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Creating Markets in Ghana

Country Private Sector Diagnostic

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This report was prepared in consultation with government officials and the private sector in Ghana. Further consultations will be held with the private sector and government officials before the finalization of the report.

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Abbreviations

CoE	College of Education
CPSD	Country Private Sector Diagnostic
ECG	Electricity Company of Ghana
EU	European Union
FCUBE	Free, Compulsory, and Universal Basic Education
FDI	Foreign Direct Investment
GDP	gross domestic product
GES	Ghana Education Services
GIFEC	Ghana Infrastructure Fund for Electronic Communications
GIPC	Ghana Investment Promotion Centre
GoG	Government of Ghana
GWCL	Ghana Water Company Limited
ICT	Information and Communication Technology
IFC	International Finance Corporation
IT	information technology
MEST	Meltwater Entrepreneurial School of Technology
MoE	Ministry of Education
MoFA	Ministry of Food and Agriculture
NSEZ	Northern Savannah Agro-ecological Zone
PICA	Power Innovations in Commercial Agriculture
PPP	Public-Private Partnership
SME	Small and Medium Enterprise
SOE	State-Owned Enterprise
TVET	Technical and Vocational Education and Training
USAID	U.S. Agency for International Development
WIPO	World Intellectual Property Organization

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Executive summary – Creating markets in Ghana

The objective of the Ghana Country Private Sector Diagnostic (CPSD) is to identify the main opportunities for the private sector that will have a strong development impact in Ghana and to highlight the key constraints (both cross-cutting and sector-specific) hampering private sector growth. The CPSD consists of a systematic assessment of all of Ghana's economic sectors along two dimensions: (a) desirability: how private investments in these sectors could help Ghana to address its development challenges; and (b) expected feasibility: how the constraints standing in the way could be removed. This sector scan led to identification seven priority sectors, of which, three were selected to conduct deep dive studies: namely agribusiness, ICT and education.

Ghana's main development challenges. After nearly a decade of strong growth fueled by the commodities boom, which came to an end in 2010-11, Ghana's economy remained undiversified and vulnerable to external shocks, with high levels of poverty especially in the north of the country. About 40 percent of workers work in non-wage agriculture and most urban workers are in low-productivity informal jobs. Ghana has also suffered in recent years from a self-inflicted energy crisis, leading to macroeconomic instability and a financial sector weakened by high levels of bad loans. Going forward, the newly elected government's strategy is to achieve inclusive and sustainable growth, with the private sector as the main driver. In the words of Ghana's President, the aim is to "build the most business-friendly economy in Africa" and foster the competitiveness of Ghanaian firms.[1] To achieve this, the government's agenda includes: reforming the energy sector; improving trade facilitation and the business environment; investing in infrastructure and the social sectors; and diversifying the economy beyond hydrocarbons, gold and cocoa.

Key binding constraints facing private sector growth. Ghana's ability to attract sizeable (domestic or foreign) investment is hampered by constraints at four levels. First, domestic demand (market size) is insufficient to attract large investments that can benefit from economies of scale, unless these are export-oriented. Second, macroeconomic instability creates uncertainty for investors. Third, inadequate availability and reliability of basic infrastructure, such as energy and transport, and difficult access to land, deter investment. Fourth, weak managerial and entrepreneurial skills reduce firms' productivity.

Four main opportunities exist for the private sector to make a major contribution by creating markets in Ghana. First, the private sector can help to develop new high-value export markets, such as horticulture and ICT-enabled services, in which Ghana is already well positioned. Second, the private sector can leverage ICT to improve the performance of Ghana's most important sectors, including for improving government activities and services. Third, the private sector can help to promote efficiency and innovation in the key social sectors of education and health. Fourth, the private sector can play an important role in helping to address the main cross-cutting constraints, such as facilitating trade, providing competitive green energy, opening rural land markets, developing technical skills, and financing promising small and medium enterprises (SMEs).

There are fewer opportunities for *transformative* private sector investments in the other sectors (mining, tourism, retail, construction, water and sanitation, and manufacturing). This is because it would require several years before the necessary conditions could be put in place. For example, manufacturing would require significantly improved access to competitive energy, finance, trade facilitation and skills. Alternatively, leading private sector players are already present in other sectors,

[1] http://ghana.gov.gh/index.php/news/3724-i-want-to-build-the-most-business-friendly-economy-in-africa.

such as in mining, tourism, retail and construction, or these sectors have limited forward and backward linkages, for example in mining, and water and sanitation.

Ghana can seize these opportunities through a mix of public and private interventions:

- **The government should pursue essential economic reforms** to resolve the energy crisis by reforming the regulatory framework for electricity tariffs; facilitating trade, through customs reforms and the Ghana Community Network Systems;[2] and improving the business environment, by passing the PPP Bill and the Company Act, providing one-stop shops, and promoting property registration and contract enforcement. This could be undertaken through, for example, sector-specific reforms in high-priority industries, such as liberalizing the seed industry, removing licensing restrictions and fees on private schools, and promoting investment and competition in ICT backbone infrastructure.

- **These reforms would pave the way for the private sector to invest in projects with a high development impact, including through large firms.** Such opportunities already exist in Ghana in the three priority sectors of ICT, agribusiness and education that are reviewed in this report.

- **The government should also consider supporting the entry of 'pioneer' investors,** which are often in the form of foreign direct investment (FDI). Beyond removing policy constraints, public support for these strategic first movers could be justified where they are instrumental in developing new high-value market/industries but face high entry costs and risks. Public support could take the form of fiscal incentives/de-risking, the facilitation of access to land, the provision of needed infrastructure, the facilitation of investment licensing, and by developing worker the skills of workers and capabilities of local suppliers. Such support should be provided based on the key principles of economic justification (i.e., positive externalities), transparency and a competitive process.

- **Supporting 'promising' SMEs will also be critical**, especially during their acceleration phase. This could be achieved through a combination of public financing and capacity building, technical support adapted to the sector in which they operate, and risk-sharing and mezzanine finance facilities. Similar to the pioneer investors, such support should be provided in an inclusive, transparent and competitive manner. Examples of promising SMEs were found in all three deep-dive sectors.

[2] An ICT PPP with a mandate to provide e-solutions to the government.

1. Context and objective of the CPSD: supporting market creation as Ghana's economy undergoes transformation

Ghana's economic performance and development challenges

In recent years, Ghana's macroeconomic and fiscal instability has undermined growth. After a prolonged period of sustained and inclusive growth in 2000-13, significant external and domestic shocks, amplified by recurrent policy slippages, have created sizeable fiscal and external imbalances, high inflation, exchange rate volatility and unfavorable debt dynamics. In 2016, the fiscal deficit reached 9.3 percent of GDP, while public debt increased to 74 percent of GDP. Domestic payment arrears and contingent liabilities from energy sector state-owned enterprises (SOEs) present additional debt sustainability risks. During 2016, real GDP growth decelerated to 3.5 percent—the lowest level in two decades. The current International Monetary Fund program[3] remains critical in anchoring policy reform and restoring investor confidence.

Ghana's economy is starting to show signs of recovery. Real GDP growth is projected to rise to 5.8 percent in 2017 and 8.9 percent in 2018 on the back of oil and gas production increases. Ghana's recent growth performance has benefitted from the Tweneboa-Eyenra Ntomme field coming on stream in 2016, and the Sankofa gas field, which started production in May 2017. These fields have an expected potential capacity of 200,000 barrels of oil per day and about 300 million standard cubic feet per day of natural gas, respectively, to be reached in 2019. Growth in the non-oil and gas sector continues to be hampered by ongoing fiscal consolidation and possibly some form of Dutch disease. For example, the agriculture and manufacturing sectors as a share of GDP have almost halved since 2005, while the services sector now accounts for over half of Ghana's economy. The banking system remains well capitalized, but non-performing loans rose to 21 percent of total gross loans in June 2017. As a result, credit to the private sector has declined and lending rates have risen.

Ghana's current account deficit narrowed from 7.7 percent of GDP in 2015 to 6.7 percent of GDP in 2016, driven primarily by an increase in gold exports. The current account deficit is projected to narrow further to 6 percent of GDP in 2017, due mainly to a significant increase in oil exports and sustained gold exports. The current account deficit should be fully covered by foreign direct investment (FDI) inflows of 6.5 percent of GDP in 2017. International reserves increased from US$4.4 billion in 2015 to US$5.1 billion in 2016, equivalent to 2.7 months of import cover, somewhat below the 3 to 3.5 months reserve adequacy levels.

The private sector remains an important source of investment in the economy, with gross fixed capital formation at 17 percent of GDP in 2016. FDI performance has been strong, with net FDI at 6.5 percent of GDP in 2016. While much FDI remains concentrated in commodities such as cocoa, and oil and gas, non-traditional sectors are also attracting FDI, such as renewable energy, financial services, information and communication technology (ICT), real estate and construction, and warehousing and storage. Promoting Ghana's private sector competitiveness is a key objective in the country's National Development Strategy, and is supported by targeted programs such as the National Entrepreneurship and Innovation Plan, which aims to provide integrated support for early stage start-ups and small businesses.

[3] Ghana's three-year Extended Credit Facility arrangement for about US$918 million was approved on April 3, 2015. It aims to restore debt sustainability and macroeconomic stability in the country to foster a return to high growth and job creation, while protecting social spending.

At the same time, there are 36 wholly-state-owned SOEs concentrated largely in critical sectors of the economy, such as energy, finance, and infrastructure. Many of these SOEs underperform compared with the private sector, incur financial losses, and are an increasing burden on the budget and the banking system. In the energy sector, in particular, management inefficiencies, lack of timely utility tariff adjustment and the accumulation of arrears have translated into severe power shortages, further undermining investor confidence and compounding the economic slowdown.

While Ghana outperforms its Sub-Saharan (and non-SSA) peer countries in the latest World Bank Doing Business report, enterprise surveys have consistently identified the lack of access to affordable credit, inadequate power supply and the high cost of utilities, as the top constraints to investment. More recently, macroeconomic imbalances, particularly the exchange rate, were highlighted as a new constraint by the Association of Ghana Industries' business barometer. In addition, access to finance has worsened with rising inflation, high interest rates and a surging level of non-performing loans, in particular related to the energy crisis.

Objectives and approach of the Ghana CPSD

The main objective of the Country Private Sector Diagnostic (CPSD) is to systematically identify opportunities for the private sector where it can have a strong development impact, based on an assessment of the desirability of growth of key sectors and the feasibility of tackling the main constraints hampering their growth. In this sense, three objectives of the CPSD are to:

(a) **Identify the most important constraints to profitable and transformative private investments in all sectors of the economy;**

(b) **Identify priority sectors with high development impact, and where key constraints can be addressed, and;**

(c) **Inform new implementation and partnership models to help the government put in place the conditions required for the private sector to reach its full development impact.**

Attaining these objectives will allow the CPSD to play a key role in operationalizing improved ways of maximizing finance for development, following the "cascade" approach principle that allows policy reforms and institution-building efforts to be complemented by private sector investment. By leveraging the private sector and optimizing the use of scarce public resources, financing for development and growth can be maximized.

2. Identifying desirable sectors and key constraints

Sector scan

The sector scan provides an assessment of all economic sectors,[4] considering four questions along the two dimensions of desirability and feasibility (box 2.1):

- What is the desirability of the sector in terms of the potential impact from the sector's output growth on the country's development objectives?
- What is the sector's current performance and how does it contribute to development impact? How fast is it growing in terms of output quantity and quality?
- Under current conditions in the country, is profitable and transformative private sector activity in the sector feasible? If not, where are the constraints?
- To what extent can conditions in the country be improved within a limited time horizon of five years to bring about profitable and transformative private sector activity in the sector feasible?

The sector scan uses a combination of quantitative and qualitative analysis, literature review including the existing evidence base, and interviews with World Bank Group sectoral experts and sector stakeholders in Ghana. Together, they inform an overall assessment summarized by a score that provides a comparable measure across sectors along the key two dimensions of desirability and feasibility, developed in the CPSD methodology.[5]

[4] The sector scan is based on IFC's sectoral classification, adapted to the context of Ghana (see appendix B).

[5] In addition to the scoring of data indicators, a review of the literature and in-depth interviews with sector experts, Ghanaian private sector firms, and other stakeholders complemented the assessment of desirability and feasibility. The CPSD conducted over 150 interviews with leading companies and experts covering all 14 sectors of Ghana's economy.

Box 2.1: Definitions of desirability and feasibility

Each sector's **desirability** in terms of its contribution to development objectives is measured across six categories: inclusion and jobs, economic growth, competitiveness and productivity, integration and connectivity, resilience and stability, and environmental sustainability. Each category is weighted according to a subjective measure of its importance, with weights of 25 percent, 15 percent, 25 percent, 10 percent, 15 percent, and 10 percent, respectively, in the case of Ghana.

Reform **feasibility** is scored across four categories: demand, production factors, key inputs and institutions. Some of these categories contain further subcategories. For instance, key inputs are broken down into energy, transport, finance, and intermediate inputs. Each category is given the same weight.

The four categories of feasibility also correspond to a simple demand-supply market failures assessment of a sector. The first category measures demand for the sector's output. The second category, production factors, measures supply capacity in the country, including labor, land, and natural resources, and pertinent capital, approximated by existing capabilities. The third category, key inputs, assesses market failures in secondary markets that are of importance to the sector and might prevent market creation, while the fourth category, institutions, deals with issues that might create market failures in the sector itself.

Desirability and feasibility dimensions can be roughly equated to measurements of the social returns (desirability) versus the risk-adjusted private returns (feasibility) of investment in each sector. A sector needs to score high on both criteria for the private sector to be able to make a meaningful contribution to development objectives—even if social returns are high, the private sector will not step in unless a sufficient share of the returns can be appropriated by the investing firm to generate a profit.

This methodology was developed by the WBG for the CPSDs.

Results from the sector scan

The sector scan identifies priority sectors for Ghana's economy, namely those sectors with strong desirability and high reform feasibility.

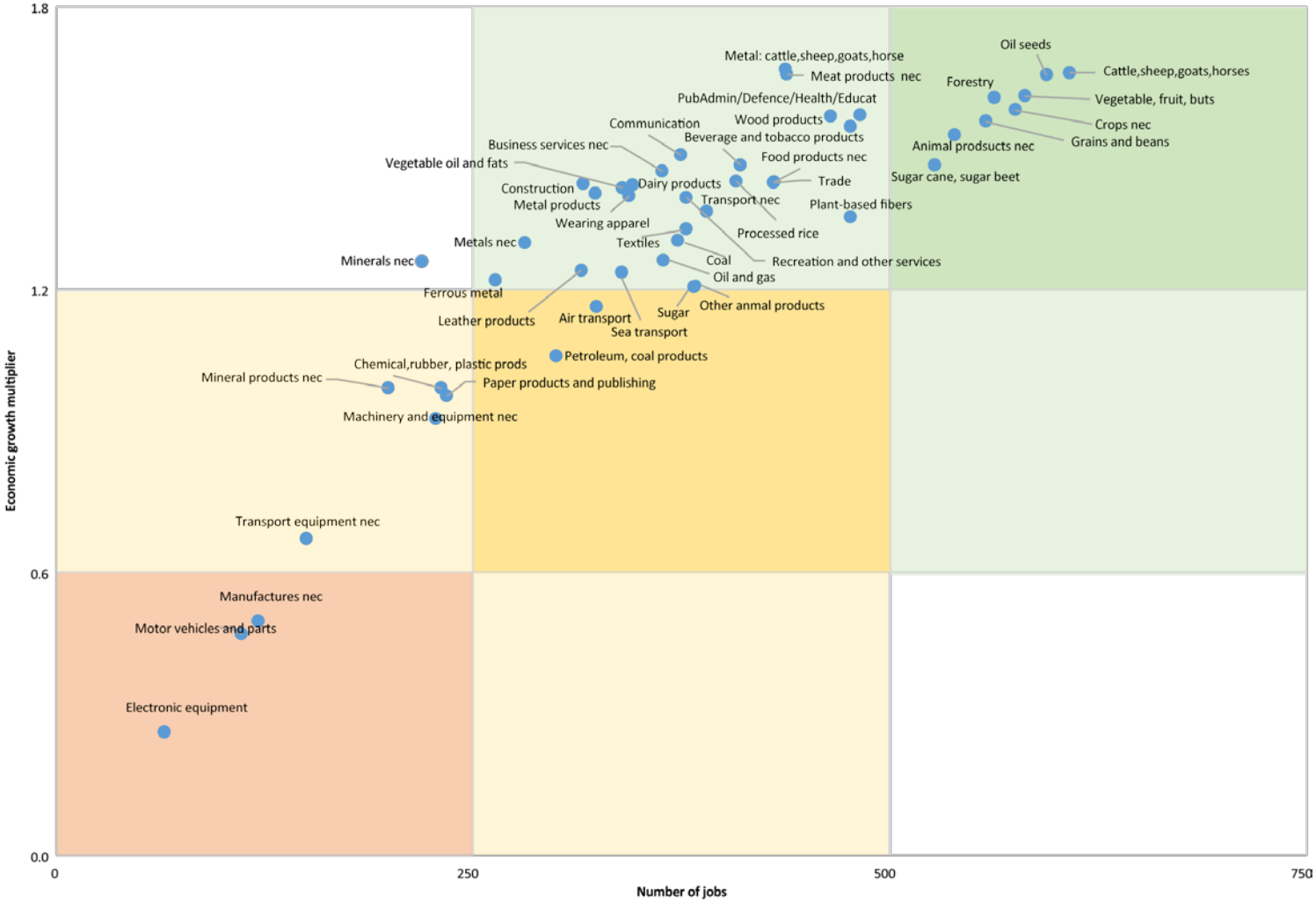
A main dimension of **desirability** of a sector is captured by the number of marginal forward and backward linkages it can generate in terms of value addition and jobs (multiplier analysis).[6] The analysis shows that the **sectors with the most linkages are: finance, education, transport and energy (important forward linkages), and agribusiness (most backward linkages)** (figure 2.1). These results illustrate the general thrust of where Ghana's private sector should likely develop in order to maximize the impact of the economy and development.[7]

The **feasibility** dimensions are measured using a benchmarking exercise of Ghana's performance relative to the rest of the world using a database of over 7,000 IFC investments and close to 150 indicators from the World Bank's 360 database on cross-cutting constraints. The results for Ghana (synthetized in table 2.1) highlight several **cross-cutting binding constraints: demand (market size), macroeconomic instability, poor infrastructure (energy and transport) and land, together with a lack of managerial and entrepreneurial skills.** These are the dimensions in which Ghana's performance is likely too low to attract any sizeable investment. Thus, addressing and resolving these constraints should become government priorities to unleash future market creation. These priorities can be most effectively tackled through sector-specific interventions.

[6] It assumed that all sectors increase by the same marginal amount. Therefore, the respective contribution of a given sector to the economy (large or small) is irrelevant to this state of the analysis.

[7] It should, however, be noted that the analysis can only rely on existing links in the economy and therefore underestimates or overestimates the future links that could arise from the evolution of one sector to more sophisticated and differentiated products and services.

Figure 2.1: Multiplier models: Potential jobs and value-added



Source: Global Trade Analysis Project-9 and IFC Modeling Team calculations.

Table 2.1: Summary of constraint benchmarking for Ghana, share of indicators where Ghana fails to meet minimum acceptable constraint levels, %

	Domestic and/or global market potential	Labor and skills	Geography and natural endowment	Existing capabilities	Energy	Transport	Finance (cost and availability)	Regulatory barriers	Rule of law and property rights	Market contestability	Macro and political stability
Agriculture and Forestry	13	0	14	0	0	0	0	0	0	0	0
Oil, Gas, and Mining	0	0	14	0	0	0	0	0	0	0	0
Utilities	13	0	14	6	22	13	0	0	0	0	5
Construction and Real Estate	13	5	14	6	22	0	11	0	6	0	5
Transportation and Warehousing	13	0	14	0	0	0	0	0	0	0	0
Food and Beverages	13	0	14	0	22	0	0	0	0	0	5
Chemicals	38	0	14	25	11	25	0	0	0	0	11
Nonmetallic Mineral Product Manufacturing	13	0	14	0	0	0	0	0	0	0	0
Primary Metals	25	5	14	6	44	13	0	0	0	0	11
Pulp and Paper	25	19	29	19	67	25	0	11	0	10	16
Textiles, Apparel, and Leather	25	0	14	31	44	38	0	11	0	0	16
Plastics and Rubber	0	0	14	0	22	0	0	0	0	0	0
Industrial and Consumer Products	25	0	14	31	44	38	0	11	0	0	16
Information	0	0	14	0	11	0	0	0	0	0	0
Finance and Insurance	0	0	14	0	0	0	0	0	0	0	0
Collective Investment Vehicles	0	0	14	6	11	0	0	0	0	0	16
Wholesale and Retail Trade	13	0	14	0	0	0	0	0	0	0	0
Professional, Scientific, and Technical Services	0	0	14	0	11	0	0	0	0	0	0
Health Care	38	0	14	19	22	38	11	0	0	0	11
Education Services	13	0	14	0	0	0	0	0	0	0	0
Accommodation and Tourism Services	0	0	14	0	0	0	0	0	0	0	0
Electric Power	13	0	14	0	0	0	0	0	0	0	0
Number of sub-indicators	**8**	**21**	**7**	**16**	**9**	**8**	**9**	**9**	**17**	**10**	**19**

Nott: The percentages indicate the proportion of indicators for each constraint category and each sector where Ghana fails to meet the minimum level observed when successful IFC-sponsored investments have taken place in other countries. Higher percentages indicate therefore an environment in Ghana that is problematic and likely to prevent successful private investments.

The sector scan reveals that top priority sectors with the highest potential development impact and high feasibility include energy, agribusiness and finance. The sector scan also identifies education, ICT, transport and health as priority sectors. Other sectors generally fail to generate similar levels of positive externalities as the priority sectors.[8] Table 2.2 summarizes the results from the sector scan.

Table 2.2: Sector scan key findings

	Desirability	Score	Expected feasibility	Score
Finance and Insurance	Critical input to most industries—opportunity to develop corporate lending (from a low base) and digital finance.	3.9	Government efforts on budget and energy crisis expected to reduce inflation/interest rates; Sector reforms needed to reduce risk (for example, banking supervision, credit bureaus, and collateral registries).	3.8
Mining (excluding oil and gas)	Limited forward and backward linkages—gold is maturing, bauxite and iron ore deposits of relatively poor grade.	2.4	No cross-cutting constraint seen as a red flag but great difficulty to rein in artisanal/informal mining to make it less hazardous to health, also leading to great reputation risks for leading investors and development partners.	3.1
Energy Value Chain	Critical input to most industries—need to reduce outages and cost; opportunity to further develop solar and hydro power.	4.1	Given political will, possibility to resolve the crisis by reforming the state-owned electricity distribution company (reduction in technical and commercial losses) and addressing the potential overcapacity issues.	3.5
Water and Sanitation (Urban)	Demand for services will grow with economy; Limited links to rest of the economy; Important for inclusion and urbanization.	2.9	Presence of solid private actors; But heavy reliance on public funding and currently limited scope for user-based fee financing.	3.5
Transport	Connectivity and links to markets are key for growth; Reliable transport of goods and people is key for high-value products and services; Possibility to develop regional economic corridors.	3.9	Geography and market size are limiting factors; Possibility to leverage private sector through PPPs, as was done for the Tema port (the Tema-Accra toll road).	4.0
ICT	Central to recent and future growth as enabler of many other sectors.	4.2	Lack of availability of equity finance and managerial skills are constraints that international and domestic investors can remedy with 'appropriate' public support; Public support can help the private sector to expand access to ICT skills and infrastructure.	3.8
Agribusiness	Extensive backward and forward links; Opportunity to develop	3.9	Leading investors can help develop new high-value chains with public support to overcome land, water, and farmer skill	3.6

[8] The case of mining should be noted here: while the sector generates important benefits (rents) to the economy, these are essentially through the value of extracted minerals and not through existing or potential links through the economy. The diagnostic is not an assessment of the relative importance of the sector to the economy but more narrowly of its potential to play a transformative role through the development of the associated private sector.

	Desirability	Score	Expected feasibility	Score
	high-value horticulture and agribusiness services.		constraints; Research and development (R&D) needs to be liberalized.	
Light Manufacturing	Entry-level jobs for rural poor.	3.0	Trade facilitation issues and poor business environment overly burden this sector; Long-term public support needed to improve basic skills.	3.2
Other Manufacturing	Transferrable skills; Job creation.	2.7	Trade facilitation issues, poor business environment, lack of access to finance, inadequate skills, and energy issues overly burden this sector and will take time to address.	3.2
Wholesale and Retail Trade	Limited backward linkages at this stage due to limited availability of local supply.	3.3	Difficulties to access land seen as red flag; Limited market size restricts attractiveness to private investors.	3.5
Construction and Real Estate	Backward linkages to construction materials but otherwise relatively limited.	3.2	Difficulties to access land and finance as red flag.	3.4
Tourism	Limited backward and forward (traded services) linkages at this stage due to limited availability of local supply.	3.2	Natural assets not superior to other countries; Dedicated infrastructure still lacking; Health risks (e.g., endemic malaria) remain a concern.	3.3
Education	Large direct employer and value creator with forward linkages to the rest of the economy, including potential for foreign students.	3.9	No major constraints to private entry, with innovative private investors already operating; More private investment could be attracted by leveling the playing field with the public sector, promoting PPPs, and expanding the reach through vouchers.	3.4
Health	Average linkages; Increasing domestic demand; Potential to develop high-value health tourism	3.8	Private sector to be formally recognized in national health system (licensing and certification); Limited market can be overcome through regional health tourism based on availability of specialized skills.	3.3

Figure 2.2 illustrates where sectors stand in terms of desirability and five-year feasibility. The findings highlight three broad categories of sectors: sectors that are highly desirable and impactful in green, sectors with growth potential but limited development impact in yellow, and sectors with below-average direct spillovers on the economy in red.

Figure 2.2: Results of the sector scan

Source: Ghana CPSD team calculations.

3. The three "deep dives"

Selecting the three sector "deep dives" (agribusiness, ICT and education). The sector deep dives are selected from the priority sectors that display strong desirability and feasibility (desirability and feasibility scores of significantly above 3.0). As figure 2.2 showed, the sector scan reveals seven such sectors. In decreasing order of desirability, these are: energy, ICT, transport, education, finance, agribusiness and health. Energy, transport and finance were not selected because they have been already extensively studied and there is good knowledge of how to marry public sector interventions with private sector involvement. Health was not selected because of resource constraints and because it has lower desirability and feasibility scores than education, the other critical social sector (table 3.1). Nonetheless, it is recommended that a deep dive be conducted in the health sector as soon as possible.

The three sector deep dives (agribusiness, ICT and education) illustrate how critical cross-cutting constraints in energy, land, trade, business environment, skills and finance affect key industries, and how these constraints can be addressed in these sectoral contexts, for example through the auction of government land and warehouse receipts in agribusiness. Furthermore, the selected deep dives highlight important linkages between these sectors, such as ICT applications in agribusiness and education. Finally, these three sector deep dives provide a good coverage of the type of interventions needed to enable/promote transformative private investments, for instance through policy reforms, support to pioneer investors and support to promising SMEs.

Table 3.1: Sector prioritization

Sectors	Desirability score	Expected feasibility score	Selection for deep dive
ICT	4.2	4.1	Yes
Agribusiness	3.9	3.6	Yes
Education	3.9	3.4	Yes
Energy Value Chain	4.2	3.5	No - little scope to add value
Transport	4.0	4.0	No - little scope to add value
Finance and Insurance	3.9	3.8	No - little scope to add value
Health	3.8	3.3	No - insufficient resources
Wholesale and Retail Trade	3.3	3.5	No - not desirable enough
Tourism	3.2	3.3	No - not desirable enough
Construction and Real Estate	3.2	3.4	No - not desirable enough
Light Manufacturing	3.0	3.2	No - not desirable/feasible enough
Water and Sanitation	2.9	3.8	No - not desirable enough
Other Manufacturing	2.7	3.1	No - not desirable/feasible enough
Mining	2.4	3.1	No - not desirable/feasible enough

Agribusiness deep dive

Performance and opportunities for the sector to be transformational

Agribusiness, including agriculture and downstream processing activities, is the largest sector in Ghana's economy. Agribusiness accounts for 25 percent of GDP, employs nearly half the workforce and, with 35 percent of exports, is Ghana's main exporter. The sector has been growing at more than 5 percent annually since 2008.

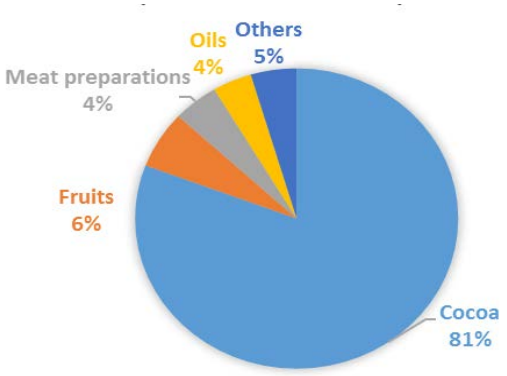
Because of its capacity for job creation and its importance in producing inputs for manufacturing products, agribusiness has high desirability in terms of its potential for development impact. As shown in figure 3.1, agribusiness has among the highest multipliers (1.8) and creates 750 jobs for every additional US$1 million of output. Two-thirds of non-oil manufacturing depends on agriculture for raw materials.

Cocoa remains the main export crop, accounting for 25 percent of foreign exchange earnings and 81 percent of agricultural exports, at nearly US$3 billion in 2016. The second most important export earner in the food category was fruits (US$227 million), dominated by bananas, mangoes, cashew nuts and pineapples, while fresh vegetable exports were in fifth position (US$35 million, mostly yams). Juice products alone earned US$8 million in 2016. Most agricultural products are exported to the United States, the European Union (EU), and Japan, but regional markets are growing and cashew nuts have found new markets in India and Vietnam.

Figure 3.1: Ghana food exports and imports

Agriculture exports are dominated by cocoa (Food exports to the world, 2016)

US$13.6 billion



Source: International Trade Centre Trademap.

Imports of food and vegetables account for 11% of total imports (Imports shares by sector, 2014)

Source: The Atlas of Economic Complexity. http://atlas.cid.harvard.edu.

Opportunities abound to produce for domestic and regional markets, both for industrial use and food consumption. Population growth, high rates of urbanization and rising incomes are driving Ghana's import bill because of increased demand for more quality and safer foodstuffs such as meat, dairy, and fresh and processed vegetables. Between 2007 and 2014, total imports grew from US$8.7 billion to US$13.3 billion, while the proportion dedicated to foodstuffs within that total remained largely unchanged. The total food import bill is projected to increase fourfold over the next 20 years (World Bank, 2017), unless local production is increased.

Box 3.1: Case Study: Eden Tree

Established 20 years ago by a vibrant woman entrepreneur, Eden Tree is a Ghanaian producer and distributor of local and imported fresh agricultural products, including fruits, vegetables and herbs. The company has grown steadily over its lifetime, gradually building up a strong position as a supplier for the retail trade in an expanding market of middle-class consumers wanting assured quality and safety in food. Eden Tree recently upgraded its pack-house facilities following an investment. and has 60 permanent employees, while sourcing from more than 200 smallholders for Ghanaian products. Eden Tree is considering expanding its sales to neighboring countries, including the Abidjan and Lomé markets. However, the high cost of logistics, trade credit and energy are hampering this expansion.

Source: Interview.

Box 3.2: What is the difference between agriculture and agribusiness

Agriculture refers to on-farm production. It includes crops and livestock but not floriculture, fisheries, or forestry.

Agribusiness denotes organized firms—from SMEs to multinational corporations—involved in input supply or in downstream transformation. It includes commercial agriculture that involves some transformation activities (even if they are basic). It includes smallholders and micro-enterprises in food processing and retail to the extent that they are market oriented. These producers and enterprises make up the bulk of agribusiness activity in Africa today.

Source: World Bank, Growing Africa.

Transformational FDI has yet to materialize in the Ghana's agribusiness sector, despite the opportunities, together with a vibrant local entrepreneurial class of actors involved in commercial agriculture and the distribution of food products. If it were to materialize, this would bring tangible benefits in terms of employment, technical know-how and managerial skills, as well as access to new markets.

Ghana provides favorable conditions for agribusiness. As in most African countries, Ghana has vast expanses of arable land with access to large resources of freshwater, such as Lake Volta, which runs through the entire length of the country and is a crucial factor for agriculture. However, what makes Ghana a better place for agribusiness activities is the tremendous improvement in the business environment over the past 20 years. Ghana also enjoys rapidly growing domestic and regional markets importing US$13.3 billion worth of foodstuffs in 2015, while it also has easy and preferential access to the EU and the United States markets, political stability, and resourceful English-speaking workers and farmers.

The Accra plains have the potential to supply growing local and global markets with high-value horticulture. Fresh cut fruits, juices, vegetables, and potential long-term champions, such as avocadoes, are labor-intensive and offer many job opportunities for women. High-value horticulture would also benefit large numbers of smallholders through organized contract farming. Large international companies are on the lookout for increased sourcing of fresh and processed Ghanaian products. Opportunities related to cocoa, plantations and other sub-sectors are not included in this deep dive because they either carry less transformative potential or require additional analysis.

The poorer Northern Savannah Agro-ecological Zone (NSEZ) also has potential to develop commercial agriculture. With about 6 million hectares (ha) of arable land, the NSEZ can grow sugarcane, cassava, cotton, coconut, cashew nuts, shea and livestock—with the potential to create

400,000 jobs, according to a forthcoming World Bank Sector Policy Note: 'Ghana: Transforming and Modernizing Agriculture'. Achieving this will require an increase in the yield/productivity (thus boosting farmers' incomes) on key crops, which only yield about 40 percent of their full potential at present, according to estimates by the Ministry of Food and Agriculture (MoFA) in 2014.

Ghana can attract substantial private sector investment in services for the agribusiness sector, which play a crucial role in the competitiveness of value chain actors. Interactions with stakeholders highlight important opportunities for post-harvest and logistical service providers, including the provision of storage, transportation, cold chain and quality-control solutions, as well as a growing role for the private sector in addressing the gaps in skills at the production, post-harvest and commercialization levels, in partnership with the government.

Main constraints standing in the way

Access to land for large investors continues to be a core constraint because of Ghana's complex land administration and governance system, which is time-consuming, costly and exposes investors to substantial risks. Some companies needed several years in Ghana to secure their land lease in the Volta Region on land that had already been identified for development. This was due to the need to negotiate with local communities and chiefs who have customary rights on the land, as well as administrative inefficiencies in the lease registration system.

Lack of farming, technical and managerial skills, as well as inadequate access to irrigation hamper farmers from developing "productive alliances" with large investors. Public irrigation schemes are insufficient and could be better managed.

Access to finance is difficult in Ghana, because of the risk-averse approach of the financial sector towards the agribusiness sector. This translates into few financial products adapted to the needs of farmers and private sector agribusiness companies, and prohibitively high borrowing rates for agriculture at 36 percent.

Government support for commercial agriculture in Ghana is limited and could be strengthened by addressing a number of key constraints including inadequate public sector-led research and development, combined with restrictive policies on the import of breeder and foundation seeds; erratic policies on outputs, such as the sudden liberalization of imports; input subsidies, together with their poor targeting; moving the tariff waiver for duty-free access of agriculture equipment to a pay-and-reclaim system, which adds a financing burden to enterprises, discourages mechanization and reduces productivity; and under-developed ancillary services, such as the lack of certified testing laboratories and cold storage at the airport.

Maintaining good sanitary and phytosanitary standards of food products remains a challenge. In 2014, vegetables exports worth US$7 million (2,900 tons) were targeted by an EU import ban that came into effect in 2015, causing these exports to collapse. The EU ban on imports of chili peppers, eggplants and gourds was extended in 2016 after a new audit found continuing "significant shortcomings" in standards. The UK's Plant Health Department said that EU member states were "continuing to intercept harmful organisms on Ghanaian material". Ghana has lost market share in these key products and, although steps are being taken to address the pre-export control issues, it may take some time to regain previous market positions.

Operational models to remove constraints and support transformational private sector investment

Supporting the entry of first-mover private sector investors can help to 'open' new markets and mitigate higher start-up costs and risks. To invest in Ghana, some companies relied on support from the Government of Ghana and development partners to address land and irrigation needs. As a result, new and promising high-value horticulture value chains are now being developed for export markets.

Lessons learned by successful private investors in Ghana who have succeeded in overcoming key constraints should be mainstreamed, especially with respect to: (i) access to land; (ii) access to skills; (iii) access to irrigation; and (iv) access to finance (see also suggested joint public/private implementation actions in appendix B). These major constraints are discussed in more detail below.

Access to land. This is key to a successful agribusiness. The government, with support from the World Bank, is engaged in improving land markets through the Ghana Commercial Agriculture Development Project, which develops model land leases between local communities and private investors, and through the Land Administration Project. AgDevCo, with the support of the U.K. Department for International Development, has over a period of three years negotiated the provision of 10,000 ha of land with local communities and chiefs and this land is now available to private investors (box 3.3).

Box 3.3: Case Study: AgDevCo

AgDevCo is a UK-based social impact investor and project developer that operates exclusively in the agriculture sector in Africa. AgDevCo arranges long-term risk capital aimed at early-stage business anywhere in the supply chain. In addition to direct investment, AgDevCo provides on-the-ground technical support and specialist agricultural advice to management teams. AgDevCo currently has nearly US$100 million committed investments in 54 projects spread across eight African countries, plus one pan-continental investment. In Ghana, US$14.5 million is committed to seven investments. The largest investment is in the northern region, at Babator, where US$9.7 million is committed to the development of a 10,369-hectare site.

AgDevCo points out that the challenges facing an incoming investor include dealing with Ghana's informal land tenure system; the lack of commercial farming expertise in the area; the environmental, social and governance risks; community acceptance; and raising of capital. The aim of its Babator Irrigated Farming Hub project is to develop the site to a stage where investors can take over a serviced plot for farming with the immediate risks of a new development reduced.

AgDevCo has secured a 50-year lease with an option for renewal on the entire site, which is fully registered with the government's Land Commission. Of the total site, there is about 5,000 ha of irrigable land on which AgDevCo has completed soil studies, topography, hydrology, irrigation design, and environmental and social impact assessments. Some 1,500 ha is reserved for small-scale farmers who can profit from the services, including irrigation, as well as the cluster. The remaining 3,500 ha will be for commercial farming enterprises to be developed in blocks of 500–2,000 ha.

As a proof of concept, a commercial farm, the Babator Farming Company (BFC) of 356 ha of irrigated land, was developed in 2016. This is used to confirm construction costs and to establish processes for managing and staffing the project, securing permits, and engaging with local stakeholders. In early 2017, 170 ha was planted with maize, sorghum and onions, and further plantings were planned for the second quarter.

In June 2017, AgDevCo announced the sale of 70 percent of the shareholding in BFC to RMG Concept Ltd., a leading West African agribusiness group. RMG is a leading inputs provider and commodities trader, especially through its subsidiaries Wienco Ghana Limited and RMG Ghana Ltd. While partnering with RMG, AgDevCo retains responsibility for the development of more commercial farming companies at Babator and remains the lessee with the traditional authorities. AgDevCo is now looking for investment partners to develop a new commercial entity. Several crop options are being considered, including grains, seed crops, vegetables, and tropical fruits.

Access to skills. The development of a cadre of skilled farmers is essential if Ghana is to move forward with commercial agriculture. Skills are not simply in the form of technical know-how of seeding rates, nutrient requirements or pest control, but must also include the capability to manage farms as businesses, carrying out farm operations at the right time and understanding the bottom-line impact of decisions. This management aspect is often lacking in Ghana and is one reason why extension services with technical advice do not lead to higher productivity. Wienco is combining extension services and training with its fertilizer business (box 3.4), while Agritop, a subsidiary of STL (a leading technology firm from Israel), is providing state-of-the-art training to farmers with the support of the Government of Ghana.

Box 3.4: Case Study: Wienco Ghana

In Ghana's animal feed value chain, Wienco Ghana, an agro-input supplier, has put in place an outgrower model that ensures timely maize delivery and high yields. Farmers involved in that relationship are registered under Masara N'Arziki, a private company and subsidiary of Wienco, and must follow a certain number of rules, including the obligation to sell all production to Masara. Maize producers receive high-performance agricultural inputs, extension services, regular training and business development services. Input credit is provided to ensure the adoption of high-yielding technological packages, and maize shelling services are provided to facilitate harvest and credit recovery. On the Wienco side, margins are made on input provision, while producers gain with a guaranteed market.

Source: USAID-EAT 2011.

Access to irrigation. Through the Ghana Commercial Agriculture Development Project, the government, with support from the World Bank, is supporting private sector participation in publicly funded irrigation schemes through the auction of land for development. Private companies, such as the Integrated Water and Agricultural Development Ghana Limited, are also investing in irrigation systems in Ghana (box 3.5).

Box 3.5: Case Study: Iwad

Integrated Water and Agricultural Development Ghana Limited (Iwad), a subsidiary of investment company African Tiger Holding Ltd (ATHL), is focusing on the introduction of large-scale modernized irrigation and mechanized farming in northern Ghana. The Sisili-Kulpawn flagship initiative began in 2013 with the formation of partnership between Iwad and the parent company, ATHL, with Wienco Ghana (a leading agribusiness group), the government's Savannah Accelerated Development Authority, Wageningen University, and the Rebel Group (an advisory group specializing in the development of large public-private investment projects). Operating in the Sisili-Kulpawn river basin, the initiative targets some 45,000 ha of under-used or abandoned land for developing commercial agricultural practices.

Under the first phase of development, Iwad has established a 400-hectare irrigated commercial farm linked currently to 175 outgrowers at Yagaba. An irrigation system of four center pivots covering 260 ha has been set up with a sprinkler irrigation system covering a further 99 ha, plus drip irrigation for 15 ha and finally furrow irrigation on 39 ha. The nucleus farm of 250 ha is testing rice, onions, groundnut, maize, cowpeas and sugar.

Ghanaian partners are involved by contributing local knowledge of irrigation, crops and soil, research, and hands-on farm training, such as the University of Development Studies in Tamale, the Savannah Agricultural Research Institute (SARI), and the Damongo training college.

From 2016, Iwad signed a cooperative agreement with USAID to co-fund a Power Innovations in Commercial Agriculture (PICA) project to provide efficient alternative power systems to the outgrowers. PICA will construct a solar hybrid power generation system at Yagaba to provide low-cost power for irrigation. It is anticipated that with around 0.8 MW of solar energy, both the nucleus estate and the outgrowers will have access to clean energy at cost savings of about 50 percent.

Under the second phase of development, Iwad plans to develop a longer-term PPP, including water management infrastructure of dam and water conveyance, extending the nucleus farm and outgrower scheme to cover 5,000–8,000 ha and then adding industrial assets for processing sugar; ethanol distillation; a power plant; and processing mills for rice, maize and soya. The proposed large-scale irrigation project for sugarcane production is likely to be situated along the White Volta river bordering the Mamprugu Moaduri and West Mamprusi District of the northern region of Ghana about 100 km northwest of Tamale.

When the Government of Ghana decides on the construction of a large dam (near Pwalugu), the risk of annual flooding will diminish and this will allow for gradual development of additional 10,000 ha up to 15,000 ha.

Access to finance. Cargill in Côte d'Ivoire provides an example of a private sector-led risk-sharing facility, which could encourage the Bank of Ghana's interest in developing other such facilities. The Agriculture Development Fund in Afghanistan is a successful model for extending financing to farmers through off-takers. Within Ghana, several initiatives aimed directly at addressing the financing gap for rural enterprises can be leveraged.

- The Ghana Grains Council is running **warehouse receipts financing** in collaboration with a certification agency.
- The USAID Financing Ghanaian Agriculture Project is a five-year project for **improving financing and investment in agribusinesses** operating in the maize, soy and rice value chains in northern Ghana. Since its inception in July 2013, the project has been offering technical assistance, either directly or indirectly through its network of business advisory service providers, which identify, prepare and package financing proposals for viable agribusiness opportunities. It has also been providing incentives and technical assistance to help financial intermediaries better understand agribusiness and develop products tailored to the specific financing needs of these businesses.

- The Kreditanstalt für Wiederaufbau (KfW) and the MoFA have introduced the Outgrower Value Chain Fund, a **refinancing vehicle for providing finance to medium- and long-term investment projects** through the banking sector. The fund favors the concept of outgrower farming that is based on defined contractual relations between the outgrowers, based on a technical operator, such as processor or trader and a financial operator, such as a participating bank, which provides access to services, inputs and funding.
- The Ghana Incentive-Based Risk Sharing for Agri Lending is being developed by the MoFA and the Bank of Ghana to look into how to better **spread and manage risk**.

ICT deep dive

Performance and opportunities for the sector to be transformational

The ICT sector is a new driver of growth, offering unprecedented opportunities for investment and job creation. Growth of the ICT sector in Ghana has been spectacular and far higher than that of the overall economy. The ICT sector contributed 10.6 percent of GDP in 2016, up from just 2.8 percent in 2006. Average annual growth of the ICT sector over 2009-14 was 30 percent, which has been led by the revolution in mobile voice telephony.

Progress in digitization has been fostered by the government's universal access strategy, which includes service to over 200 community and regional centers. While infrastructure is adequate, with five submarine cable landing stations, black spots and a serious geographical divide remain. The government is investing further in fiber optic backbone projects along the eastern and western corridors, and in data centers in Accra and Kumasi. For rural and underserved areas, such as the Northern Region, the Ghana Infrastructure Fund for Electronic Communications (GIFEC) is a key player. The private sector has been active in deploying mobile solutions to rural areas, such as the MTN and Ericsson Rural Telephony Project.

Nonetheless, while broadband is growing in Ghana, it has not yet triggered a digital transformation on a broader economy-wide level. Despite increases in the provision of lower-priced internet bandwidth, Ghanaians have not yet fully adopted ICT into their daily lives or business operations. One reason is the insufficient provision of broadband internet. In 2015, less than 1 percent of households had access to fixed broadband services. While mobile coverage is very good, broadband access is largely unavailable in rural areas, which means fewer opportunities there. ICT applications in education, agriculture, health and e-government would also contribute to more inclusive growth.

Moreover, the ICT sector has yet to realize its potential in job creation. While not directly a large provider of employment (1.2 percent of jobs in business establishments) it is estimated that for each ICT job, up to eight jobs may be created. The sector is also a positive force for inclusion and has provided opportunities for women and youth.

The digital economy is growing at 15 to 25 percent a year in developing countries. It is not only an important source of growth, but it also benefits other sectors of the economy and is a driver of competitiveness. Estimates of IT impact on productivity are significant. African firms using the internet have on average 3.7 times higher labor productivity than non-users, and 35 percent higher total factor productivity. ICT is expected to have a high impact on the following industries: banking, insurance, retail and transport; a medium impact on manufacturing, agriculture, hospitality, mining, technical

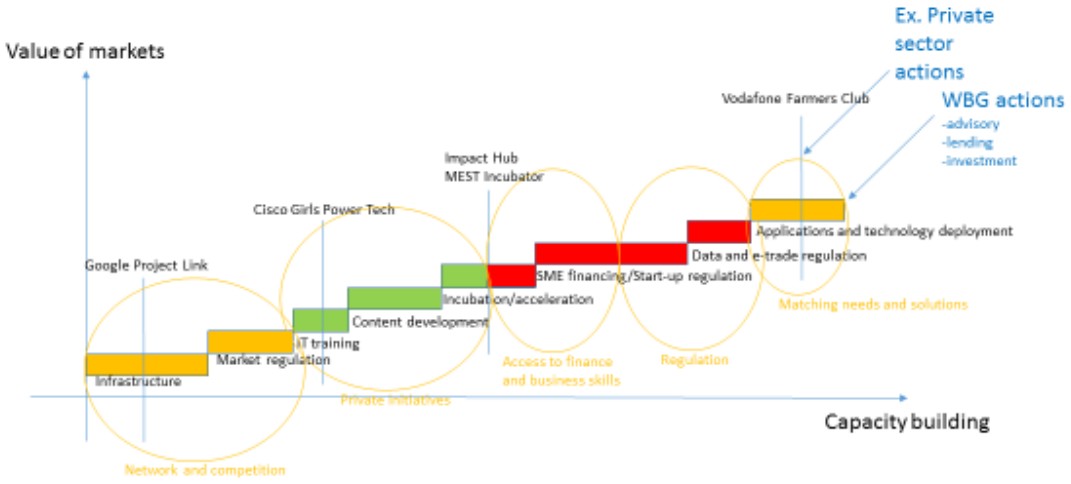
services, education, health-care, real estate and utilities; and a low impact on legal services and construction.[9]

However, there are numerous small-scale private sector initiatives aimed at promoting the digitization of the economy.

Main constraints standing in the way

The shift towards a digital economy has been slowed by many constraints, from the cost of access to data infrastructure, an underdeveloped regulatory framework, to gaps in some skills and lack of market opportunities to scale up. For digital transformation to take place, the relevant building blocks shown in figure 3.2 need to be in place. Some elements are already satisfactorily or partially in place in Ghana: for instance, there is a vibrant environment for start-ups and already decent infrastructure provision. However, other important elements are missing, such as the capacity to transform information technology (IT) innovations into viable market solutions, or the need for more competitive and market-efficient data infrastructure provision.

Figure 3.2: Building blocks of ICT markets



By building the required infrastructure, skills, ecosystem and regulatory framework, the government can enable private actors in ICT to deliver transformative effects. Constraints requiring intervention include the following four key dimensions:

- **While ICT *infrastructure* is adequate, two key infrastructure challenges hamper the sector from achieving its huge potential**. First, addressing the remaining black spots, especially in the rural Northern Region, to ensure the ICT revolution is inclusive. Second, further developing the internet backbone, which currently constrains growth of data-intensive IT services and makes broadband access more expensive.

- **ICT *skills* levels in Ghana are satisfactory, but do not address all market needs.** Training was largely developed to meet the needs of the first ICT revolution in hardware, driven by the needs of telecom companies. Some skills needed for the second revolution, in software, are missing, such as cybersecurity, web-design and marketing, and software developers. Moreover, and

[9] World Development Report, World Bank (2016).

importantly, in a world of start-ups Ghana misses the entrepreneurship and business skills that would allow Ghanaian start-ups to survive in the commercial phase.

- **While the ICT *ecosystem* in Ghana is vibrant, with a rising number of start-ups and micro, small, and medium-sized enterprises in the sector, survival rates are low**. **Two missing links are responsible for this failure.** First, while incubation is offered, acceleration is not (i.e., the "missing middle"), and access to venture capital or business angels is difficult (Ghana ranked 44 out of 151 countries on venture capital).[10] As a result, good ideas rarely translate into commercial success and imported business solutions are preferred. Second, there is a missing link between developers and users. The government needs to encourage the participation of the private sector in the acceleration phase of promising start-ups and by investing in large companies ready to adopt and sponsor locally-developed e-solutions to business problems—a space that Meltwater and Impact Hub are trying to move into already, but on a small scale.

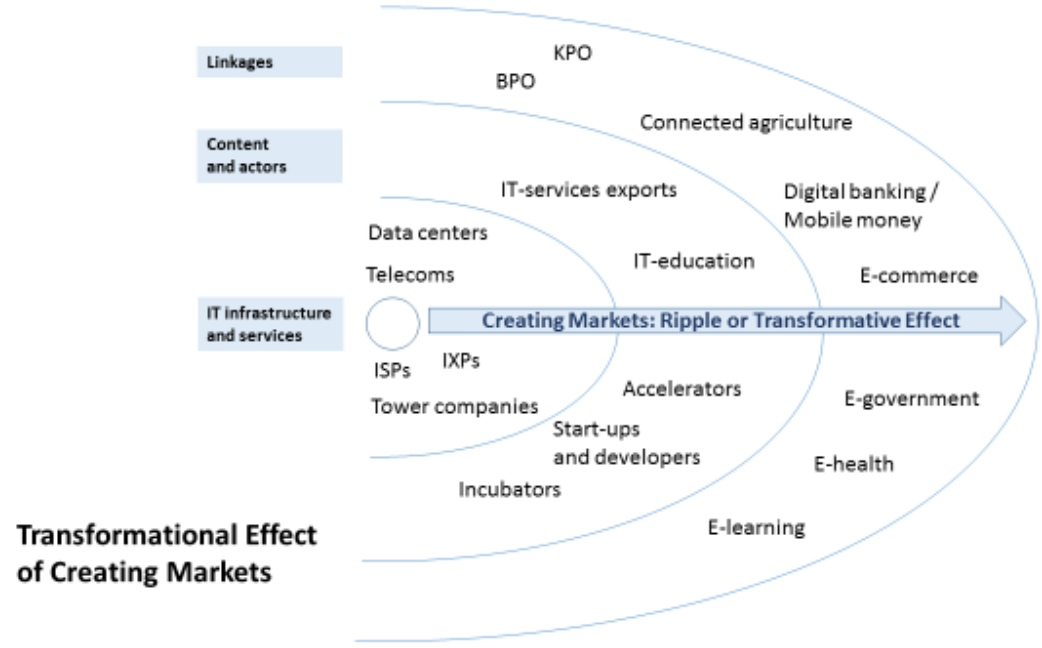
- **Recent years have seen a surge in the development of the *regulatory* framework for the ICT sector and the digital economy, but it is facing two important challenges**. First, important regulatory gaps remain, as legislators try to adapt to new technology and market developments. The prevailing feeling in the private sector is one of unpredictability and insecurity. Gray areas and regulatory gaps concern, for instance, data storage, consumer protection and digital laws. Second, implementation of reforms has been weak (for instance, the allocation of licenses) due to a lack of resources and competence. The role of government as a market-maker in the regulation of competition and access, and as a provider of IT infrastructure and services, can be improved.

What will it take to seize the opportunities?

The largest markets and the truly transformative impact of ICT are through linkages, that is the leverage of ICT applications in other sectors. However, this impact will not be achieved if the building blocks, such as infrastructure and other parts of the ecosystem—actors and content—are not in place (figure 3.3). They must both be addressed in a comprehensive effort to create digital markets for Ghana.

[10] World Bank (2016) offers a review of Ghana's private equity and venture capital landscape.

Figure 3.3: Effect of creating markets in the ICT sector



Furthermore, the action of public authorities and private sector development should proceed in a complementary fashion, with the government as an enabler and the private sector as the actor of market creation. Specifically, this translates into the following strategic actions going forward (see also suggested joint public/private implementation actions in appendix B).

Expanding data infrastructure:

- **Investing in infrastructure development by exploring new opportunities for the private sector** to provide solutions, such as infrastructure-sharing (e.g., with tower companies), the use the untapped capacity in the electrical grid for cable deployment (e.g., the West African Power Pool and Ghana Gridco), the promotion of further investment into internet exchange points, and in cable-leasing of capacities.

- **In mitigating constraints to broadband access due to infrastructure shortcomings, the private sector has developed a wide range of pragmatic lower-tech solutions.** These are especially directed at the underserved part of the Ghanaian economy, and such solutions aimed at improving IT literacy and filling equipment gaps. Firms in Ghana have developed innovative solutions using USSID, voice telephony, TV transmission, etc., and adjusted solutions to clients (for example, mobile communication with farmers and websites for large companies). ISPs have also explored less-expensive solutions, such as wireless and narrow band. These are examples of pragmatic solutions that reach out to rural and poorer communities, and should be considered candidates for scaling up.

- **The role of government agencies and SOEs in the commercialization of access to IT infrastructure should be reviewed with the aim of increasing access to public infrastructure on commercially neutral terms**, including possibly divestment and PPPs in some activities (e.g., the National Data Center and GIFEC). With respect to possible World Bank Group support, this could be a prime example of the application of the "Cascade" approach, whereby policy reforms and institution-building supported by IBRD/IDA are complemented by private sector investment enabled by the IFC and the Multilateral Investment Guarantee Agency.

- **The regulatory framework will need to be strengthened to enable more competition and provision by the private sector of key infrastructure services** (such as backhaul fiber). The government has a role to play in achieving universal access, with PPPs to deploy the network in remote areas or dedicated solutions (e.g., better use of the Universal Access Fund) to provide internet access in critical areas, such as schools and universities.

Skills gap:

- **Increase the private sector's contribution in the field of ICT education and training**, a sector in which it is already very present, including through participation in public universities, such as the Ghana Technology University College (GTUC). Among the 68 private universities in Ghana, Ashesi University College is one of the leading institutions driving innovative thinking in developing quality curricula. Foreign participation has been important (e.g., Lancaster University, Coventry University with GTUC, and BlueCrest) and contributed to the raising of standards. Specific programs have been developed by IBM, Cisco, Oracle and Google. Some private institutions have tried to address the problem of business skills by bringing together IT training and business incubation: Meltwater Entrepreneurial School of Technology (MEST), a center of excellence with 60 students from five countries, is a prime example.

Growing the ecosystem and IT applications:

- **Developing partnerships with key private sector actors to provide venture capital and support acceleration, mentoring and market intelligence services, as well as with financial institutions to provide new ways of financing**. This would help to meet demand for early-stage financing (post-incubation). Where Ghana's market may be too small to attract support, regional/supra-national partnerships should be explored.

- **Developing partnerships with large companies in Ghana that have a business interest in developing platforms** connecting affiliated businesses. This could be explored with telecom companies first, but also with strong market players in key sectors (see below).

Pursue regulatory reform in ICT:

- **The role of government in creating a healthy and competitive market should be strengthened**. Commercial activities conducted by government agencies should be examined and eventually transferred to the private sector, and the regulation of market access and competition in certain segments of the sector, for instance broadband, would need to be strengthened to bring down prices. More broadly, the government would benefit from wider private sector consultation, and a better articulation of public-private initiatives, for example, for data centers, training and incubation.

Finally, beyond developing opportunities in the ICT ecosystem itself, there are opportunities to support linkages with key strategic sectors that could act as vectors of ICT-led transformation in the economy. Interventions with the expected largest impact, notably on inclusion, are as follows (figure 3.4):

- **Mobile banking.** It is important to move from mobile money transfers—already well developed in Ghana—to true mobile banking with e-payments and savings. Mobile banking and fin-techs are at an early stage of development in Ghana. Only 10 to 20 percent of Ghanaian mobile phone users

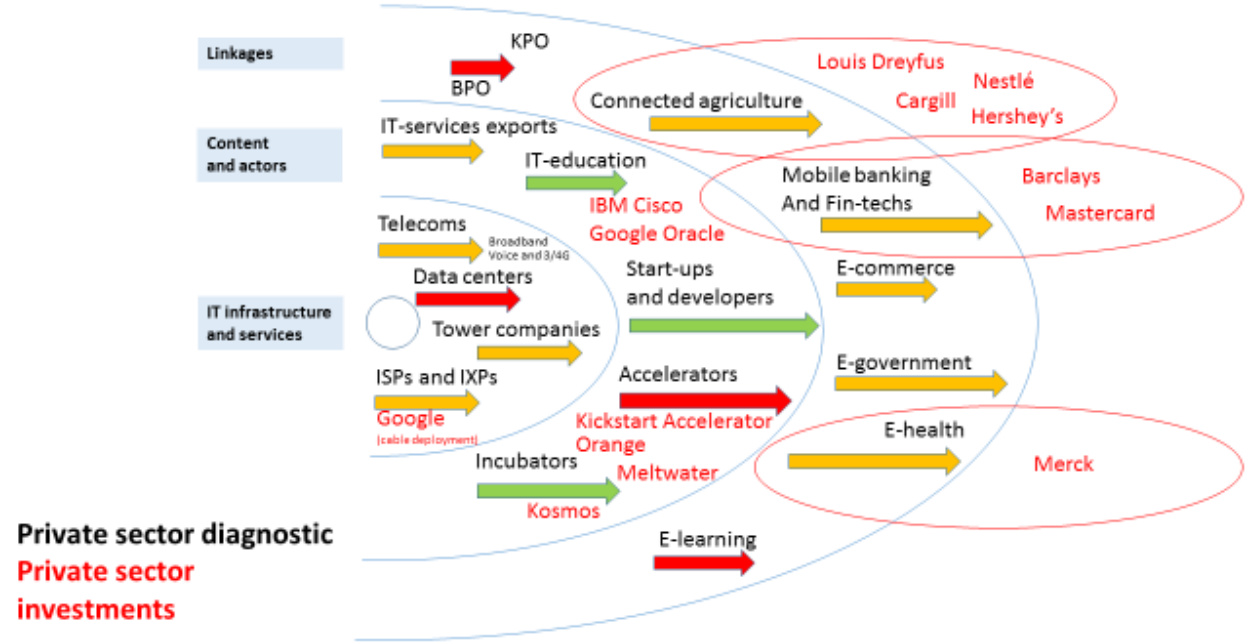
have a mobile wallet, compared with 80 percent in Kenya. Mobile banking has numerous positive potential impacts, including improved access to finance, and greater efficiency of value chains and the provision of government services, such as in making utilities payments.

- **Agriculture.** From food waste reduction to increased value-chain efficiency and higher incomes for farmers, ICT applications in agriculture could have major impacts on poverty alleviation and inclusion. Many initiatives have already been launched, but the commercialization phase has proved difficult. Large buyers, such as agribusiness firms or cooperatives, should connect with local providers of business e-solutions. There is demand from Cargill, Nestlé and Danone, directed towards telecom operators and other potential partners. For example, Cargill has started to pay its farmers directly using mobile money, while Nestlé is looking into a similar option.

- **Health.** ICT applications in the health sector could contribute to improved access to health services and health insurance, and could also help tackle the problem of counterfeit drugs. Opportunities exists for investment by large and solid partners, such as venture capitalists (e.g., Deutsche Bank, Orange), and pharmaceutical companies or hospitals (e.g., Merck, Pfizer, Sanofi, Bayer). The deployment of e-health solutions could also help to achieve greater impact for public health programs.

- **E-government.** The government can drive ICT market development through its own demand for e-services, both in terms of improving an interface between citizens and government (the more traditional aspect of e-government), and in terms of systematically incorporating e-based solutions into its own service delivery. The government has already developed some e-government programs with help from the World Bank (the eGhana, eTransform projects). Potential effects include better access to services, cost reductions and a unique digital ID that could be one of the most transformative of actions—and should be a targeted priority action.

Figure 3.4: Performance and potential of each market segment



Note: This shows the performance (color of the arrow from poor/red to good/green) and potential to achieve stronger impact (length of the arrow) of each segment of the market and maps illustrative interventions of the private sector.

Box 3.6: Untapped potential in IT-enabled services or Business Process Outsourcing: Did Ghana miss the boat?

Ghana has been ranked the No. 1 destination in Sub-Saharan Africa (ahead of Mauritius and Kenya) and No. 29 globally (out of 51 countries) in the 2016 A.T. Kearney Global Services Location Index. However, this contrasts with the poor performance of Ghana in terms of attracting and keeping activities in the IT-enabled services (ITeS) sector. In 2009, Ghana was already ranking 15th globally (that is, better than today), but the market has not developed, and large investors who came to establish in Ghana have since left.

The Ghanaian ITeS market is small and fragmented, with about 20 registered business process outsourcing (BPO) companies in the country. Ghana is underperforming. For example, Mauritius (second to Ghana in the attractiveness index) already employs 20,000 people in BPO; Senegal, despite its lower ranking, has more than 10,000 jobs in BPO; and Morocco has more than 300 call centers and nearly 60,000 jobs.

The potential for ITeS is important, with average annual growth of 9 percent in South Africa and over 13 percent in India, and a global market over US$300 billion for BPO alone (another US$650 billion for IT services). The Philippines BPO sector alone employs 1.2 million workers for a total output of US$25 billion. Ghana also seems to have all the pre-requisites for success in the ITeS sector: according to A.T. Kearney, "Ghana is a favored BPO destination because Ghana has a large pool of English-speaking labor, competitive labor costs differential to USA and UK, and geo-political stability." It also has broadband access at a decreasing cost in the main cities and modern buildings for hosting the activities.

But the global ITeS is quickly evolving and several trends affect the prospects for market creation in Ghana. Recent years have witnessed a near-shoring trend, that is, the repatriation of services once outsourced in offshore locations. Moreover, computerization is threatening numerous jobs in the sector. The simplest tasks that could have been be performed in countries such as Ghana are now performed by machines (for example, blockchains or Business Process as a Service), and Ghana might have missed its window of opportunity. But there may be greater opportunities for Ghana in Knowledge Process Outsourcing (KPO) and Legal Process Outsourcing (LPO) if it strengthens its professional skills and becomes more competitive in that segment of the market.

Education deep dive

Performance and opportunities to be transformational for the education sector

Over the past decade, Ghana's Free, Compulsory and Universal Basic Education (FCUBE) program has allowed the country to achieve the second Millennium Development Goal on universal primary education. The gross enrollment rate GER at the primary level reached 118 percent in 2016, and the completion rate 101 percent in 2015. At all levels of education, Ghana compares well with other countries in sub-Saharan Africa.

Government policy towards increasing education access has contributed to these accomplishments. In 2008, two years of kindergarten education were added to the FCUBE program, thereby adding ages 4 and 5 to the range of 'basic education'. This has led to an increase in the number of kindergarten schools and enrollment. In 2017, the government proposed making senior high school also free. However, industry participants fear this may lead to similar issues that were triggered by the FCUBE program, such as overcrowding, a teacher shortage and negative impacts on learning outcomes in public senior high schools.

The public sector has increasingly struggled to keep pace with demand. Weak capacity in the public sector to deliver education has manifested itself in three sets of issues and created an environment in which the private sector has taken an increasingly larger role in providing education (particularly at the basic and tertiary levels):

1) Enrollment at the secondary level is lagging. Transition rates to post-primary education remain low. While the transition rate from primary school Year 6 to junior high school Year 1 is 99 percent, this drops to 68 percent from junior high school Year 3 to senior high school Year 1 (Ministry of Education, Science and Technology, 2016). Admission into senior high school Year 1 has increased over the past three years, with transition rates improving from 51 percent in 2012 to 68 percent in 2015, as efforts have been made to expand the capacity of public senior high schools.

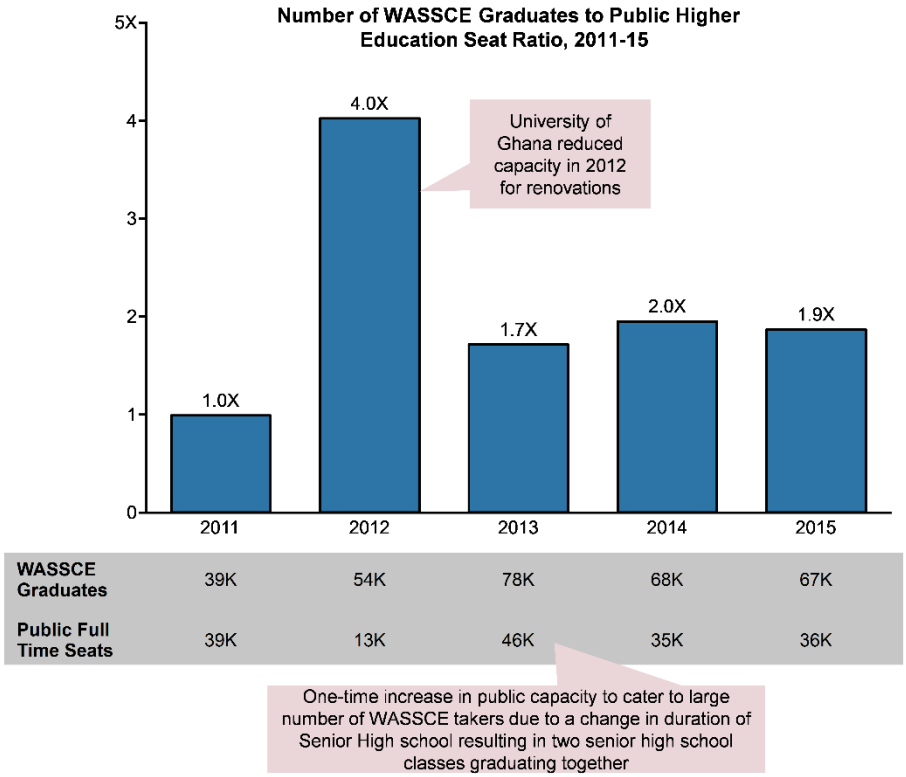
2) The quality of education is variable and education lacks inclusiveness. The proportion of children and young people at the end of lower secondary education achieving at least a minimum proficiency level in mathematics was 25 percent for males and 18 percent for females in 2011, and a total adult literacy rate of 77 percent in 2015.[11] The quality of teaching is adversely affected by the lack of sufficiently trained teachers—Ghana faces a shortage of over 140,000 trained teachers across its public and private schools—and by teacher absenteeism. Furthermore, geographic and income inequality in education are pronounced in Ghana: transition rates to post-primary education are especially low for children from families in the poorest wealth quintiles (World Bank Group, 2017). Although the government spent 6 percent of GDP on education in 2014, this spending was uneven across regions, in terms of supplying trained teachers and per child expenditure (i.e., it is lower in rural areas).

3) The capacity of public universities has not kept pace with demand, and only half of all applicants to public universities can be admitted (figure 3.5). Student enrollment in tertiary education is growing at 10 percent annually, from 175,000 in 2011 to 267,000 in 2014 (Ministry of Education, 2016). However, the tertiary gross enrollment rate remains at only 18 percent, as opposed to a target of 25 percent set by the government, leaving room to improve access to higher education. The demand for tertiary education is expected to continue to grow strongly, given increasing enrollment at the senior high school level.

To keep up with rising demand and high gross enrollment rate targets, the government is considering distance education as a key solution. Distance education comprises about 15 percent of total tertiary enrollment, with University of Cape Coast being the largest provider (about 37,000 enrollments) (Larkai et al., 2016). Apart from public universities, some private universities, such as Laweh Open University College and Accra Institute of Technology, also offer distance education. However, the presence of private providers is limited, and the private sector has less than a 1 percent share of total distance education enrollment (Larkai et al., 2016).

[11] Ghana Sustainable Development Goal 4: Quality education country report and UNESCO Institute for Statistics.

Figure 3.5: Applicant-to-seat ratio for higher education



Source: Ministry of Education, Parthenon Survey of Institutions (n = 31), Industry Participant Interviews, Parthenon Analysis.

Against this background, the private sector has become an increasingly important player in the provision of education in Ghana, and enrollment in private schools has grown at a faster rate than public enrollment (figure 3.6). This is particularly true for tertiary education, but also holds for pre-primary and primary education.[12] However, the role of the private sector is less pronounced in other segments of the education sector. At the senior high school level, the share of private enrollment has actually declined, reflecting difficulties of private senior high schools in meeting higher capital requirements and the long-standing positive reputation of some public senior high schools.

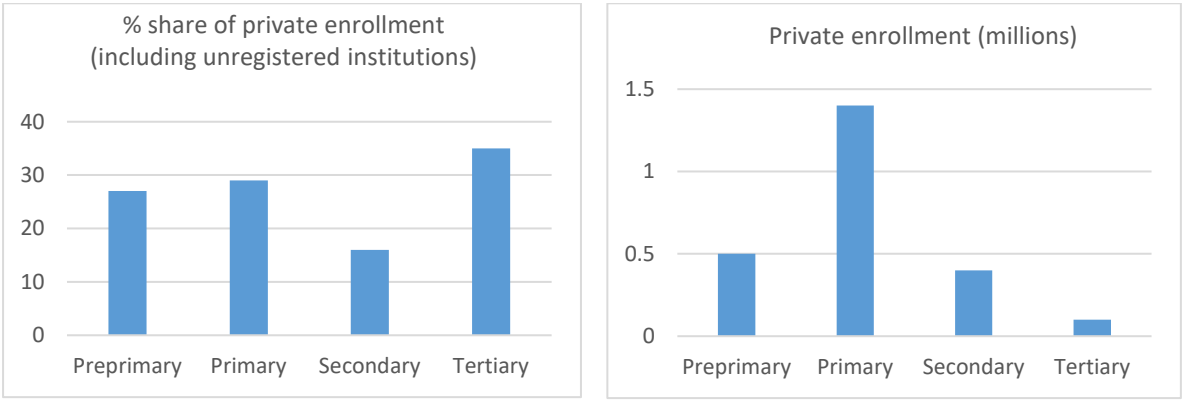
Technical and vocational education training (TVET) in Ghana remains dominated by the public sector, accounting for most TVET enrollments. Private TVET enrollments form an increasingly small share of this segment, declining from about 15,000 in 2012 to 4,000 in 2015, because private TVET institutions have been unable to sustain themselves.

Lastly, the private provision of ancillary education services—student and institutional financing, and the provision of educational content, software, hardware, or assessments—is still at a nascent

[12] Kindergarten enrollment in the private sector grew by 9 percent from 2011 to 2016, compared with 2 percent growth for public schools, increasing the market share of private schools from 21 percent to 27 percent in that same period. Primary and secondary private schools increased their market share by 5 percent between 2011 and 2016, capturing 70 percent of the incremental growth in the market. Enrollment rates in private schools stood at 29 percent of total primary enrollment and 16 percent of total secondary enrollment in 2016 when counting unregistered schools. The private sector in tertiary education grew twice as fast as the public sector between 2011 and 2016 (at 13 percent per year vs 6 percent), and accounts today for 20 percent of the 420,000 students. Two private universities, Central University, received charter status.

stage. A few players have emerged in this segment, such as Jackson College of Education for teacher training, Brighter Investment for student financing, Eneza Education in ed-tech, and Opportunity International, Sinapi Aba Trust, and Edify in institutional financing. Innovations in ed-tech in particular could play an important role in the direct provision of education, as well as in delivering services such as teacher training and textbooks, thereby improving access to, and the quality of, education.

Figure 3.6: Private sector participation in Ghana's education provision



Source: Education Sector Performance Report 2016 and Parthenon-EY Research.

Box 3.7: Case study: Ashesi University College

Ashesi University College is a non-profit liberal arts college, catering to 800 students. It received an investment of US$2.5 million from IFC in 2009 for campus expansion. It has a strong brand, with placement rate as high as 93 percent (within six months of graduation). It works with the MasterCard Foundation to provide scholarships to its students. It has a strong focus on quality of education to distinguish its graduating cohort and it achieves this by having low student-teacher ratios and an acceptance rate of 20 percent.

Given the limited space at public universities, the private sector could play an even larger role in meeting growing demand for tertiary education, by helping to increase capacity at the secondary level (particularly given the introduction of free senior high school), and improving the quality and equity in access.

Prospects for private sector engagement to increase its presence in the sector abound, based on the following drivers of growth:

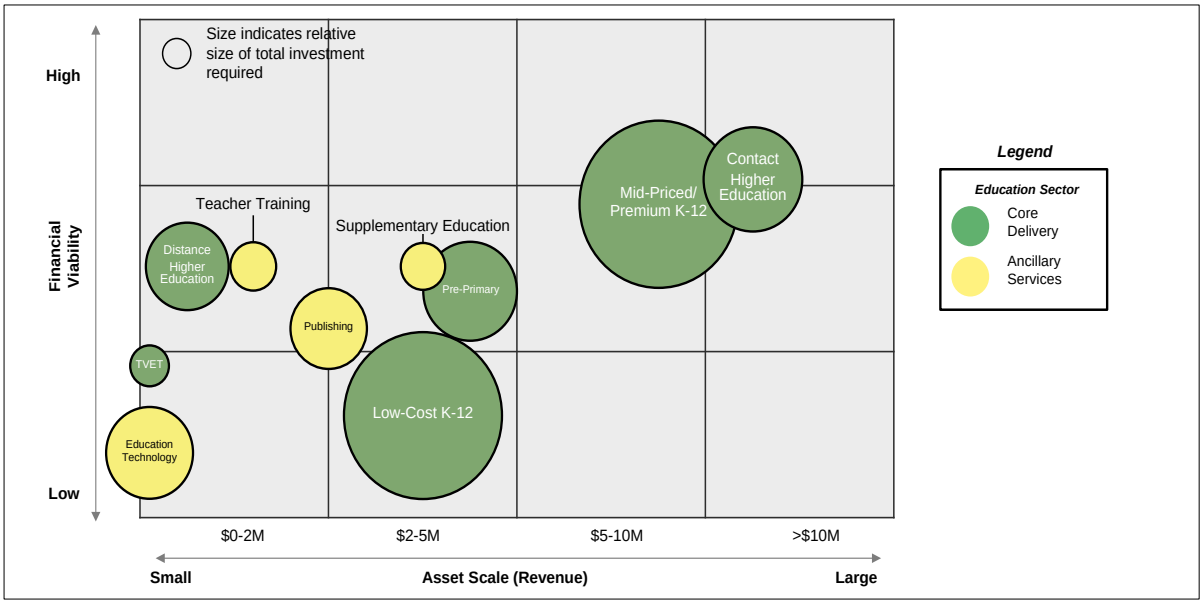
- **Rising affordability and spending power:** About 46 percent of Ghanaians are now classified as middle class, compared with an African average of 34 percent (African Development Bank, 2011). With rapid urbanization over the past three decades (from 30 percent in 1957 to 54 percent in 2015), Ghana's urban population has more than tripled (from 4 million to 14 million) and is outpacing rural population growth. Urbanization is projected to increase to 72 percent by 2035.
- **Challenges in access to public education:** With the introduction of the FCUBE program in 1994 for children aged 6 to 14, a school feeding grant (free food provision) in 2005, and an additional two years of kindergarten education (ages 4 and 5) to the FCUBE program in 2008, enrollment in public education has surged. But the capacity of public schools has failed to match rising demand, thereby opening the door for low-cost private schools.

- **Hidden costs:** Albeit officially free, basic education also has costs, starting with shoes and uniform, at up to Ghanaian cedi 90 (about US$20) for older children—a significant sum for people lacking any disposable income (The Guardian, 2015). Grants from the central government can be used to fund free lunches and other extras, but these funds often arrive late and cannot be relied upon.
- **Poor perceived quality of public schools:** A report based on a survey conducted in Kasoa, Ghana, found that families perceive private education to be superior to that of government schools. This perception is primarily based on better infrastructure and lower rates of teacher absenteeism in private schools. Reinforcing this, 83 percent of families in Kasoa have at least one child in private school, while 29 percent of all primary schools in Ghana are private (World Bank Group, 2017).

Investment opportunities in education are sizeable (figure 3.7) and could be realized in the following ways:

- **Attracting development impact investors and development-partner backing for private low-fee primary and secondary schools.** With low access to, and quality of, public schools and low affordability among the population, there is significant potential for investment and consolidation of unregistered schools in the low-fee private school segment (less than US$150 annual price point). Due to the long gestation period and lower returns, these opportunities are more suited to development impact investors and development partners.

Figure 3.7: Five-year investment opportunity for capacity addition in private education in Ghana



Source: Parthenon Analysis.
Note: Chart is illustrative and represents the range of well-operated businesses and organizations observed during the development of this report, intended to provide overview of the opportunities available and the differences between the sub-sectors. Individual enterprises may fall outside the ranges shown.

Box 3.8: Omega schools—A growing chain of low-fee schools

There are an estimated 500,000 students studying in 7,000 low-cost private schools, accounting for 40 percent of all basic private schools in Ghana. These schools are typically small in scale with an average size of 80 students per school. The average annual expenditure on education by households in Ghana is US$100, making low-fee schools the only affordable option for a significant proportion of the population. Moreover, only 15 percent of the population can afford schools with fees higher than US$500.

Omega Schools is a chain of low-cost schools in Ghana and Liberia, which is backed by Pearson's Affordable Learning Fund. The schools offer an innovative daily payment option charging US$0.65 per day. This offers a flexible low-cost payment plan, which is necessary to meet the cash flow of 'bottom of the pyramid' families. Omega ensures that this fee matches the out-of-pocket cost of a public school. It currently has 20,000 students enrolled across 38 schools and is planning to double its enrollment in the next year by adding schools and expanding to new countries.

Sources: Ghana Statistical Service 2014, Parthenon-EY Research and Analysis; Paula 2012.

PPP opportunities in senior high schools. The net enrollment ratio for senior high school is only 50 percent, with significant growth potential. This presents an opportunity for expanding higher levels of private sector participation. Moreover, the government's recent commitment to make public senior high school free, combined with its limited resources to provide quality education for everyone, opens up opportunities for PPPs. Public senior high schools are already crowded, with the enrollment of 1,300 students per school compared with 217 students per private school. PPPs could help to expand secondary education and improve access, while also limiting the fiscal burden on the government (box 3.9).

Box 3.9: Education PPP in Brazil

Belo Horizonte, the third-largest city in Brazil, has made early education a priority in an effort to improve the competitiveness of its workforce in the long term and support the national government's policy goals. With support from IFC, it turned to private sector funding and expertise to expand and strengthen its pre-school and primary school system. The concession—Brazil's first PPP in the education sector—was awarded in July 2012. The Educar Consortium, led by Odebrecht, a leading Brazilian construction company, won the 20-year concession to construct primary schools and preschool facilities. It will also operate non-pedagogical services, such as maintenance and security. The partnership will expand access to early education in Belo Horizonte, reaching 18,000 additional children and creating new jobs in the education sector.

Setting up new universities. The expected increase in demand for private tertiary education, particularly given the upcoming inclusion of senior high school in the FCUBE program, coupled with the limited capacity of public universities, presents a significant opportunity. Private universities are already emerging (box 3.10). Moreover, the number of international students studying at Ghanaian universities increased from 5,300 in 2011 to 10,700 in 2014, with foreign students now comprising 15 percent of total private enrollments.

Box 3.10: Lancaster University Ghana

Started by the TransNational Academic Group (previously known as TNE), Lancaster University Ghana was the first full-fledged foreign branch campus to open in Ghana. Started in 2013, it has seen a rapid growth, achieving an enrollment scale of 500 students in four years. It has strong focus on promoting science, technology, engineering, and math programs and is expanding to a new campus to accommodate facilities. It also has an in-house teacher training program called 'ICAP'. In an otherwise constrained higher education segment due to public university affiliation, Lancaster University Ghana has been successful in promoting innovative programs, promoting quality education by getting UK professors to the Ghana campus, and giving students an opportunity to complete a part of their course at Lancaster University in the UK.

Main constraints standing in the way

Growing private sector provision of education is in response to strong and unmet demand. With demand for quality education services continuing to grow, the private sector could play a role in increasing access to education and achieving better learning outcomes, at all levels of education.

While the provision of private schooling at the primary level is already widespread, the sector remains dominated by informal and unregulated operators. Time and cost requirements for registering a school have led to many unregistered schools.[13] Arguably, private provision, such as through low-fee schools, has helped to increase access to education, but these operators are probably not meeting all the latent demand and are not operating on an efficient scale. Unregistered and fragmented private schools quickly reach limits in terms of efficiency and the standard of education they can provide.

At the secondary level, constraints will become more binding with the free senior high school policy. Thus, the question of the optimal use of limited government resources needs to be raised. While provision of secondary education by private schools has decreased, at the same time many public schools rely on private funding from wealthier parents to complement their resources. Limited resources will have to be spread more thinly, or allocated more strategically, towards the neediest segments of the population.

Across the board, from pre-primary to secondary, the lack of institutional financing limits growth of private education. For most individual and small operators, establishing or expanding educational institutes are a challenge, with high land prices and infrastructure development costs, coupled with high interest rates, creating significant market entry barriers.

There is strong interest in investing in the tertiary sector, and large unmet demand, but two constraints affect the improvement of access to university-level education. First, lack of student financing limits access to higher private education even when there is unmet demand. The government's Students Loan Trust Fund (STLF) has not been able to meet the large demand for student financing. Second, private higher education institutes need to move from being 'university colleges' with affiliation to a public university to receiving charter status, at which point university colleges convert to universities and are awarded full degree-granting authority. Mentoring public universities charge heavy affiliation fees to private university colleges, based on the number of courses

[13] For instance, the cost of sending a child to an unregistered school is 12 percent of the minimum wage, whereas the same for a registered private school is 20 percent of the minimum wage due to additional costs incurred in fulfilling the regulatory requirements.

affiliated and the number of students per course. One such private university with an enrollment of 4,000 across seven broad disciplines pays US$45,000 to US$50,000 annually. As a result, about 60 percent of private university colleges have low enrollments (less than 1,000), and some are on the verge of closing due to financial unsustainability.

Despite distance education picking up in Ghana, there are currently no regulations to monitor the scale and quality of this mode of delivery. The government should define these regulations to help expand access to quality tertiary education.

Operational models to remove constraints and support transformational private sector investment

The government has led the drive for improved access to education opportunities. Markets have naturally responded to higher demand and contributed substantially to Ghana's recent success in expanding the market.

As a natural continuation of this dynamic, the public authorities and private sector development should continue in a complementary fashion, translating into the following strategic actions going forward (see also suggested joint public/private implementation actions in appendix B).

Including unregistered schools within the formal system

There is an opportunity to create mechanisms for existing unregistered schools to become part of the formal education system so they can access government funding and bid for opportunities to join in partnerships with the public sector. From the government's perspective, this would facilitate tracking the scale and extent of the private sector in education, as well as implementing quality assurance mechanisms. Kenya, for instance, adopted a policy in 2009 of recognizing non-formal schools (box 3.11).

Box 3.11: Alternative Provision of Basic Education and Training

In recognition of organizations providing basic education and training to children outside of the formal school system, the Kenyan Ministry of Education, Science and Technology (MoEST) adopted the Alternative Provision of Basic Education and Training (APBET) policy in 2009 to recognize non-formal schools and set up a framework to bring them into the formal system. In September 2015, the MoEST released guidelines for APBET schools to operationalize APBET policy framework; provide guidance on regulations; and facilitate the establishment, registration, and provision of quality education in these institutions. The guidelines define minimum standards and procedures for the registration of APBET institutions and will facilitate the registration of APBET institutions and ensure recognition by the MoEST.

Explore public-private partnerships

Rising demand for secondary education, which will be accelerated by the government's new policy of providing free senior high school education, could be addressed through improved partnerships with the private sector and the reallocation of government resources within the sector. Partnerships could be explored along the four common models of private service delivery: (i) independent private schools; (ii) government-funded private schools; (iii) privately managed schools; and (iv) voucher schools. Ghana could learn from the experience of other countries such as Brazil. Self-sustaining

solutions for top-performing senior high schools in urban areas could also be considered, in order to free up resources for other priority needs.

Relaxing regulations on College of Education graduates

The government currently allows only public College of Education (CoE) graduates to be placed in public schools. Instead, it could consider providing equal opportunities to private CoE graduates in order to meet the demand for trained teachers. Under the current decentralization process, the Ghana Education Service (GES) has recommended that districts should announce their vacancies and make them open to all teachers, regardless of whether publicly or privately trained. This recommendation has yet to be implemented, but should be considered to improve the value proposition of opening a private CoE.

Improving availability of financing for private institutions

Financing educational institutes is also needed. For most individual and small operators, establishing or expanding educational institutes is a challenge, with high land prices and infrastructure development costs, coupled with high interest rates, creating significant market entry barriers. Providing access to affordable finance for educational institutes would assist in the process of adding more places in a supply-constrained educational market. IFC ventured into this space a few years ago through a bank risk-sharing facility (box 3.12).

Box 3.12: Institutional financing

The Ghana Schools Program was part of the Africa Schools Program at IFC and facilitated the financing of over US$9 million for private schools through a risk-sharing facility with a commercial bank. The program also aimed to improve quality and skills in private schools' management and delivery of education (for example, through the implementation of the Education Management Information System).

Financing accessed by schools was used for expansion of school facilities, upgrading of computer and science labs, and purchase of other educational materials. The program worked well, serving mostly the middle and upper range of the private school market. However, it was not able to meet the needs of schools serving low-income groups, which have marginal profitability, no security/collateral for accessing loans, and no time/resources for advisory services.

Relaxing affiliation policies for private universities

About 60 percent of private university colleges have low enrollment of less than 1,000, and some of them are on the verge of closing due to financial unsustainability. Mentoring public universities charge heavy affiliation fees to private university colleges based on the number of courses affiliated and number of students per course. Since private university colleges are not allowed to provide their own degrees unless they obtain a charter, it is difficult for them to innovate in terms of their course offerings and, hence, most private providers end up with limited differentiation in their programs.

Defining regulations for distance education

Distance education is picking up in Ghana, and many providers have started offering such courses. However, there are no regulations to monitor the scale or quality assurance of this mode of educational delivery.

Improve financing options for higher-education students

To enhance availability of quality education at a time where much of that education is being offered by private operators, it will be important not only to invest in schools, but also invest in learners. This could be done by lowering school costs through student financing, training more teachers, improving management by partnering with the government, and providing additional inputs such as textbooks and ed-tech. The government's STLF has been unable to meet the large demand for student financing. Ashesi University College has partnered with the MasterCard Foundation to provide scholarships for its students. A few private providers of student financing have also emerged, for example Brighter Investment (box 3.13). More effective student financing would help to reap the massive opportunities that exist in higher education.

Box 3.13: Private student financing

Private student financing: Brighter Investment, a Ghana-based higher education finance provider, works by directly funding the fees of students through their degree program. They identify high-potential students from their applicant pool who are pursuing higher education and then sanction a loan, which covers tuition fees and an allowance for living expenses, books and other related costs. The repayment is structured as a fixed ratio of the student's salary for up to six years once he/she gains employment. Their effective returns translate to 9 percent, and they have funded 70 students since 2014. In 2017, Brighter Investment expects to raise US$650,000 and accept 360 new students into the program.

Improving the relevance of technology and vocational education training (TVET)

The Ministry of Education, Science and Technology (MoEST) has consistently allocated less than 2 percent of its budget to the TVET sector. The MoEST could actively consider partnering with corporations in sectors that are large-scale employers of TVET graduates. This would be a mutually beneficial arrangement, because corporations would be able to contribute towards those skills that are most relevant to the TVET curriculum and become invested in the successful training of students. Moreover, the MoEST would benefit from the financial funding and other industry-relevant expertise that corporations would bring in. Given the growing demand for post-secondary education and the limited capacity to absorb students into the traditional higher education system, there is an opportunity to offer employability-linked short-term courses to students. There is also an opportunity for the private sector to invest in resource centers that provide training equipment and tools to help improve TVET quality and relevance.

4. Next steps

Addressing the main constraints to private sector development

The CPSD sheds new light on the main constraints to productive/transformative private sector investments in Ghana by helping identify and prioritize them, including sector-specific constraints.

In three priority sectors selected for deep dives, the role of the government could evolve from being a direct actor to becoming either a facilitator of private sector participation in these sectors, or partnering with the private sector in the efficient delivery of public services, such as education. This may require *creating more favorable conditions* for a new private sector to emerge, such as contributing to making irrigated agricultural land available and auctioning it. It may also require significant *capacity upgrades of line ministries and specialized agencies* to provide quality public infrastructure. This could involve developing professional standards in the education sector, regulations creating markets such as interoperability in finance and ICT, and quality public services that minimize the costs and maximize the efficiency of meeting regulatory requirements and paying taxes. It underlines the importance of *implementing the new PPP law*. The deep dives highlight the need for the government to pursue sector-specific reforms to facilitate transformative private sector investments. These include liberalizing the seed industry, removing licensing restrictions and fees on private schools, and promoting investment and competition in ICT backbone infrastructure, especially in northern of Ghana.

Overall, the CPSD highlights several important cross-sectoral constraints to private sector development that could constitute a priority agenda for the government to address. The top priority must be to resolve the energy crisis, together with the associated macroeconomic imbalances and stresses in the financial sector. This will require reform of the electricity distribution company as well as the regulatory framework. The other priorities are to facilitate trade, for example, Customs reforms, and improve the business environment, particularly through passing the PPP Act, the Company Law, providing one-stop shops, and supporting property registration and contract enforcement. It should also include facilitating access to finance and skills for SMEs, for example through collateral registries, warehouse receipts and credit bureaus.

Because of the transformative nature of the three identified sectors, government interventions to facilitate the expansion of the private sector should be led by and coordinated from the highest level of government, and include the line ministries required to unlock the constraints. For instance, bringing the Ghana ICT economy to the next level would not only concern regulating the use of information technology (IT) in terms of access and fair use, but also require empowering private actors in the sectors where ICT will be used, such as agriculture, education and health. It should also entail facilitating and lowering the costs and risks of entry for 'pioneer' investors.

Political will and coordination will be essential to overcome the resistance to reform that will undoubtedly arise. For instance, obstruction could be strongest where entrenched public or private actors exist, or in resolving the complex social issues associated with them.

Attracting 'pioneer' investors into the key sectors

'Pioneer' leading private sector players from both within or outside the country could open new markets/opportunities. They would bring unique skills and technology to support the development of local suppliers, including SMEs, informal sector players and farmers. Public support beyond

removing policy constraints to pioneer investors may be justified in cases where they face high entry costs and risks, for instance due to the lack of supporting infrastructure and eco-system, and could be instrumental in developing new high-value market/industries. Public support could take the form of fiscal incentives/de-risking, facilitating access to land, contributing to needed infrastructure (which would also benefit others), and supporting the development of worker skills and suppliers.

Supporting 'promising' SMEs

'Promising SMEs' that can bring/adapt major innovations to local conditions. In Ghana, small firms have often demonstrated a capacity for innovation and adaption to local conditions. A number of them have benefited from start-up support, including from incubators such as MEST. This suggests that sector-focused SME support could help with the emergence of an ecosystem around dynamic and innovative firms. Examples from other countries of interventions leading to sector transformation include the support to the first cut-flower farm in Ethiopia, which led to explosive growth of the industry (Dinh et al., 2012) and the 150 Bangladeshi apparel entrepreneurs who received a six-months' intensive training in the Rep. of Korea and who were subsequently instrumental in launching a successful apparel industry in Bangladesh (Dinh et al., 2013).

For those 'promising SMEs' at an early stage of development, the need is for a combination of financing and entrepreneurship/managerial capacity building, including management skills, marketing intelligence, mentoring and coaching, and access to networks. Early-stage SME support works best when it is sector focused, given the need for sector-specific capacity building. This suggests starting in the priority three sectors identified in this report. So far, in Ghana there is little if any support available for start-ups able to bring innovations to viable market products. The early-stage financing gap for promising SMEs in Ghana is real. Entrepreneurs and SMEs with promising ideas can sometimes access grant financing of up to about US$25,000 from various development partner- and government-supported programs to get their businesses off the ground. At the other end of the financing spectrum, businesses at the growth stage needing US$2 million or more in capital can access financing from impact investors, and local venture funds. In the middle, promising SMEs that need early-stage financing of between US$75,000 and US$2 million have few options (i.e., the "missing middle"). This is not only about financial support but also about assessing ways to secure returns on investment. This may require a combination of innovative financing and sustained handholding, both in terms of managerial capabilities and deep market intelligence. This is an area that traditional financing sources, such as banks and venture capital, are not ready or able to provide in Ghana.

Bank loans are inappropriate in most cases, due to lack of collateral and unfamiliar business models, and interest rates at over 20 percent and on short tenures. The Venture Capital Trust Fund, a government-backed fund, is seeking to establish a new generation of investment funds to address this early-stage financing gap.

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APPENDIX A: INDIVIDUAL SECTOR ANALYSIS FOR THE SECTOR SCAN

A.1: ICT

Desirability: 4.2/Expected Feasibility: 4.1 - selected for deep dive

Current performance: 3/5

A pioneer in telecommunication reforms, Ghana's market is reaching maturity for voice, with good access, but is yet to witness a data-led revolution. The sector has tremendous growth and development impact potential and looks to have most assets needed to go forward.

Table A.1. 1: ICT: Scoring desirability

Criteria	Weight (%)	Desirability (1–5)	Explanation
Inclusion and Jobs	25	3	ICT is not a large provider of employment (1.2% of firm jobs) but is, however, growing and has also provided opportunities for women. While mobile coverage is very good, broadband access is largely not available in rural areas, which means fewer opportunities there. The sector has thus potential to grow more jobs. It is estimated that for each ICT job, up to 8 jobs may be created (as evidenced by the relatively high induced jobs multiplier in this sector). ICT applications in education, agriculture, health and e-government can also contribute to inclusion.
Economic Growth	15	5	ICT growth has been spectacular and largely above the rest of the economy and contribution to GDP rose to 10.6% of GDP in 2016, against 2.8% in 2006. Average growth of ICT sector over 2009-14 was 30% per year. ICT growth has been mostly in mobile voice telephony; the potential for growth in data (both mobile and fixed) and value-added services remains largely untapped. There is also persuasive evidence that ICT benefits other sectors of the economy and that data usage has positive impact on GDP (high GDP multiplier).
Competitiveness and Productivity	25	5	Mobile penetration has risen dramatically to reach 130% and access to mobile services is shown to lead to productivity gains, especially in early stages. Now that the market is maturing, penetration rates are not expected to increase much, but rather a move towards data and internet usage is under way. Access to Internet is linked to increases in labor and total factor productivity.
Integration and Connectivity	10	5	Ghana scores above the sub-Saharan Africa average, but overall relatively low in terms of connectedness. This is due to lack of data access, which affects businesses in the first place, and some gaps in terms of coverage. Potentially, ICT can, however, provide significant opportunities for businesses to reach out to both domestic and international customers, as well as suppliers.
Resilience and Stability	15	4	There is no evidence at this stage on whether ICT development has had an impact on resilience. Literature, however, suggests some positive impact, for instance, on price volatility of agricultural goods, which has a high incidence on farming populations.
Environmental Sustainability	10	3	The ICT industry is not associated with any significant negative environmental impact. In the future, ICT-based services may

Criteria	Weight (%)	Desirability (1–5)	Explanation
			contribute positively to environmental sustainability through better access to information (for example, more sustainable practices in agriculture).
Average	—	4.2	

Table A.1. 2: ICT: Scoring feasibility

Criteria		Current constraints (1–5)	Constraints in two years (1–5)	Explanation
Demand		5	5	There is strong continued growth of ICT. Demand is expected to grow: there is high unmet demand for mobile services and data applications, for instance, as they resolve information/market/finance access problems (farmers, health, mobile credit, etc.)
Production Factors	Labor and skills	4	4	Ghana is already well connected to landing cables and a good portion of the territory has access to at least mobile coverage. Some areas remain unserved. Data access is much more of constraint, especially outside Accra. ICT skills are already very good, with some gaps in cybersecurity or cloud computing. Lack of soft mid-level skills prevent the emergence of a BPO industry. More management capabilities would translate into higher entrepreneurship to some extent.
	Existing capabilities	2	4	
	Natural endowment and geography	4	4	
Key Inputs	Energy	2	3	Energy costs are high and this eats into the margin of mobile operators as it makes the operation of IT infrastructure costly, including data centers for next data-driven ICT growth. Intermediate inputs in terms of ICT infrastructure are good and not a key constraint to the development of ICT innovation, but such inputs could, however, be improved in terms of access in rural areas.
	Transport	4	4	
	Finance	2	4	
	Intermediate inputs	3	4	
Institutions	Regulatory barriers	4	4	Regulation of the sector is overall decent as the market is generally open with some issues that could be fixed easily relative to distortive intervention of regulatory agencies as market/infra-makers, inadequacy of regulatory framework for innovation, and inefficient management of spectrum and licenses in part due to preference given to Ghanaian operators. Payments can be an issue, as intellectual property rights enforcement. Market contestability is an issue in the broadband segment, with costs that remain high and rollout of data that is slow. The macro environment affects ICT like all sectors but does not seem to prevent growth and diversification.
	Rule of law and property rights	2	3	
	Market contestability	1	3	
	Macroeconomic and political stability	3	4	

Criteria	Current constraints (1–5)	Constraints in two years (1–5)	Explanation
Average	3.4	4.1	

A.2: Agribusiness

Desirability 3.9/Expected Feasibility 3.6 - selected for deep dive

Segments of this sector have high desirability (for example, potential to positively affect a large number of poor households through off-taker schemes in high-value horticulture). A growing number of successful cases (for example, Vegpro) have shown that it is feasible to remove some of the key constraints standing in the way, for example, facilitating access to land and promoting skills among farmers.

Current performance (3/5)

Agribusiness is the largest sector in Ghana (25 percent of GDP and has been growing at 5 percent since 2008.

Table A.2. 1: Agibusiness: Scoring desirability

Criteria	Weights (%)	Desirability (1–5)	Explanation
Inclusion and Jobs	25	4	Agribusiness drives the livelihood of >35% of workers in Ghana, especially women from poor rural households, but these are low-quality jobs. Growth could create potentially better-quality jobs through skilling and contract farming.
Economic Growth	15	4	Represents around 20% of GDP in Ghana today and presents opportunities to increase value-added and exports. Growth would have a 1.8 multiplier.
Competitiveness and Productivity	25	4	Sector today suffers from low productivity. Further investment could contribute to improved productivity through skilling. Agri-transformation could contribute to higher value-added products/exports.
Integration and Connectivity	10	5	Already an export-oriented sector (and exports have been growing). Outgrower schemes could further help integrate farmers into global value chains.
Resilience and Stability	15	4	While agriculture growth has been volatile in recent years and concentrated in a few commodities, the development of high-value agribusiness could contribute to export diversification and resilience.
Environmental Sustainability	10	2	The development of agribusiness can negatively affect the environment (deforestation and overuse of water resources), which needs to be carefully monitored/mitigated.
Average	—	3.9	

Table A.2. 2: Agribusiness: Scoring feasibility

Criteria		Current feasibility (1–5)	Expected feasibility (1–5)	Explanation
Demand		4	4	Growing domestic demand fueled by income growth and urbanization, as well as exports (EU and US markets) expected to continue.
Production Factors	Labor and skills	2	3	Limited supply of trained farmers; could be trained but it will take time given the large number of farmers. Growing number of pioneering investors (Wienco, Blue Skies, Vegpro); investors have successfully set up operations and many existing farms, which could be doubled. Ghana has 65% arable land and access to water.
	Existing capabilities	2	3	
	Natural endowment and geography	4	4	
Key Inputs	Energy	3	4	High energy costs and low reliability in Ghana but the issue is being resolved and affects agribusiness less than, for example, manufacturing. Lack of warehousing infrastructure could be resolved. Access to agro-finance is not yet widespread; the government is setting up a risk-sharing facility to facilitate access to finance. Current access to seeds and fertilizers could be improved.
	Transport	3	4	
	Finance	2	3	
	Intermediate inputs	3	4	
Institutions	Regulatory barriers	2	3	Erratic policies on agricultural inputs and outputs. Absence of formal secured land property rights; the government is developing model land lease agreements between investors and communities. Market contestability is not a major issue. The macro situation is shaky but not a binding constraint for agribusiness and assumed to improve.
	Rule of law and property rights	2	3	
	Market contestability	4	4	
	Macroeconomic and political stability	3	4	
Average		3.0	3.6	

A.3: Education

Desirability: 3.9/Expected Feasibility: 3.4 - selected for deep dive

Current performance (3/5)

Ghana has made very significant strides towards achieving universal education at the primary level and is gearing up to extend this to secondary. This has been accompanied by spectacular growth of the private sector at all levels, with the more mature players and some foreign presence in primary low-fee schools (Omega). There is tremendous demand for education services and the government is increasingly welcoming of the private sector. The sector remains fragmented and dominated by informal players and thus needs to evolve towards more organized and formal players, following the

lead of some international investors. For instance, the mid-price market for K-12 recently received an investment from a private equity firm.

Table A.3. 1: Education: Scoring desirability

Criteria	Weights (%)	Desirability (1–5)	Explanation
Inclusion and Jobs	25	4	Education contributes to 14% of salaried jobs in Ghana. While Ghana has made progress in expanding access to education (net primary enrollment rate was 91% in 2015 and net secondary enrollment rate was 58%), geographic disparities in access remain, and the quality of education is relatively poor. Private investments in education can have an impact on access and quality of education, contributing to inclusion and indirectly to jobs by expanding individuals' economic opportunities.
Economic Growth	15	4	While not directly contributing to economic growth, more and better education could generate a supply of workers with the skills needed to contribute to economic growth—a key input to all sectors of the economy. Skills shortage is an issue in many sectors in Ghana; investments in education can help address this shortage.
Competitiveness and Productivity	25	4	Similarly, education contributes indirectly to competitiveness and productivity, assuming that more and better skilled workers are more productive. Given that skills qualifications in Ghana are questionable in terms of employability (and that half of grade 2 students cannot read), improvements to education quality can boost productivity.
Integration and Connectivity	10	4	Ghana already hosts many international students at the tertiary level, especially from nearby countries (for example, Nigeria), so there is potential to grow this base, turning Ghana into a regional hub for education.
Resilience and Stability	15	4	At the individual level, increased economic opportunity contributes to resilience. At the national level, private provision of education could ease the government's fiscal burden, allowing it to focus on underserved areas of the country (education represented 21% of total government spending in 2015).
Environmental Sustainability	10	3	The education sector does not have a direct impact on the environment, either negative or positive.
Average		3.9	

Table A.3. 2: Education: Scoring feasibility

Criteria		Current feasibility (1–5)	Expected feasibility (1–5)	Explanation
Demand		4	4	Ghana has nearly achieved universal basic education, but more can be done, especially at the secondary level. There is also high demand for quality in the primary segment as public sector performance is poor.
	Labor and skills	2	3	

Criteria		Current feasibility (1–5)	Expected feasibility (1–5)	Explanation
Production Factors	Existing capabilities	3	4	Limited supply of trained teachers especially for secondary education development; relatively low labor cost is source of competitive advantage for low-fee schools. Ghana already has an active private sector in education (25% of total primary enrollment and 17% of total secondary enrollment is in private institutions) and this is growing. Disease prevalence could affect teachers and students.
	Natural endowment and geography	3	3	
Key Inputs	Energy	3	3	Energy, transport, and finance are not significant constraints in the case of education. In terms of intermediate inputs, there is potential to improve teacher training and other inputs such as textbooks
	Transport	3	3	
	Finance	3	3	
	Intermediate inputs	3	4	
Institutions	Regulatory barriers	2	3	The main institutional barrier is limited communication between the government and private providers. The government is looking to put in place a policy to extend free education all the way to senior high. While this can be a positive development to expand education opportunities for those that need it most, this needs to be combined with specific policies that ensure a "level playing field" for private providers. Currently, the government policy towards the private sector in education could be made more explicit through "ad hoc" regulations laying out more directly the parameters under which the private sector can operate, promoting growth of the sector.
	Rule of law and property rights	3	3	
	Market contestability	2	3	
	Macroeconomic and political stability	3	3	
Average		3.0	3.4	

APENDIX B: Summary of recommendations for joint implementation

Table B. 1: Draft template for joint government and private sector implementation in the agribusiness sector

	Public interventions	Private sector partnerships
Horticultural and nut sector for local, West African and international markets	• Support the development of irrigation infrastructures for schemes that have been cleared for investor allocation (e.g. Accra plains and in the North of Ghana under the WB Ghana Commercial Agriculture Project project). • Support the Government identify investors and conduct auctions for agricultural land allocation, and support successful bidders through seed investment and advisory services. • Support the Government establish a system for grievance redress (GRM), and apply to future investments the Model Lease Agreement and Community / Investor guidelines (e.g., such as already used by Vegpro and Golden Exotics). • Mobilize outgrowers to work with agribusinesses around sponsored schemes, and organize consultations with authorities and outgrowers on private sector investments in general. • Support outgrowers in the adoption of good agricultural and post-harvest practices to meet off-takers requirements. • Engage public private dialogue platforms to push for specific reforms including public investments to increase the competitiveness of the agribusiness (water, energy, infrastructures, skills, innovation and entrepreneurship).	• Following allocation of land, identification of crops that can be grown in individual schemes and the availability of basic services, explore with existing or potential investors specific opportunities to expand or develop activities in the targeted areas. • In collaboration with WB, educate investors on the Model Lease Agreement, Community / Investors guidelines and dispute resolution mechanism (to be established). • With IFC/FIG, identify opportunities for risk-sharing facilities with local banks to address access to finance shortcomings from outgrowers on potential projects. • Explore advisory opportunities related to the government's request for private operation of new infrastructure (e.g., irrigation).
Import-substitution products on local and West African markets	• For horticulture, initiatives to securing the land and developing the infrastructure necessary for larger potential investments in import substituting crops such as rice and maize is foreseen. • Support reforms and Government actions to improve competitiveness in input markets (seeds, fertilizer, mechanization) that would directly	• Identify and develop opportunities to improve input markets as a basis for improving competitiveness of local production. • Explore growing downstream markets actors, e.g., poultry.

	impact the competitiveness of the rice, maize, animal feed and other products that are currently imported. • Engage public private dialogue platforms to push for public investments to increase the competitiveness of agribusiness (water, energy, infrastructures, skills, innovation and entrepreneurship).	
Skills training provider and value chain support services	• Explore with MoFA and the Ghana Irrigation Development Authority possibilities to scale up the training center under a PPP model (currently operated by AgriTop) to other geographical areas. Link to land development and investment schemes to offer both graduates and training services to existing and future investors. • Organize investor events for service providers present in surrounding countries (Cote d'Ivoire, Nigeria) and outside the region (India, China) that have shown an interest to expand their operations in Sub-Saharan Africa. • Support the implementation of the Warehouse receipt system to increase access to credit and better storage infrastructures.	• Conduct a mapping of market players in the services sector, identify market opportunities and regulations that may hinder private sector development. • Assess private sector needs in terms of agribusiness skills at production, post-harvest and managerial levels, as well as services for agribusiness operations (handling, storage, finance, logistics, inputs, irrigation). • Identify investors in the areas of handling and storage services, as well as cold chain logistics and transportation.

Table B. 2: Draft template for joint government and private sector implementation in the ICT sector

	Public interventions	Private sector partnerships
Infrastructure	• Help the creation of internet exchange points (regulatory dimension) to reduce cost and increase speed/bandwidth and latency. • Review the functioning of ICT parks and link them to other initiatives for improving the entrepreneurship environment (incubation/acceleration/skill development/market connection). • Review the functioning of the National Data Center to encourage private sector use (for example, privatize excess capacity). • Help the government improve the performance of the Universal Service	• Finance internet exchange points (infrastructure) to reduce cost and increase speed/bandwidth and latency. • Help develop rural mobile network and broadband and seize wholesale opportunities at domestic and regional level, for example, in partnership with internet service providers, large business, or tripartite with the GIFEC, MNO, and probably an equipment vendor. • Explore additional investment in infrastructure sharing companies (towers or power network. • Explore investment in carrier-neutral data center/cloud storage

	Public interventions	Private sector partnerships
	Fund/GIFEC including through new PPPs (strategy). • Develop national research and education networks in cooperation with the private sector (strategy and financing).	with interested private companies—could be achieved through the commercialization of the National Data Centre on the basis of an assets sale, concession, or PPP/joint venture.
Skills	• Implement Digital Development Partnership that includes a skill and workforce development component. • Develop, with the government and private sector partners, curricula for missing skills and IT-literacy support and entrepreneurship programs.	• Explore possible investments and participation in incubation/acceleration and training centers, whether local or regional to reach scale and efficiency.
Regulatory framework	• Fill in regulatory gaps identified in the report and help the implementation of digital laws already in place through targeted financing and institutional reforms. • Introduce consultation mechanisms to ensure private sector consultation and prevent new legislation from becoming an obstacle to entrepreneurship or competitiveness.	• Provide specialized advisory services, for example, in the area of digital finance to better organize and enable market optimal functioning (for example, clearinghouse in Brazil and cash conversion in Bangladesh).
Market	• Design and help the government implement micro, small, and medium-sized enterprises support programs that are targeted at the needs of the sector. • Run digital ecosystem diagnostics and implement digital entrepreneurship promotion strategies. • Design and help the government implement a program for regional integration (trade facilitation, regional regulation, etc.). • Run a diagnostic of current venture capital actors and regulations.	• Partner with key private sector actors providing venture capital, acceleration, and mentorship services. • Promote the connection of actors and co-finance the adoption by large companies or associations of producers of local solutions to their business problems. • Provide advisory services for the development of a stock market allowing the financing of the ICT revolution.
Fin-techs and mobile money	• Undertake a market mapping of current players and regulations for e-payment. • Support the introduction of mobile payment in e-government programs and encourage use for payment of public services and utilities. • Design and introduce reforms of the regulatory framework needed for fin-techs and mobile payment development (including inter-ministerial coordination).	• Support payment platforms and promote mobile banking for inclusion through demonstration participation. • Develop, with large companies, solutions for increased efficiency of supply chains using local e-solutions. • Provide advisory services for structuring the market. • Show demonstration effects through early movers financing and/or acceleration.

	Public interventions	Private sector partnerships
E-health	• Help the government mainstream e-health strategy and deployment of ICT solutions in the World Bank Group health programs, e-government, health insurance, and fight against counterfeited drugs.	• Develop the market through early movers' financing/acceleration of pharmaceutical, health care, and insurance initiatives. • Explore joint investment with large users or investors to develop/adopt local solutions.
Agritechs	• Mainstream new technologies in government agricultural development programs to harness the benefits of more efficient value chains and higher agricultural and fisheries income. • Support rural connections and infrastructure deployment (see infrastructure above) to ensure inclusiveness and wider spread benefits of ICT.	• Promote market development through early movers' financing/acceleration—old and new technologies with demonstration effect. • Encourage the adoption of local solutions by large partner companies to improve the efficiency of their supply chains and support to local farmers' income.
Horizontal programs targeted at inclusion	• Some programs could have a horizontal approach and have a focus on inclusion: gender, age, geography, finance, etc. • E-government. Deployment of digital unique identity as initiated by eTransform needs to be accelerated and expanded.	

Table 2A.1: Draft template for joint government and private sector implementation in the education sector

		Public interventions	Private Sector Partnerships
Core Provision	**Pre-Primary**		• Opportunities for further private sector investment exist in early childhood education in environment where share of private schools is increasing in kindergartens.
	Primary	• Relaxing registration requirements. • Improving management information systems (including for secondary).	
	Secondary	• Assess whether top senior high school could be self-sustaining. • Explore PPP arrangements to roll out free senior high school (e.g., charter schools, vouchers, etc.), and learn from models abroad (e.g., Brazil).	• Introduction of free public senior high school presents opportunities for private sector investment in the sector.
	Tertiary	• Relax requirements and define missing regulations.	• Limited capacity in public universities presents opportunities for expanding private universities. • Explore ways to increase investment in universities, incl. foreign universities branches (e.g., Ashesi).
	TVET	• Provide a diagnostic on skills landscape and needs.	• There is unmet demand for skilled workers in many industries. Identify potential private sector partners in skilling institutes.
Ancillary Services	**Teacher Training**	• Relax policy requirements (Only graduates of public CoEs can teach in public schools but these are facing limited capacity).	• Explore opportunities for private investment.
	Ed-Tech	• See ICT matrix	• Facilitate early-stage financing for ed-tech startups.
	Student Financing **Institutional Financing**		• Direct investment in student financing providers • Facilitate provision of financing through guarantees/de-risking