are the terms that the investor is willing to offer to the community. The traditional authorities act as stewards of the land on behalf of the community. As a result, the negotiation process must involve all stakeholders, including the chiefs, elders, and members of the community. This helps to ensure that a lease agreement is not challenged in the future for failure to adequately compensate the community for the use of its land resources.

Sogakope Community in South Tongu, Volta Region

Kua village, near Sogakope, is an ideal location for chili production. It is adjacent to the Angor River and 1.5 hour drive from Kotoka International Airport. There are approximately 600 acres of land available to investors owned by 3 families, who are willing to negotiate with investors for long-term leases to attract a nucleus farm operation.

Description of Soil type: Soils in the area are mainly sandy loams and sandy having been formed from Voltaian sandstones. However there are portions of heavy black clays (vertisols) and other sandy clay loams.

Rainfall: average annual rainfall of the coastal plains in which the project area falls into is 800mm Rainfall is bimodally distributed. Major season being April-July and Minor being mid August –October.

Temperature varies from 23-33 degrees Celsius.



ANNEX V: RESOURCES AND CONTACTS

Millennium Development Authority (MiDA)

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Vegetable Producers and Exporters Association of Ghana (VEPEAG)

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Ghana Investment Promotion Center (GIPC)

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Chief Executive Officer

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Ghana Export Promotion Council (GEPC)

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MiDA is tasked with facilitating investment in this business opportunity for interested domestic and foreign investors. MiDA can help investors access farmer organizations, service providers, government agencies, and other organizations as needed. It can also provide more information about its current agriculture, transportation, and rural development projects that will complement the establishment of new businesses.

ADRA is the Regional Implementation Consultant for the MiDA Agriculture Project in the Afram Basin, where yam production is high. ADRA can provide interested investors with direct contact to yam farmer based organizations as potential clients of the commercial seed yam investor as well as to exporters of yam. With MiDA, ADRA is an important source of local knowledge.

GAVEX and VEPEAG are vegetable exporters associations. They have established relationships with small vegetable producers in Ghana as well as importers in export destination countries in European markets. They can provide key business information for chili production and export in the country, reputation of Ghanaian chili peppers in the European markets, and market competition with other chili producing countries. They work together to influence government policies that can benefit vegetable exporters and to facilitate better access to seeds and other inputs.

The Directorate of Crop Services is responsible for ensuring that adequate planting materials are available for production. MoFA can provide instruction on integrating the business investment with government initiatives and can work with the investor to ensure that projects in line with national agricultural strategy are supported. MoFA is also a source of data on all agricultural products produced in Ghana.

GIPC's mandate is to coordinate and monitor all investment activities in Ghana. GIPC will assign an officer to help an investor with the procedures involved in land access, incorporating a new business, and other steps of the decision-making process. GIPC can provide detailed information about all investment incentives that Ghana offers.

The GEPC provides technical advisory services to facilitate product and market development. Market access missions are a core part of organization's activities which can help an investor gain information and penetrate new markets. GEPC also maintains data on the export of Ghana's agricultural products and can disseminate selective trade information.

MAP OF GHANA

WITH MIDA INTERVENTION ZONES

Northern Agricultural Zone

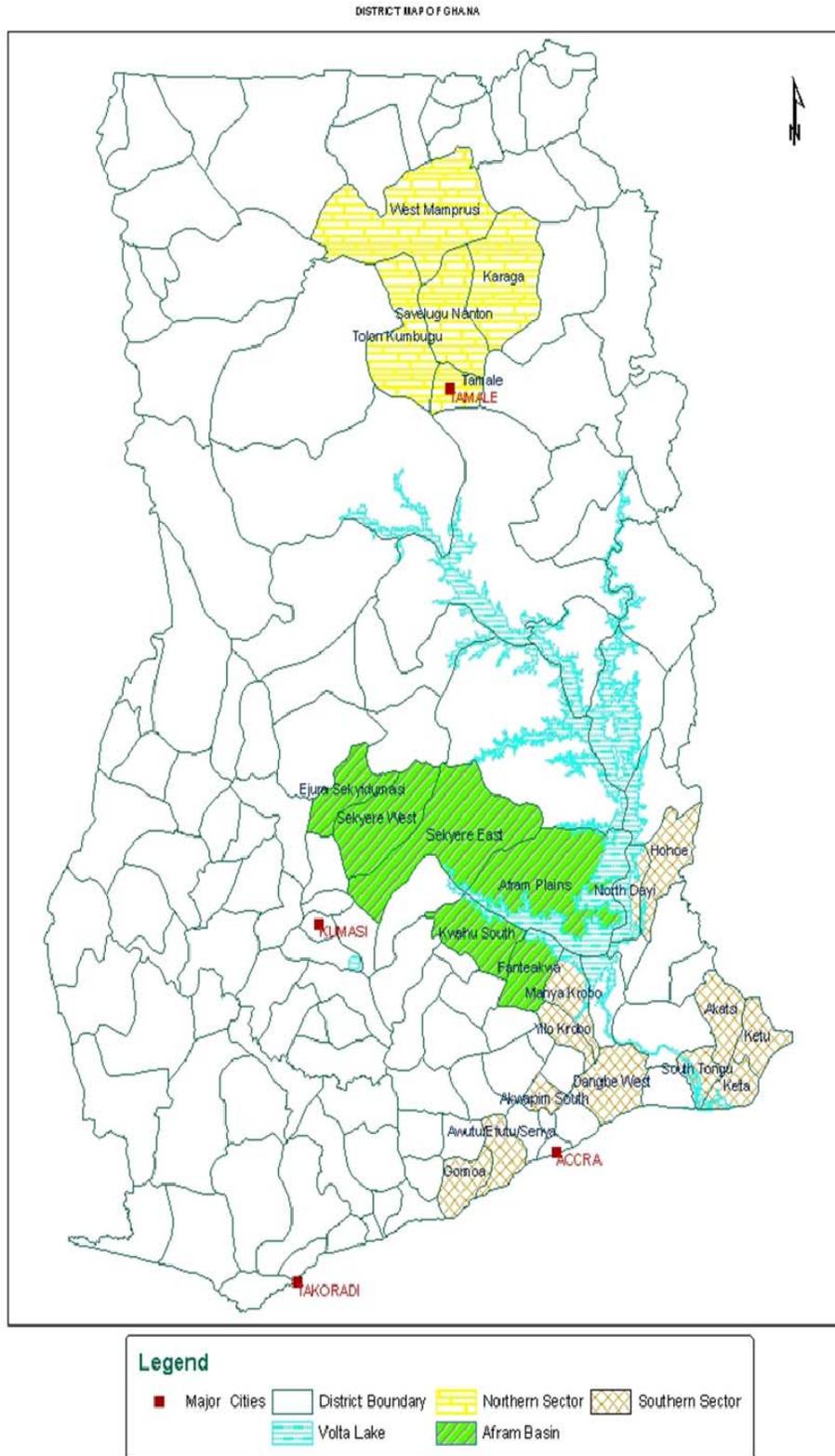
Savelugu Nanton
Tolon Kumbungu
Tamale
West Mamprusi
Karaga

Afram Basin Zone

Kwahu North
Kwahu South
Kwahu East
Fanteakwa
Akuapem South Municipal
Yilo Krobo
Upper Manya Krobo
Lower Manya Krobo
Sekyere East
Sekyere Afram Plains
Mampong Municipal
Sekyere Central
Ejura-Sekyedumasi

Southern Horticultural Belt

Gomoa East
Gomoa West
Efutu Municipal
Awutu- Senya
Dangme West
Kpandu
Hohoe Municipal
Ketu South
Ketu North
Keta Municipal
South Tongu
Akatsi



Legend

- Major Cities
- District Boundary
- ▨ Northern Sector
- ▨ Southern Sector
- ▨ Volta Lake
- ▨ Afram Basin