

**PROJECT INFORMATION DOCUMENT (PID)**  
**CONCEPT STAGE**

Report No.: 105933

<b>Project Name</b>	Peri-urban Vegetable Value Chains for Poverty Reduction (P150369)
<b>Region</b>	AFRICA
<b>Country</b>	Ghana
<b>Sector(s)</b>	General agriculture, fishing and forestry sector (100%)
<b>Theme(s)</b>	Rural markets (60%), Rural services and infrastructure (20%), Other rural development (20%)
<b>Project ID</b>	P150369
<b>Borrower(s)</b>	Republic of Ghana
<b>Implementing Agency</b>	Ministry of Agriculture, Forestry and Food Security and Ministry of Trade and Industry
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared/Updated</b>	20-February-2016
<b>Estimated Date of Board Approval</b>	25-June-2016

## I. Introduction and Context

### Country Context

1. Ghana has evolved into a stable and mature democracy throughout the past two decades. The country continues to show good performance on democratic governance, arising from strong multi-party political system, growing media pluralism and strong civil society activism. The country's economy has experienced a long period of growth of above 7 percent and is estimated to have grown ahead of the average for the Africa region, with gross domestic product (GDP) growth at 15% in 2011 and 7.9% in 2012, prompted by strong cocoa production, construction and transport, continued increased gold output and the commercial production of oil.

2. The Rapid and sustained economic growth has helped Ghana to pull thousands out of poverty. The poverty rate fell by more than half between 1991 and 2012: in the early 1990s nearly two out of every three (63%) rural Ghanaians lived below the national poverty line. By 2006 the ratio has dropped to two in five (39.2%) and by 2012 it is one out of five (21.4). Nonetheless, the distribution of poverty around the poverty line nationwide suggests that vulnerability is high and a shock to household consumption of around 30 percent would push 50 percent of the population into poverty. The significant growth attained since the 1990s has not impacted on poverty reduction equally resulting in inequality not only between the north and south of the country, but also between food crop farmers and other socioeconomic groups, and between urban and rural areas where agriculture is a source of livelihood for more than 70% of the population. Thus, rural households have mostly have benefited little from the economic growth achieved so far and rural poverty remains high.

## Sectoral and Institutional Context

3. Ghana's economy has been largely dependent on agriculture and agricultural growth is the key to overall economic growth and development, despite the discovery and production of oil and gas in commercial quantities. However, the recent economic growth has been associated with a shift of the economy out of agriculture. The share of agriculture in GDP has declined by nearly 40 percent, from more than one third of GDP in 1991 to about 22 percent in 2014, making agriculture the smallest sector in the economy in terms of value added, although it is still the main sector of employment, representing 43.2 percent of total employment. The sector plays a traditional role of provision of food and nutrition security, supply of raw materials for industry, creation of employment and generation of foreign exchange earnings. The sector is also recognized to have a greater impact on poverty reduction than other sectors of Ghana's economy. The first Ghana Poverty Reduction Strategy (GPRS I 2003-2005) set out that agriculture was to be modernized to spur rural development. Similarly, in the Growth and Poverty Reduction Strategy (GPRS II 2006-2009), and the Ghana Shared Growth and Development Agenda I (GSGDA 2010-2013), agriculture was expected to lead the growth and structural transformation of the economy and maximize the benefits of accelerated growth. The growth and poverty reduction strategies recognized that no significant progress can be made in raising the average real incomes of Ghanaians as a whole without significant improvements in the productivity of the agriculture sector and agro-based processing industry (NDPC, 2005). The sector's growth performance has however remained erratic declining from 7.4 in 2007 to 4.6 in 2014.

4. Horticultural crops (fruits and vegetables) play a major role in food and nutrition security as they are not only sources of income but are also good sources of vitamins, minerals and dietary fiber. Although FAO and WHO recommend a daily intake of at least 400g/person (146kg/person/year) of fruits and vegetables, Africa is said to be the least nourished of all the continents in the world with fruit and vegetable intake of 100g/day or lower compared to 300g/day for those in developed countries.

5. Vegetable growing form an integral aspect of Ghana's agriculture system. The industry have three distinct components : (1) commercial/market gardening areas sited around principal cities such as Accra, Kumasi, Takoradi and Tamale; (2) a form of truck farming in which vegetables are produced in rural areas from where they are purchased by contractors or middlemen and transported by road to the cities; and (3) small domestic or backyard gardening. Vegetables most commonly grown in the country are: tomato (*Lycopersicon esculentum*), onion (*Allium cepa*), shallots (*Allium scalonicum*), okra (*Hibiscus esculentus*), eggplant (*Solanum melongena*), local spinach (*Amaranthus spp*), Indian or Gambian spinach (*Basella alba*), sweet and chilli pepper (*Capsicum annum*), and hot pepper (*C. frutescens*). Exotic vegetables including lettuce and cucumber are fast gaining popularity both in production and consumption.

6. The fresh vegetable requirements of the country can be grown locally and the produce finds a ready market in the country. Most vegetables are currently produced under rain-fed conditions without irrigation systems, which cause a significant drop in production volume during the dry season, while in urban centers vegetables are mostly cultivated using urban waste water with serious quality implications. It is estimated that the Ghanaian vegetable farmers are only producing at less than 50 percent of attainable yields because of the lack of irrigation systems and improved inputs creating a country supply and demand deficit. In rainy seasons where there is usually product glut, farmers experience high post-harvest losses due to lack of processing and storage facilities. External Trade Statistics of Ghana show that large sums of money are spent each year on importing vegetables and vegetable products to augment

local production.

7. The export of fresh vegetables to generate foreign income for the country can be a lucrative enterprise and this has been demonstrated by a few but established exporters in the country. Yet the vegetable industry in Ghana is highly fragmented and of a small holder in nature. This complicates managerial operations and logistical arrangements for procurement and bulking of material supplies required for the export market to thrive.

8. Vegetables supplies to the major cities in Ghana are mostly from peri-urban sources. In Accra for example, the supply of vegetables and staple foods originates from satellite farming communities in the Dangme East District of the Greater Accra Region as well as farming communities in the Central, Eastern, Volta and Western regions of Ghana. The major trunk roads that link these regions to Accra makes it easier to transport the produce to the nation's capital howbeit, perishable farm produce such as vegetables tend to lose significant freshness as a result of lack of refrigerator transportation facilities.

9. An analysis, that excludes backyard subsistence production, revealed that smallholder farmers in the urban and peri-urban satellite communities are the crucial suppliers of most perishable vegetables to the cities' markets. There is high demand for this produce especially from low-income households and the large number of small (street) eating places because it is fresh and they have limited possibilities for storage. These farmers however tend to rely most entirely on rain-fed agriculture or use crude irrigation schemes (including the use of waste water) that do not guarantee continuous supply as well as produce quality. The inability of the smallholder farmers to meet the increasing quality demands of the urban populations makes it difficult for them to have access to high value markets to improve their earnings and livelihoods.

10. Over the years, government and donor agencies have intervened in the horticultural sector and were mostly targeted at improving productivity and production quality of the local produce for mainly the European export market. These initiative included the Horticultural Export Industry Initiative by the World Bank, the Export Marketing and Quality Awareness Program by the Africa Development Bank, the Ghana Private-Public Partnership Food Industry Development Program that has a multi-donor support, Trade & Investment Program for a Competitive Export Economy (TIPCEE) funded by USAID, the Market Oriented Agriculture Programme (MOAP) funded by the German Government and a recent poverty reduction through agriculture transformation programme funded under the US Millennium Challenge Accounts. The above listed resent past initiatives on vegetables had mostly targeted semi-commercial ventures for the export market. The proposed grant will therefore respond to the specific needs of smallholder vegetable growers: building their capacity and assisting them with the requisite infrastructure such as to improve on their productivity and quality of their produce and which also enables them to have direct access to high value urban markets that will ultimately impact on their earnings and livelihoods, and will be implemented in coordination with the interventions of other donor agencies.

Relationship to CAS

11. The proposed Peri-Urban Vegetable Value Chain project is consistent with Pillar Two of the Country Partnership Strategy (CPS) for the Republic of Ghana (Improving Competitiveness and Job Creation), which focuses on reducing absolute poverty and enhancing shared prosperity by promoting improved competitiveness and increased employment opportunities. It is also consistent with both the World Bank Group Agricultural Action Plan, and the Africa Region's updated agriculture strategy (Africa's Renewed Emphasis on Agriculture) which, inter alia, focuses on raising agricultural productivity, linking farmers to markets and strengthening value addition. It is also closely linked to the Ghana Shared Growth and Development Agenda (GSGDA) and the Government's Agenda for Prosperity. Indeed, the proposed project supports government's strategy on market-oriented agricultural development, and thus directly contributes to two of the objectives in Ghana's Medium Term Agricultural Sector Investment Plan (METASIP): Objective 2 - Increased growth in incomes; and Objective 3 – Increased competitiveness and enhanced integration into domestic and international markets. The proposed grant support therefore complements interventions supporting the country's agricultural sector to become more competitive, sustainable and private sector-led which will ensure sustained increases in producers' incomes.

12. It is also linked to the JSDF objective as it seeks to empower and improve the lives of the poorest and most vulnerable groups.

13. Moreover, the proposed project complements on-going support of the Bank and other development partners to the agricultural sector, notably, the West Africa Agricultural Productivity Program (WAAPP) and the Ghana Commercial Agriculture Project, by stimulating the interests of the youth in high value agriculture. The project will also be a platform for dissemination of most of the improved technologies, particularly improved varieties and good agricultural practices on horticultural crops.

## **II. Proposed Development Objective(s)**

Proposed Development Objective(s) (From PCN)

14. The objective of the grant proposal is to improve on the productivity and access to market by the beneficiary vegetable farmers in selected peri-urban communities in Ghana. The grant will promote water harvesting and small-scale irrigation schemes to facilitate all year round vegetable production and consumption. It will also develop capacity and provide support to enable the resource poor farmers improve productivity and the quality of their produce. It is further to reduce post-harvest losses through the institution of efficient post-harvest handling mechanisms and the facilitation of access to high value markets to ensure appreciable income levels for the farmers.

Key Results (From PCN)

15. The expected project results are: i) At least 30% improvement in the yield levels of vegetable crops cultivated by small-holder farmers; ii) at least 20% increase in marketed sales through improved access to high value markets; (iii) at least 20% reduction of vegetable post-harvest losses (over current levels) among the participating farmers; (iv) at least 20% increment in the income levels of farmers cultivating vegetables under the project; (v) direct beneficiary vegetable producers (at least 40% of which are women) of about 1500 utilizing the gender strategy developed under WAAPP to ensure effective gender mainstreaming in project activities.

### III. Preliminary Description

#### Concept Description

16. The project results will be achieved through four project components: 1) Farmer Managed Irrigation Systems Development; 2) Farmer Capacity Development and Support to Productivity Improvement; 3) Improving Post-Harvest Handling and Access to Markets; and 4) Project Management, Monitoring and Evaluation, and Knowledge Dissemination. It is expected that project will help vegetable farmers to improve productivity, increase product quality, enhance access to high value markets and increase incomes of participating farmers.

17. Component 1: Farmer Managed Irrigation Systems Development (*US\$ 720, 456, 100% Grants*): The objective of the component is to improve the existing small scale riverine irrigation systems for the resource poor farmers in the selected farming communities which are bounded by perennial water bodies with high potential for irrigation farming. The component will address the characteristic seasonality of vegetable production and thus empowering the resource poor farmers to improve their productivity for increased earnings.

18. The component will cover the design and implementation of agriculture irrigation infrastructure, based on the Semi-Californian technology. In particular, it will involve the construction of a closed conduit irrigation systems all the way from the water source (tanks) to the farmers' field. The proposed model, unlike the open canal system which has faced challenges of over irrigation and soil degradation, will enable farmers to have control over the water application and to also shut it off immediately after each irrigation activity. The furrow irrigation technologies will be deployed under the conduit irrigation system. The design will have a network of farms and perimeter roads which will serve for tractor and other transport activities such as for push trucks. Pipes will be laid for pond filling and gravity water distribution from the ponds. This system also known as the Semi-Californian System has been deployed extensively in Burkina Faso with great success. The lessons learnt from the deployment of the system in the Burkina Faso will be taken on-board while also contextualizing the design to suit the local needs.

19. The project will, at every participating community, install one Amiran Farmers Kit (AFK) to demonstrate the technology to farmers. The AFK, which is a greenhouse technology using drip irrigation, has been proven to have high potential to improve on productivity and quality of produce and thus increase in incomes. Due to the cost per kit vis-à-vis the cost per beneficiary however, the project will not immediately introduce the technology on a mass scale to the farmers. It is expected however that as the farmers profit margins increase, they will in themselves begin to invest in the technology to further improve on their yields and hence incomes.

20. **Project Component 2: Farmer Capacity Development and Support for Productivity Improvement** (*US\$ 545,200 – 100% grant*): The aim of this component is to facilitate the adoption of modern and improved production technologies through sustained farmer capacity development and other support systems. The component will design and implement an intensive farmer capacity development program to ensure that farmers have the know-how and adopt modern vegetable production and post-harvest handling techniques to be able to improve their productivity and output. Both workshop based and field based training including FAO's Famer Field School approaches will be adopted for the farmer capacity development. Training areas will include productivity improvement technologies, appropriate use of chemicals and pesticides, agribusiness management, farm management and farm record keeping accounting and financial management, post-harvest handling etc. Relevant themes under the Ghana Good Agricultural Practices (GHANA GAP) will be incorporated into the farmer training program.

21. Capacity development for selected Agriculture Extension Agents (AEAs) in the beneficiary communities who will be directly involved in field activity implementation will also be undertaken. This is to ensure the technical know-how of the selected AEAs is upgraded to effectively provide extension and other support services to the beneficiary farmers and communities. Depending on the number of communities and/or farmers, between two to five AEAs from each of the District Agriculture Development Directorate of MOFA will be assigned to the project to provide extension support services to the farmers and communities.

22. **Component 3: Improving Post-Harvest Handling and Market Access(US\$2,020,080: grant – US\$ 1,214,700; beneficiaries – US\$ 889,380 ):** This component seeks to sustain farmers' incomes overall and contribute effectively to the reducing extreme poverty among vegetable growers to develop and coordinate the vegetable value chain through support to producers organizations to enhance their productive capacity and competitiveness and to develop market linkages.

The grant will support farmers to enter into productive partnership arrangements with agriculture entrepreneurs to establish and operate two Farmer Cooperative Vegetable Warehousing Systems that would help to improve their access to markets and stabilize prices. To enhance managerial efficiency and profitability, each Warehousing Center will enter into a strategic partnership with productive entrepreneurs who would be existing nucleus farmers with good knowledge and experience in vegetable production and marketing systems in Ghana. The Warehousing System which will be equipped with refrigerated and cold chain transport system will serve as an essential off-take facility that guarantees ready high value markets for the farmers' produce. Multi-year supply-purchase agreements between the farmer groups and the Warehousing Center will be facilitated and this will be supported with capacity development for better understanding and adherence to the basic tenants and guiding principles of such systems.

23. **Component 4: Monitoring and Evaluation, and Knowledge Dissemination and Project Management and Administration (US\$ 369,644):** This component would support all activities necessary to ensure that the project is implemented in accordance with the project implementation manual. This component will: (i) finance the incremental expenses incurred by the Government in implementing the project and finance various monitoring and evaluation roles.

#### ***Sub-Component 4A. Project Management and Administration***

24. The Ministry of Food and Agriculture will establish a project office at the Crops Services Directorate. A Senior Officer of the Directorate will be assigned to coordinate the day-to-day administrative activities of the project. The financial management and procurement functions for the project will be dedicated to an on-going World Bank funded project "West Africa Agricultural Productivity Program (WAAPP)" also housed within the Ministry of Agriculture so as to reduce cost and enhance efficiency. The conclusion of the financial management assessment is that the financial management arrangements under WAAPP meets the Bank's requirements under OP/BP10.00 and that both WAAPP and the JSDF grant will be manageable in order not to impact on implementation, including fiduciary/internal control aspects of the JSDF grant. Quarterly and Annual Financial reports be submitted to the Bank. In addition, the Financing Agreement will require the submission of Project Audited Financial Statement to IDA within 6 months after year end.

25. There will be a Project Steering Committee (PSC) comprising the Directors of Crops Services Directorate, Directorate of Agriculture Extension Services, Women in Agriculture Development Directorate, Ghana Irrigation Development Authority, the Apex Farmers' Associations of Ghana, and

Agriculture Engineering Services Directorate of the Ministry as well as collaborating agencies i.e. Food and Drugs Authority and the National Agriculture Research System (NARS). The PSC will meet semi-annually and will serve to provide the overall policy direction to the project. An organogram of project coordination depicting the structure of the steering committee, roles and responsible will be provided at appraisal.

**Sub-Component 4A. Monitoring and Evaluation and Knowledge Dissemination**

26. The monitoring and evaluation (M&E) system will be in line with the implementation structure and results measuring framework for the MESTASIP. A dedicated M&E team will put together to ensure effective and timely monitoring of progress towards achieving the development objective as set out in the Results Framework. The grant proposal will conduct a baseline survey on key parameters within three to six months of project inception. This will form the basis for monitoring of progress and achievement of results. An independent evaluation will be conducted at the end of the project to capture project achievements, experiences and lessons learnt for future guidance. Project Implementation Progress reports will be generated quarterly which will be consolidated into annual reports to be shared with all project stakeholders. The project will document the methodologies and processes, achievements, experiences and lessons learnt and circulate it widely including on the websites of MOFA, the World Bank, JSDF and other project partners.

**IV. Safeguard Policies that Might Apply**

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>	<b>TBD</b>
Environmental Assessment OP/BP 4.01	<b>X</b>		
Natural Habitats OP/BP 4.04		<b>X</b>	
Forests OP/BP 4.36		<b>X</b>	
Pest Management OP 4.09	<b>X</b>		
Physical Cultural Resources OP/BP 4.11		<b>X</b>	
Indigenous Peoples OP/BP 4.10		<b>X</b>	
Involuntary Resettlement OP/BP 4.12			<b>X</b>
Safety of Dams OP/BP 4.37		<b>X</b>	
Projects on International Waterways OP/BP 7.50			<b>X</b>
Projects in Disputed Areas OP/BP 7.60		<b>X</b>	

**V. Financing (in USD Million)**

Total Project Cost:	3.66	Total Bank Financing:	2.85
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Financing Gap:	0.00	
<b>Financing Source</b>		<b>Amount</b>
BORROWER/RECIPIENT		0.81
International Development Association (IDA)		2.85
Total		3.66

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<sup>i</sup> Monitoring and Evaluation Component – This is a mandatory component -- see comment vii above