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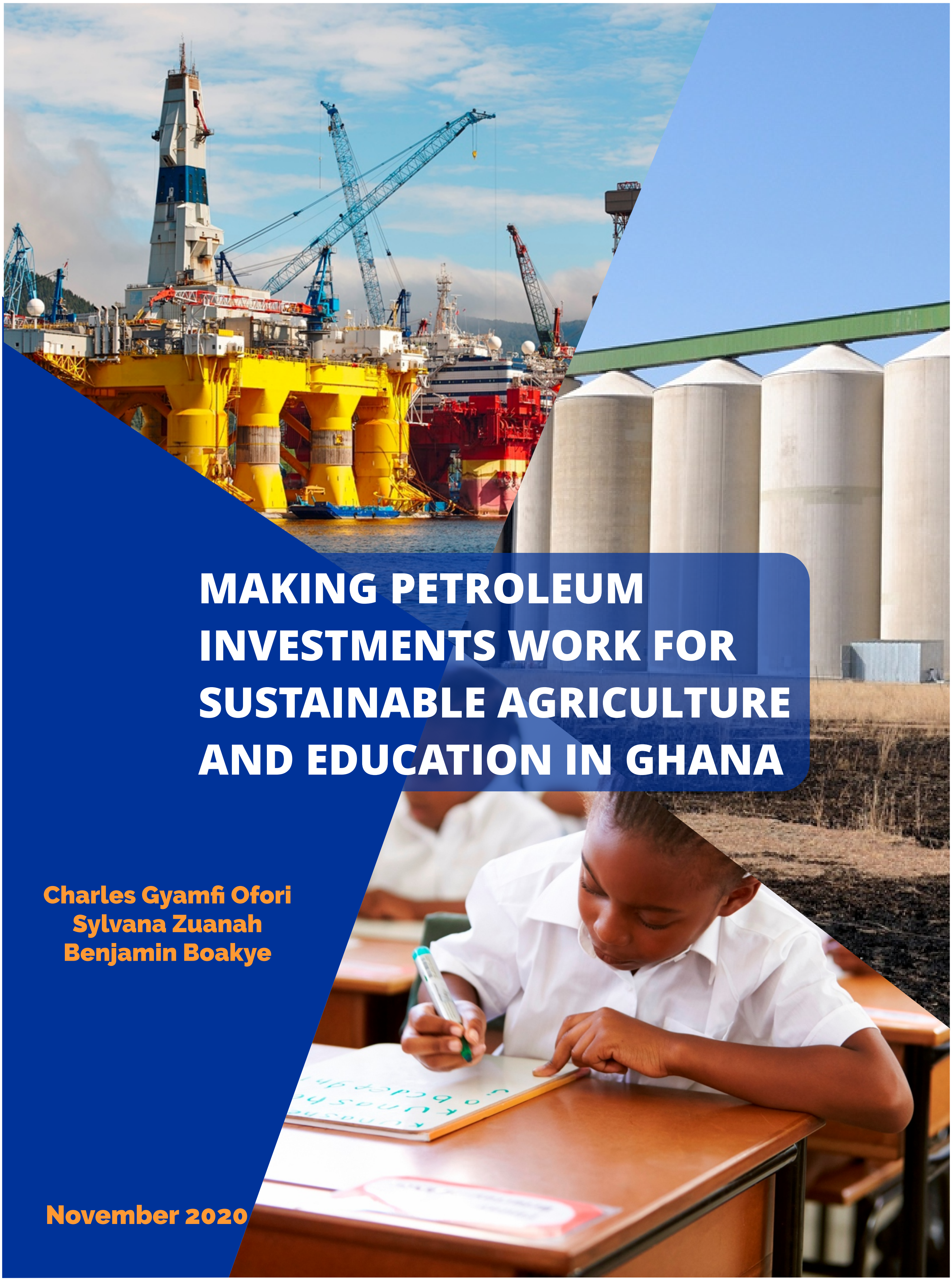

MAKING PETROLEUM INVESTMENTS WORK FOR SUSTAINABLE AGRICULTURE AND EDUCATION IN GHANA

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List of Abbreviations

AAGDS	Accelerated Agricultural Growth and Development Strategy
ABFA	Annual Budget Funding Amount
AU	Africa Union
CAADP	Comprehensive Africa Agriculture Development Programme
CAGD	Controller and Accountant General's Department
COCOBOD	Ghana Cocoa Board
COFOG	Classification of Functions of Government
CPESDP	Coordinated Programme of Economic and Social Development Policies
FASDEP	Food and Agriculture Sector Development Policy
FCUBE	Free Compulsory Universal Basic Education
FSHS	Free Senior High School
GDP	Gross Domestic Product
GES	Ghana Education Service
GoG	Government of Ghana
GPRS I	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy
GSGDA	Ghana Shared Growth and Development Agenda
IFJ	Investing for Food and Jobs
JHS	Junior High School
METASIP	Medium-Term Agriculture Sector Investment Plan
MOFA	Ministry of Food and Agriculture
MTADP	Medium Term Agricultural Development Programme
NDPC	National Development Planning Commission
OECD	Organization for Economic Co-operation and Development
PRMA	Petroleum Revenue Management Act
SAM	Social Accounting Matrix
SDG	Sustainable Development Goal
TGE	Total Government Expenditure
TVET	Technical Vocational Education and Training
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization

Executive Summary

Ghana passed the Petroleum Revenue Management Act (PRMA), 2011 (Act 815) to provide the framework to manage petroleum revenues after commercial production began in 2010. The PRMA prescribes allocating of a portion of petroleum revenue to budgetary support through the Annual Budget Funding Amount (ABFA). Further, the Act requires the prioritisation of a maximum of four areas for ABFA funding. Prioritising areas for ABFA funding is relevant to maximize the rate of economic development and promote equality of economic opportunity to ensure the wellbeing of all citizens. Achieving this objective requires investments in the priority areas such that oil revenues will act as additional funds that must complement, and not replace, existing development finance efforts of the government in these areas.

For almost a decade, physical infrastructure and service delivery in education, and agriculture modernisation have featured as priority areas for ABFA allocation. While it is important to assess the impact of petroleum revenue on all the prioritised sectors that receive petroleum revenue, this study focused on the education and agriculture sectors. This is because these are important sectors that can significantly contribute to economic diversification and provide human capital for economic growth. The African Union (AU), recognising the importance of the agriculture sector to the economic development of its member states is committed to sustaining its growth and development through the Maputo Declaration in 2003.

This Declaration among other decisions directed governments to allocate at least 10 percent of government expenditure to agriculture development. Additionally, African governments made commitments to sustain a minimum annual agriculture sector growth at 6 percent. On education, the United Nations (UN) adopted the Incheon Declaration in 2015 as a tool for ensuring inclusive and equitable quality education. This Declaration requires governments to allocate to education, at least 4 to 6 percent of GDP and/or 15 to 20 percent of total public expenditure.

Therefore, this paper assessed the contribution of petroleum revenue in response to the AU and UN commitments. It analysed trends in real government expenditure in the agriculture and education sectors based on actual government expenditure data under the Classification of Functions of Government (COFOG) from the Controller and Accountant General's Department (CAGD). The following findings were made:

1. **Ghana has not been able to meet its agriculture expenditure targets as outlined by the Comprehensive Africa Agriculture Development Programme (CAADP).** Contrary to reviews from the Ministry of Food and Agriculture, data from CAGD indicate that when actual COFOG measures are used, Ghana requires increased effort to meet the CAADP's target of allocating 10 percent of total government expenditure to the agriculture sector.

2. **The education sector has met the minimum education expenditure benchmark of 15 percent of total government expenditure and/or at least 4 percent of GDP amidst persistent challenges**. For over a decade, government expenditure in education has surpassed the Incheon declaration benchmark of at least 15 percent of total government expenditure. However, persistent problems in the education sector require more funding on the assumption of the efficiency of spending.
3. **The education sector receives more attention for ABFA allocation than the agriculture sector.** While the education sector has received considerable disbursements of ABFA receipts, the same cannot be said for the agriculture sector. On average, the education sector has received about 90 percent of its planned ABFA expenditure between 2017 and 2019, compared to 33 percent in the agriculture sector within the same period.

In light of these findings, we recommend that:

1. Petroleum revenue allocation should not be a substitute for existing government expenditure in the agriculture and education sectors. Rather revenue allocations should lead to a substantial increase in total government expenditure and investment in education and agriculture to address the challenges of the sectors. Otherwise, the prioritisation of the sectors will not achieve the objective of the PRMA.
2. The government must ensure that planned ABFA allocation to the agriculture and education sectors are fully disbursed. The current practice of under disbursement, even when projected ABFA is realised, denies the sectors of the need cash flow for investment.
3. Investments in the agriculture and education sectors should be deliberate and targeted towards critical areas necessary for the growth of the sectors.

Background

The discovery of oil and gas, and other natural resources is accompanied by expectations of the economic upliftment and prosperity for the citizens of resaceource-rich developing countries. However, some countries have faced many challenges and disappointments after receiving significant revenues from extractive resources. In these situations resource revenues rather generate economic mismanagement and corruption to the disadvantage of citizens, a phenomenon typically referred to as *resource curse*. Studies on the resource curse present evidence of the negative relationships between resource abundance and economic growth as well as domestic resource mobilisation in the non-resource sector.[1] This highlights the importance of governance and the political will to manage natural resources and its associated rents to engineer economic diversification and manage the cyclicality of revenue flows from the resource sector.

To efficiently and sustainably manage the damaging effect of the resource curse, Ghana passed the Petroleum Revenue Management Act, 2011 (Act 815) (hereafter referred to as PRMA) to provide the framework for the management of petroleum revenue after commercial production began in 2010. The PRMA is based on the principles of ensuring long term savings, budget stability and targeted annual budgetary support. The PRMA prescribes spending of not less than 30 percent of benchmark revenue[2] to long term savings (Ghana Heritage Fund) and budget stability (Ghana Stabilisation Fund) and not more than 70 percent of same on the budgetary support (Annual Budget Funding Amount (ABFA)) to ensure efficiency of spending, meet the welfare needs of citizens and ensure equitable development across the regions in Ghana.

To maximise the impact of the use of petroleum resources, the PRMA requires the Minister responsible for Finance to prioritise at most four sectors for ABFA allocation. These priority areas are revised every three years to take into account the evolving development needs of the economy.[3] Box 1 provides a list of areas in the economy that have been prioritised since 2011. The prioritisation ensures that significant investments are made in the prioritised sectors to foster diversification of the economy.

[1] Satti, S. L., Farooq, A., Loganathan, N., & Shahbaz, M. (2014). Empirical evidence on the resource curse hypothesis in oil abundant economy. Economic Modelling, 42, 421-429; Xavier Sala-i-Martin, Arvind Subramanian, Addressing the Natural Resource Curse: An Illustration from Nigeria, Journal of African Economies, Volume 22, Issue 4, August 2013, Pages 570–615, https://doi.org/10.1093/jae/ejs033

[2] See sections 61 and 11 of Act 815 as amended by Act 893. Benchmark revenue is defined in section 61 of Act 815 as estimated revenue from petroleum operations expected by the government for the corresponding financial year. If petroleum revenue less GNPC's share is equal to or more than the Benchmark revenue, then not more than 70% of Benchmark Revenue will support the priority areas. Note also that if petroleum revenue net GNPC's share is less than Benchmark Revenue, then not more than 70% of that revenue (not the benchmark revenue) will support the priority areas.

[3] Refer to Section 21(1), (2), (3), (5) and (6) of the Petroleum Revenue Management Act, 2011 (Act 815)

Box 1: Priority areas for ABFA allocation from 2011 to 2019

2011-2016	2017-2019
Road and other Infrastructure	Road, Rail and other Infrastructure Development
Agriculture Modernisation	Agriculture
Capacity Building (including oil and gas)	Physical Infrastructure and Service Delivery in Education
Expenditure and Amortisation of Loans for Oil and Gas Infrastructure	Physical Infrastructure and Service Delivery in Health

The priority areas are relevant for maximizing the rate of economic development and promote equality of economic opportunity to ensure the wellbeing of all citizens.[4] Achieving this objective requires investments in the priority areas as established by the PRMA. The depth of investments required for the development of these areas is such that oil revenues will act as additional funds to augment existing funding sources. Therefore, the presence of natural resources like oil and gas provide additional sources of revenue that must complement, and not replace, existing development finance efforts of the government in these sectors.

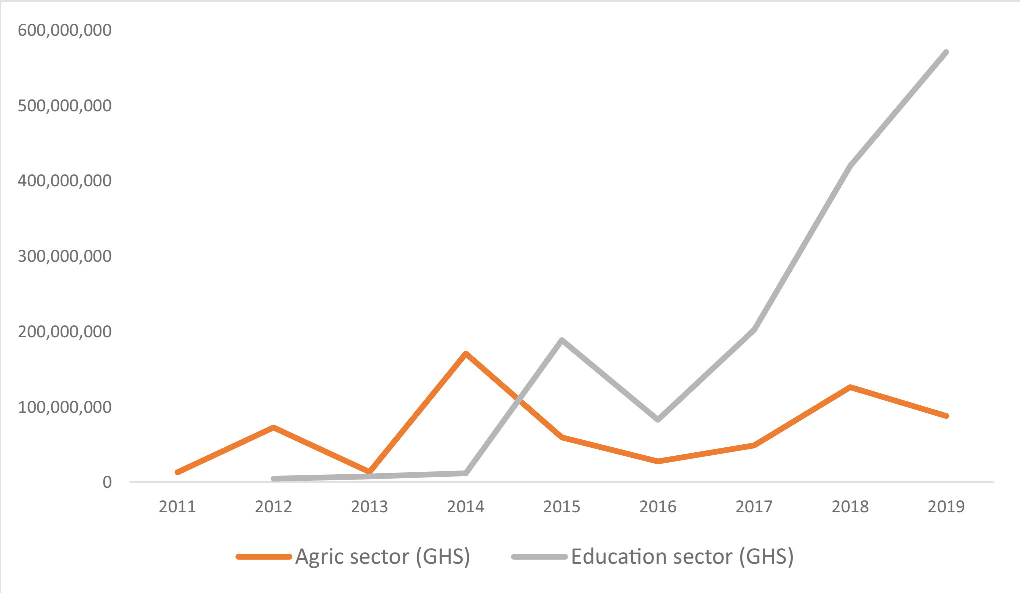
Given the finite nature of oil and gas resources, there is also the need for optimal revenue allocation to ensure that investments in the most important sectors of the economy are boosted. For Ghana, the agriculture and education sectors are two important sectors that significantly boost economic growth through diversification and the provision of human capital. While it is important to assess the impact of petroleum revenue on all the prioritised sectors after almost a decade of receiving petroleum revenue, this study focuses on the education and agriculture sectors over the period due to their impacts on the economy.

The agriculture sector has been a priority area for ABFA allocations since 2011. The sector has received cumulative allocations of about GHS 600 million ($ 107.5 million[5]) as at the end of 2019. The education sector on the other hand received ABFA allocations through the Roads and Other Infrastructure, and Capacity Building priority areas between 2012 and 2017. The sector was named a priority area in 2017 and has cumulatively received about GHS 1.4 billion ($ 250.9 million) between 2012 and 2019. Figure 1 provides information on the trend of ABFA allocation to the agriculture and education sectors from 2011 to 2019.

[4] Section 21(2) of Act 815.

[5] All exchange rate conversions were based on the average GHS-USD exchange rates between January 2020 to November 2020.

Figure 1: ABFA allocations for the Agriculture and Education sectors from 2011 to 2019



Sources: Petroleum reports, National Budget Statements (Ministry of Finance)

Justification for increased public investment in agriculture

The agriculture sector features prominently in development literature due to its size and contribution to economies. Recent studies have argued for the development and expansion of the sector due to its positive relationship with economic growth and poverty reduction.[6] This section justifies the need for increased investment in agriculture by highlighting the sector's contribution to economic growth and the challenges that plague the sector. In Sub-Saharan Africa, agriculture holds a dominant position in employment and contribution to the Gross Domestic Product (GDP). The sector was estimated to form about 51 percent of total employment in the subregion while contributing an average of about 15 percent to GDP as at 2019.[7]

The agriculture sector in Ghana contributed about a fifth to the country's GDP in 2019. It is a major source of income for a greater proportion of the population. The sector employs skilled and unskilled labour in both urban and rural communities. Generally, the agriculture sector is the second largest employer next to the services sector as it employs about 36

[6] Rehman, A., Jingdong, L., Khatoon, R., Iqbal, M. S., & Hussain, I. (2019). Effect of agricultural growth on poverty reduction, its importance and suggestions. Transylvanian Review, (7). Available at: http://transylvanianreviewjournal.org/index.php/TR/article/view/306; Matthew, O. A., Osabohien, R., Ogunlusi, T. O., & Edafe, O. (2019). Agriculture and social protection for poverty reduction in ECOWAS. Cogent Arts & Humanities, 6(1), 1682107. Available at: https://www.tandfonline.com/doi/pdf/10.1080/23311983.2019.1682107?needAccess=true ; Beegle, K., & Christiaensen, L. (Eds.). (2019). Accelerating poverty reduction in Africa. The World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/32354

[7] World Bank development indicators. Available at https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=ZG

percent of Ghana's labour force. In rural communities, the sector employs the largest proportion of about 61 percent of the labour force.[8]

Growth in agriculture contributes to growth in demand for inputs for agricultural and non-agricultural production. For instance, agricultural produce serves as raw materials for agro-processing and food processing industry. This kind of linkage is known as a forward linkage. On backward linkages, increased agricultural production translates into higher demand for agricultural inputs thereby expanding the market for local firms engaged in the sale and manufacture of these agricultural inputs. These forward and backward linkages have the potential to create demand and industrial spinoffs to scale up government's domestic revenue mobilization through individual and corporate income taxes.

The sector is more effective at reducing poverty than non-agricultural poverty reduction strategies. An analysis of Ghana's Social Accounting Matrix (SAM)[9] shows that the agriculture sector has higher income and employment multipliers compared to other sectors of the economy. The foregoing makes the case for investment in agriculture in Ghana where the majority of the rural poor are engaged in small holder farming. Therefore investments in agriculture promote food security (providing available and affordable food for both rural and urban poor), improve livelihoods (generation of income) and by extension contribute to the reduction of poverty and inequality.

The past decades have witnessed several policy frameworks which show the government's commitment to developing the agriculture sector. The common themes that underscore these policies are institutional capacity building and agriculture modernisation. The overall targets of these policies are to increase the growth of the sector. However, the effectiveness of these policies is offset with monitoring and implementation challenges. For instance, the World Bank's review of the Agriculture Development Policy Operations (AgDPO)[10] shows that the program's inability to meet its intended objectives is as a result of difficulties in monitoring budgets and the mismatch between planned outcomes and performance indicators, among others.[11]

In addition to poor execution and monitoring of projects, the sector is continuously plagued with other challenges that impede its growth. These include inadequate infrastructure, low access to mechanisation services along the sector's value chain and the overdependence on rainfed agriculture. Further, the National Agriculture Investment Plan highlights that,

8 Ghana Statistical Service (2015). Labour Force Survey. Available at https://www2.statsghana.gov.gh/docfiles/publications/Labour_Force/LFS%20REPORT_fianl_21-3-17.pdf

9 The SAM is a data representation of an economy which represents the monetary flows of all economic transactions among the various sectors of the economy. Data from the SAM is hosted by the Ghana Statistical Service.

10 The AgDPO was a credit facility from World Bank intended to provide funding to implement Ghana's agriculture investment policies such as the Medium-Term Agriculture Sector Investment Plan (METASIP) and the Ghana Shared Growth and Development Agenda (GSGDA).

11 World Bank. (2017). Project performance assessment report. Ghana Agriculture Development Policy Operations: Phase I-IV https://ieg.worldbankgroup.org/sites/default/files/Data/reports/ppar-ghanaagridpo-3202017.pdf

agriculture financing is a major challenge for the sector.[12] Specific financial challenges include the limited flow of financing to the sector and the lack of proper targeting of agricultural subsidies. In the field of agribusiness, the low standardisation of agricultural produce and the affinity for imported commodities limit the integration of Ghana's agriculture produce into the domestic and foreign markets.

These challenges affect and stifle productivity and competitiveness in the sector. For instance, domestic production of tomatoes grew by about 32 percent between 2009 and 2019.[13] This growth was however unable to meet domestic consumption, which grew by about 61 percent within the same period. Similarly, about 50 percent of Ghana's demand for rice was unmet by domestic production between 2012 and 2018.[14] These imply that imports were required to meet the deficits in demand. Dependence on imports, however, has negative impacts on the country's foreign exchange earnings and has the potential to weaken the local currency.

Increasing Ghana's earnings on non-traditional commodities and ensuring economic diversification require substantial investments targeted at critical areas of the agriculture sector. These include investments in storage and processing facilities, irrigation facilities to encourage all year farming, as well as effective Research and Development efforts to boost agriculture modernisation and mechanised farming.

[12] MOFA (2018). Investing for Food and Jobs (IFJ). Available at https://mofa.gov.gh/site/images/pdf/National%20Agriculture%20Investment%20Plan_IFJ.pdf

[13] MOFA-IFPRI Market Brief No. 2 (2020). Ghana's Rice Market. http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/133697/filename/133908.pdf

[14] MOFA-IFPRI Market Brief No. 2 (2020). Ghana's Rice Market. Available at http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/133697/filename/133908.pdf

Box 2: Agriculture sector policies from 1991 to 2021

Period	Policy	Objective	Target
1991 - 2000	Medium Term Agricultural Development Programme (MTADP)	1. Sustain gains made under the ERP and strengthen institutional capacity of the Agriculture sector. 2. Support a market led growth in agriculture through private sector participation	Growth in the sector
1991 - 2000	Medium Term Agricultural Development Programme (MTADP)	1. Enhance the contribution of Agriculture to economic growth 2. Increase productivity of using science and technology	1. 4.1% growth in agriculture by 2020 2. Average growth in agriculture between 1996 and 2000.
2000	Accelerated Agricultural Growth and Development Strategy (AAGDS)	1. Promotion of agricultural intensification through irrigation and mechanisation 2. Improve agricultural export diversification	Increase growth rate of the sector from 4 percent to 6 percent between 2001 to 2010
2003	Ghana Poverty Reduction Strategy (GPRS I) he Food and Agriculture Sector Development Policy (FASDEP I) was developed to ensure the realisation of the objective of the GPRS	1. Enhance agriculture infrastructure development and modernisation. 2. Transform Ghana into and agro-industrial economy	Increase agriculture sector growth rate to 4.8 percent by 2004
2006	Growth and Poverty Reduction Strategy (GPRS II)	1. Achieve accelerated growth through modernised agriculture. 2. Promote the non-traditional export crops such.	Ensure agriculture sector growth rate between 6 to 8 percent per annum.
2006-2015	FASDEP II	Achieve: 1. Food security and emergency preparedness 2. improved growth in incomes and reduce income variability 3. increased competitiveness and enhanced integration into domestic and international markets 4. sustainable management of land and environment 5. science and technology applied to food and agriculture development 6. enhanced institutional coordination.	Ensure agriculture sector growth rate between 6 to 8 percent per annum.
2011-2015	Medium-Term Agriculture Sector Investment Plan (METASIP)	A medium term agenda designed to meet the goals outlined in FASDEP II	1. Achieve annual sectoral growth rate of 6 percent. 2. Reduce by half the number of people living in poverty by 2015
2010-2017	Ghana Shared Growth and Development Agenda (GSGDA I and II)	The aim of the agricultural development policy under the GSGDA is to accelerate the modernisation of agriculture and ensure its linkage with industry through the application of science, technology and innovation.	
2018- 2021	Investing for Food and Jobs (IFJ)	To promote sustainable agriculture and thriving agribusiness through research and technology development, effective extension and other support services for improved food security, nutrition and incomes.	

[15] Dzanku & Aidam (2013). Agricultural Sector Development – Policies and Options. In Policies and Options for Ghana's Economic Development.

Justification for increased public investment in education

Education lies at the heart of sustainable development and therefore is important for achieving the Sustainable Development Goals (SDGs). According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO), an estimated 171 million people could be lifted out of poverty, should all children in low-income countries obtain basic reading skills.[16] Education empowers people, particularly women, as it contributes to reducing child marriages and maternal mortality. The Organization for Economic Co-operation and Development (OECD) also asserts that providing every child with access to education and the skills needed to participate fully in society would boost GDP by an average of 28 percent per year in lower-income countries for 80 years.[17]

This indicates that by investing in education, Ghana stands to enjoy a reduction in its poverty incidence rate which was as high as 23.4 percent in 2017.[18] Education increases citizens' chances of obtaining decent livelihoods and creates the human capital required for the development of the country. Although the education sector contributes less than 5 percent to GDP, investment in quality education provides effective human capital that is necessary for the growth of other sectors. The commitments of successive governments in ensuring access and quality education over the years include the implementation of a Free Compulsory Universal Basic Education (FCUBE) since 1995. This policy allows children of school-going age free access to basic education up to Junior High School (JHS).

Strategic interventions introduced to make FCUBE policy a success include the Capitation Grant (a fee abolishment policy in which every public primary school receives monetary allocation per pupil enrolled per year), expanding early childhood development services, promoting measures to improve gender parity in primary schools and the School Feeding Programme (a policy that seeks to provide free meals to kindergarten and primary school children in public schools). These measures and associated investments contributed to the attainment of the Millennium Development Goals on universal primary education and gender parity in primary schools.[19]

The Free Senior High School (FSHS) Policy commenced in 2017, intending to remove cost barriers to secondary education by absorbing fees approved by the Ghana Education Service (GES).[20] The policy also seeks to expand schools' infrastructure to accommodate the expected increase in enrolment. It also sought to improve educational quality by providing the required teaching staff, as well as teaching and learning materials. In 2017, Senior High School enrollment grew by 17 percent as compared to the 2016 enrollment growth rate of 3

[16] UNESCO, Education transforms lives, (Paris, UNESCO, 2013). Retrieved from https://unesdoc.unesco.org/ark:/48223/pf0000223115
[17] World Economic Forum. Why education is the key to development, (2015). Available at https://www.weforum.org/agenda/2015/07/why-education-is-the-key-to-development/
[18] Ghana Statistical Service (2018). Ghana Living Standards Survey Round 7: Poverty Trends in Ghana 2002-2014. Available at https://www2.statsghana.gov.gh/docfiles/publications/GLSS7/Poverty%20Profile%20Report_2005%20-%202017.pdf
[19] United Nation Development Programme, 2015 Ghana Millennium Development Goals Report, (2015), Retrieved from https://www.gh.undp.org/content/ghana/en/home/library/poverty/2015-ghana-millennium-development-goals-report.html
[20] Free SHS, everything you need to know about the Free SHS policy. Retrieved from http://freeshs.gov.gh/index.php/free-shs policy/

percent. The increase in the enrolment rate is attributed in part to the government's policy on free senior high school education. Since its inception, ABFA allocations to the educational sector have largely been used to finance this initiative.

Notwithstanding the government's commitments towards education, the sector faces challenges that require government's attention. According to the National Development Planning Commission (NDPC), there is a decline in the rate at which students transition from the secondary to the tertiary level.[21] This could be attributed to a myriad of factors such as the limited capacity of tertiary institutions to absorb students from the secondary level, low pass rates, and the lack of finances to enable successful students to commit to the financial obligations at the tertiary level.

The teacher-pupil ratio in basic schools is currently reducing. The World Bank estimates that this ratio has reduced from an average of 31 pupils to a teacher in 2011, to 27 pupils to a teacher in 2019 for primary schools. However, the problems of inadequate infrastructure for students and teachers, and the inadequacy of teaching and learning materials (ICT equipment, examination materials, laboratory equipment, textbooks, etc.) prevail in Ghana's education sector.

Further, on the subject of quality education, the standard of Technical and Vocational Education and Training (TVET) requires urgent attention. For a large section of the youth, the informal sector remains the principal avenue for skills acquisition, where apprenticeship is undertaken without set standards and proficiency certification.[22] The inadequacy of standards inhibits the ability of the youth to gain employment in more formalised industrial sectors where standards and certifications are required. There is the need to ensure that the TVET system is relevant and as such can be depended on for the development of the nation. This is relevant to reduce the high incidence of unemployment by providing special skills such as technological and manufacturing abilities required for the country's growth.[23]

Given the prominence of education to improving livelihoods, equity, health, sustainable nation-building, as well as the need to sustain achievements, it is essential for the Government of Ghana (GoG) to increase investments in the education sector. Therefore, increased allocation from petroleum revenues could target specific challenges that confront the education sector.

[21] National Development Planning Commission, Ghana SDGs Indicator Baseline Report, (Accra, National Development Planning Commission, 2018). Retrieved from https://www.gh.undp.org/content/ghana/en/home/library/poverty/ghana-sdgs-indicator-baseline-report-2018-.html

[22] National Development Planning Commission, Ghana SDGs Indicator Baseline Report, (Accra, National Development Planning Commission, 2018). Retrieved from https://www.gh.undp.org/content/ghana/en/home/library/poverty/ghana-sdgs-indicator-baseline-report-2018-.html

[23] World Education News + Reviews, Education in Ghana, (2019). Retrieved from https://wenr.wes.org/2019/04/education-in ghana; Takyi, Amponsah, Asibey & Ayambire (2019). An overview of Ghana's educational system and its implication for educational equity, (2019). Retrieved from https://www.tandfonline.com/doi/abs/10.1080/13603124.2019.1613565?scroll=top&needAccess=true&journalCode=tedl20

Regional and international commitments on agriculture and education expenditure

The African Union (AU) in 2003 recognised the importance of the agriculture sector to the economic development of its member states and committed to sustaining its growth and development through a Declaration in Maputo for member countries to make significant investments in the sector. This was part of the Comprehensive Africa Agriculture Development Programme (CAADP) which aimed at increasing food security, transforming agriculture and reducing poverty in Africa.

The Declaration among other decisions highlighted that governments should commit to allocating at least 10 percent of Total Government Expenditure (TGE) to Agriculture development in their respective countries. Additionally, African governments committed to sustaining a minimum annual agriculture sector growth of 6 percent. These commitments were further upheld at the Malabo Declaration on *accelerated agricultural growth and transformation for shared prosperity and improved livelihoods* in 2014. Ghana as a signatory to the declaration is therefore expected to uphold the commitments as stated in the various declarations.

On education, the United Nations (UN) adopted the Incheon Declaration in 2015 as a tool for accelerating the attainment of SDG 4 (ensuring inclusive and equitable quality education by 2030). As a signatory to the Declaration, Ghana committed to improving access to education by providing 12 years of free, publicly funded, equitable and quality primary and secondary education. The Declaration also proposes that governments allocate at least 4 to 6 percent of GDP and/or 15 to 20 percent of total public expenditure to their respective education sectors to enable them to achieve the targets of promoting educational opportunities.

This paper assesses the progress Ghana has made in response to its commitment to these declarations, particularly referencing the objective of the ABFA which seeks to ensure that the expenditure of petroleum revenues is equitable, efficient and meets the welfare needs of citizens.

Trend of government expenditure in agriculture and education

Data sourcing

Data on government expenditure in the agriculture and education sectors from 2005 to 2018 were mainly sourced from the Controller and Accountant General's Department (CAGD). CAGD provides data on actual annual government expenditure across the various sectors of the economy.

For agriculture, a guidance note was developed by the AU to track the performance of member countries in achieving the benchmarks as stated in the declaration.[24] The guidance note referred to agriculture expenditure as government expenditure on food crops, livestock, fisheries, forestry and hunting. These components are based on the Classification of Functions of Government (COFOG) as identified by CAGD to contain all government expenditures relevant to the aforementioned subsectors under the agriculture sector.

Earlier reviews by the Ministry of Food and Agriculture (MOFA)[25] in tracking the progress of CAADP used an "Enhanced COFOG" or a "COFOG Plus" system which included other crosscutting expenditure components that contribute directly but not wholly to the Agriculture sector. These crosscutting components include expenditure on rural electrification, feeder roads for agriculture development, rural land administration among others. The reviews also included expenditures made by the Ghana Cocoa Board (COCOBOD), although COCOBOD is a public corporation whose operations are not financed by the government through the budget.

These "enhanced COFOG" components used by the Ministry in its reviews inflate agriculture expenditure and provide a perception that the government has met the 10 percent expenditure target.[26] However, the appropriate approach needed to track actual government expenditures that contribute **directly and wholly** to the Agriculture sector is the COFOG system. The COFOG system is also applied in the analysis of government expenditure in education.

This study accounts for price effect based on 2013 constant prices which reflect the current rebasing of Ghana's GDP from 2006 to 2013. Unless otherwise stated, all real expenditure figures presented in this analysis are based on 2013 constant prices.

The trend of government expenditure in agriculture

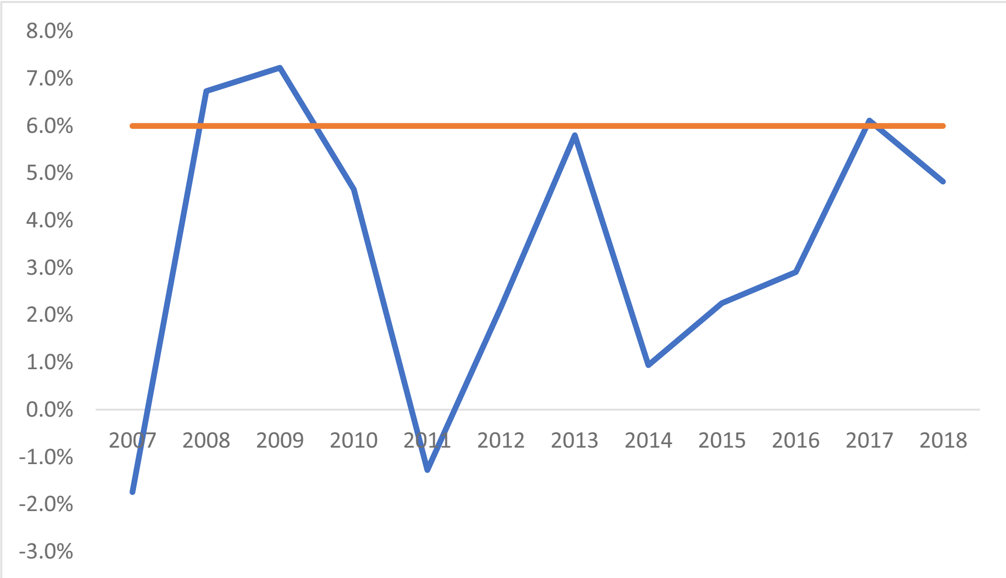
Under the Maputo and Malabo Declarations, member countries pledged to sustain a 6 percent growth in the agriculture sector. This declaration by AU member states creates an assumption that all things being equal, higher investment in agriculture will lead to higher growth in the sector. Ghana met the target in 2008 and sustained it in 2009 as growth is increased from 6.7 percent to 7.2 percent. However, the growth could not be sustained between 2010 and 2016 as it hovered between -1.3 percent to 5.8 percent. The target was met again in 2017 when a growth rate of 6.1 percent was recorded, but this could not be sustained thereafter.

[24] African Union–New Partnership for Africa's Development (2015). The AU guidance note on tracking and measuring the levels and quality of government expenditures for agriculture. Available at http://www.nepad.org/resource/au-guidance-note-tracking-and-measuring-levels-and-quality-government-expenditures.

[25] Ministry of Food and Agriculture (2013). Basic Agricultural Public Expenditure Diagnostic Review. Report under Strengthening National Comprehensive Agricultural Public Expenditure in Sub-Saharan Africa. Accra, Ghana; Ministry of Food and Agriculture (2017). Agriculture Public Sector Expenditure Review: Lite Tool (AgPER Lite). Accra, Ghana.

[26] Benin, S. (2019). Trends and composition of government expenditures on agriculture in Ghana, 1960-2015. Intl Food Policy Res Inst.

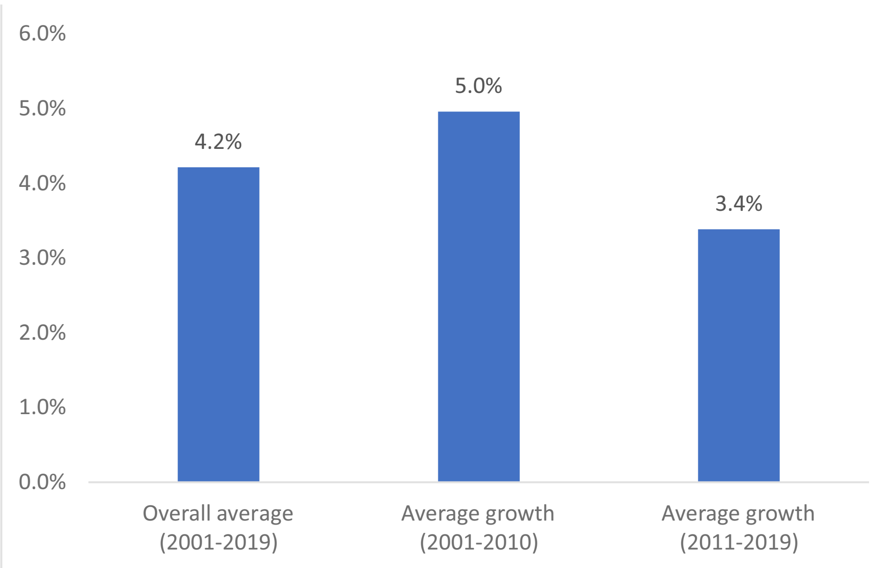
Figure 2: GDP growth in the Agriculture sector from 2007 to 2018 against CAADP benchmark



Source: Authors' construction based on data from CAGD

Before Ghana's receipt of oil revenues, annual growth in the sector between 2001 and 2010 averaged about 5 percent. However, this growth rate has declined to about 3.4 percent between 2011 and 2019 when Ghana received revenue from its oil production. This suggests that oil revenues have not played much role in sustaining the growth of the agriculture sector in Ghana, although the sector has been prioritised to receive a share of ABFA since 2011.

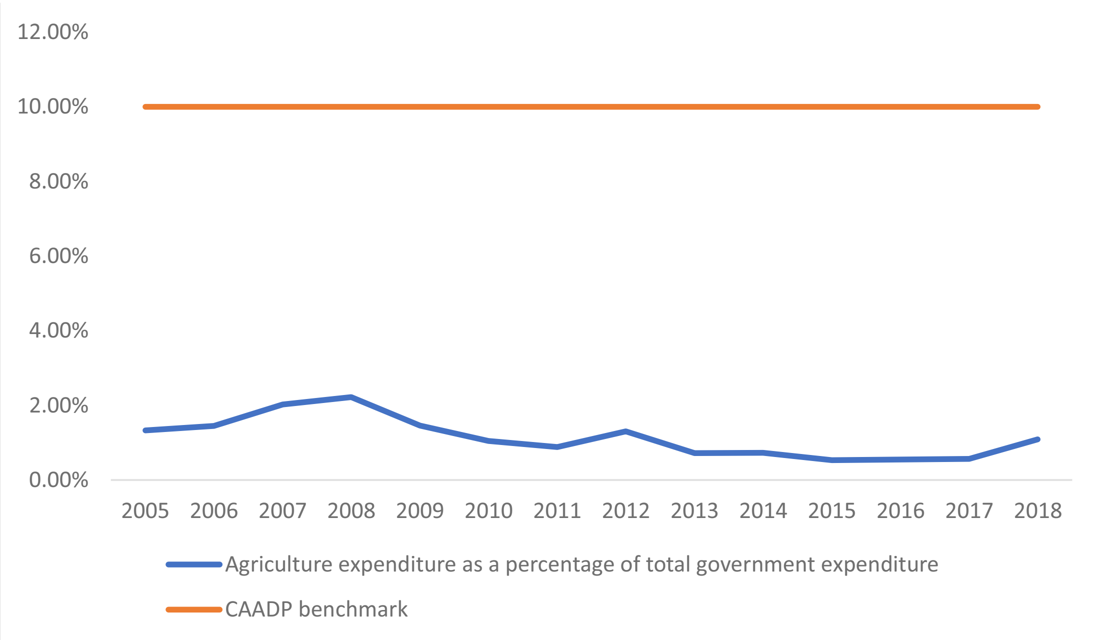
Figure 3: Agriculture GDP growth rate from 2001 to 2019



Source: Authors' construction based on data from CAGD

Real expenditure (at 2013 constant prices) in the sector increased from GHS 232 million in 2005 to about GHS 390 million in 2018 which represents an average year on year growth rate of about 13 percent. Generally, the share of expenditure in the Agricultur e sector to Total Government Expenditure (TGE) has declined within the period under review. It ranged between a minimum of 0.5 percent (which occurred in 2015) to a maximum of 2.6 percent (which occurred in 2008), with an average share of 1.3 percent over the period. This indicates that Ghana is far from achieving the agriculture sector expenditure benchmark of at least 10 percent of TGE as outlined in the Maputo and Malabo declarations.

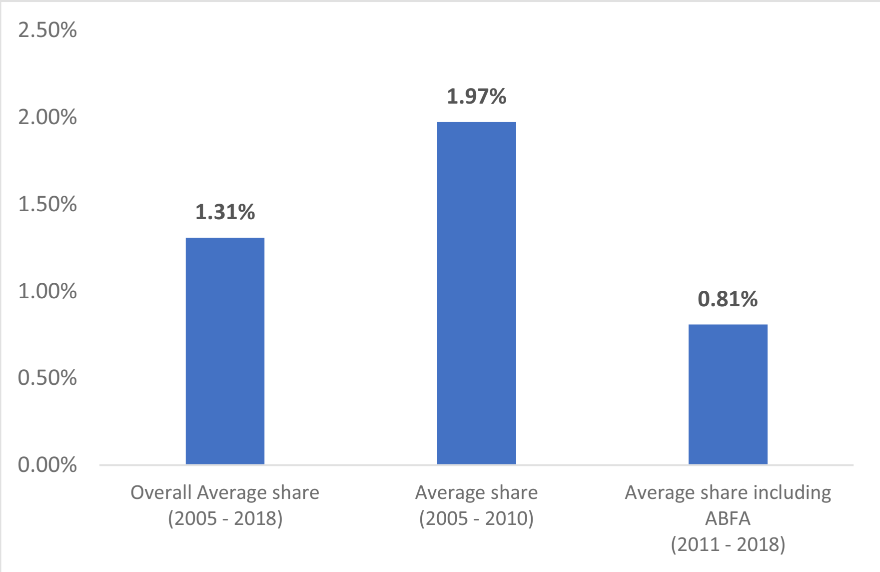
Figure 4: Agriculture expenditure as a percentage of total government expenditure from 2005 to 2018



Source: Authors' construction based on data from CAGD reports (2005-2019)

Although the agriculture sector has received disbursements from the ABFA, the percentage share of the sector's expenditure to TGE has reduced marginally. Prior to Ghana's receipt of petroleum revenues (between 2005 and 2010), expenditure in the Agriculture sector averaged about 1.97 percent of TGE. This reduced to 0.81 percent between 2011 and 2018 when the sector was prioritised for ABFA expenditure.

Figure 5: Average share of agriculture sector expenditure to TGE between before and after ABFA allocation



Source: CAGD reports (2005-2019);

A comparison of the expenditure on the sector and its growth rate shows an interesting trend. With an average expenditure of about 1.4 percent of TGE, the 6 percent growth rate was achieved in 2008, 2009 and 2017. In the remaining years, however, the growth rate was significantly below the 6 percent target. This does not suggest that the CAADP target of 6 percent annual growth can be sustained with less than 2 percent of TGE committed to the agriculture sector. Instead, it indicates two main issues; firstly, it means that sustaining the growth of the sector requires consistent investments, driven by increased government expenditure to the sector. Secondly, the growth rate of the agriculture sector is affected by other variables including private sector expenditure, and climatic factors that affect output.

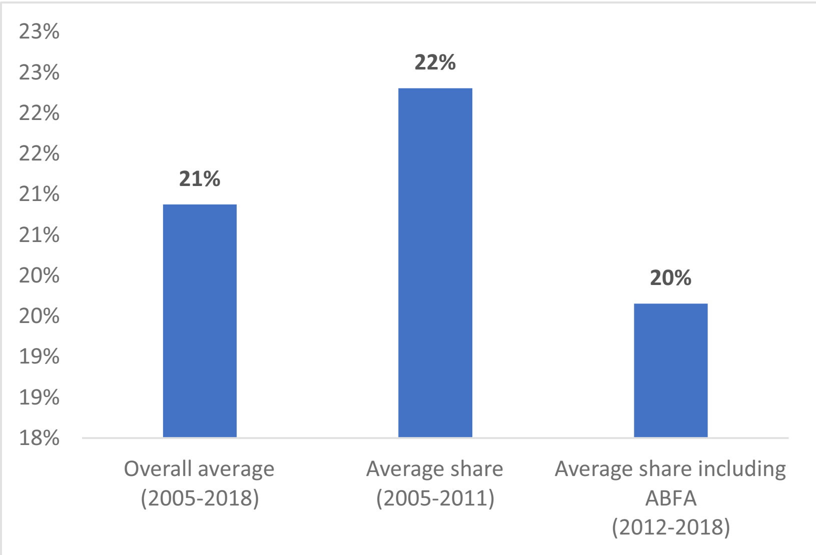
The challenges and inconsistencies in growth within the agriculture sector require substantial investments in areas that require attention in the sector. For example, research and development, irrigation expansion to encourage year-round farming, and improved storage and processing facilities. Given the importance of the sector to Ghana's economy and the comparative advantage for crop production and animal rearing, the agriculture sector holds the promise to diversify the economy and prevent socioeconomic imbalances on the back of the extractive sector.

The trend of government expenditure in education

The data show that in real terms, government expenditure between 2005 and 2018 (at 2013 prices) in the education sector ranged between GHS 3.7 billion (which occurred in 2005) to about GHS 7.8 billion (which occurred in 2012). The share of education expenditure to TGE ranged from 16 percent (which occurred in 2016) to 28 percent (which occurred in 2012), with an average TGE share of approximately 21 percent. This indicates that Ghana had committed over 15 percent of TGE to the education sector even before the Incheon Declaration in 2015 (See Figure 7).

The average share of education expenditure to TGE before ABFA receipts (2005 to 2011) was about 22 percent. This reduced to approximately 19 percent of TGE after the sector began receiving funds from the ABFA (2012-2018). This reduction is as a result of the significant fall in education sector expenditure from 28 percent in 2012 to 16 percent in 2016. However, this increased steadily from 16 percent in 2016 to 21 percent in 2018.

Figure 6: Average share of education sector expenditure to TGE between before and after ABFA allocation



Source: Authors' construction based on data from CAGD reports (2005-2019)

The education sector was not directly prioritised between 2011 and 2016. Instead, it benefited from two priority areas; Roads and Other Infrastructure, and Capacity Building. Within this period, the sector had received a total of about GHS 300 million as support from ABFA for physical infrastructure and service delivery. In 2017, physical infrastructure and service delivery in education was made a priority area for ABFA receipts. Between 2017 and 2019, the education sector had received a total of about GHS 1.19 billion.[27] This increase in the allocation contributed to the increase in the share of education expenditure to TGE since 2017.

Estimates from CAGD further show that education expenditure as a percentage of GDP ranged from a minimum of 3.3 percent (which occurred in 2017) to a maximum of 6.8 percent (which occurred in 2012). The share of education expenditure to GDP fell below the benchmark value between 2014 and 2017 as shown in Figure 8. These periods also witnessed significant reductions in the share of education sector expenditure to total government expenditure.

[27] These are nominal figures and have not been deflated as in the case of the analysis of total government expenditures and expenditures in the education and agricultural sectors.

Figure 7: Education expenditure as a percentage of TGE

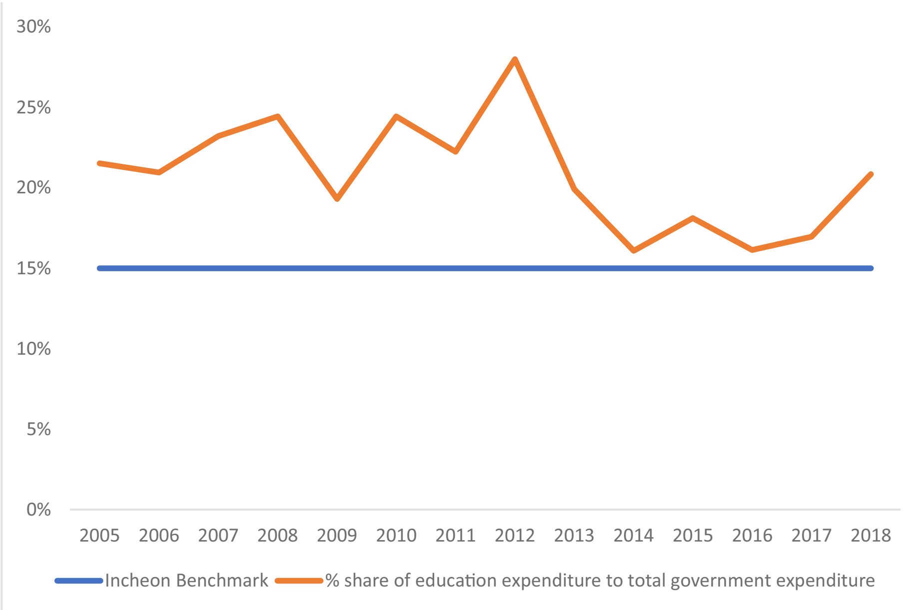
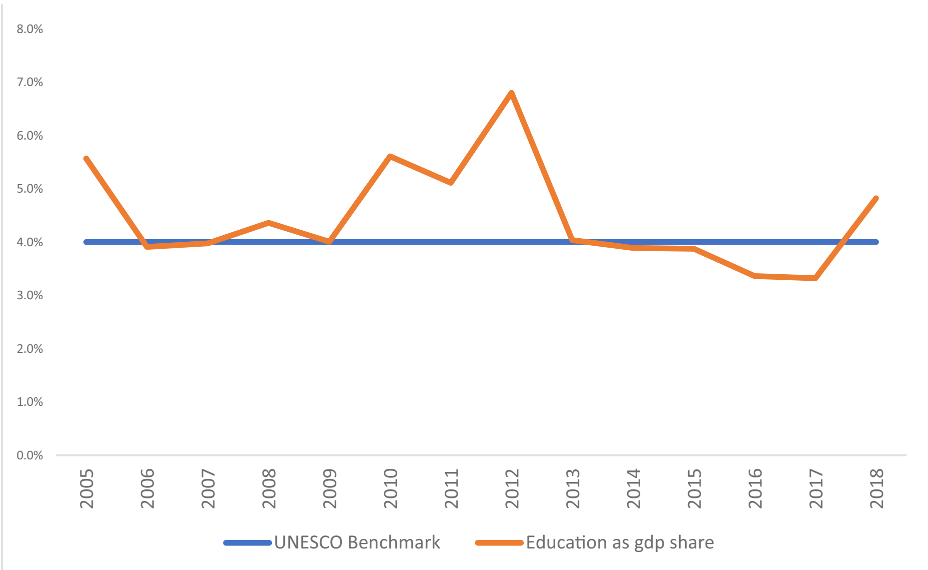


Figure 8: Education expenditure as a share of GDP



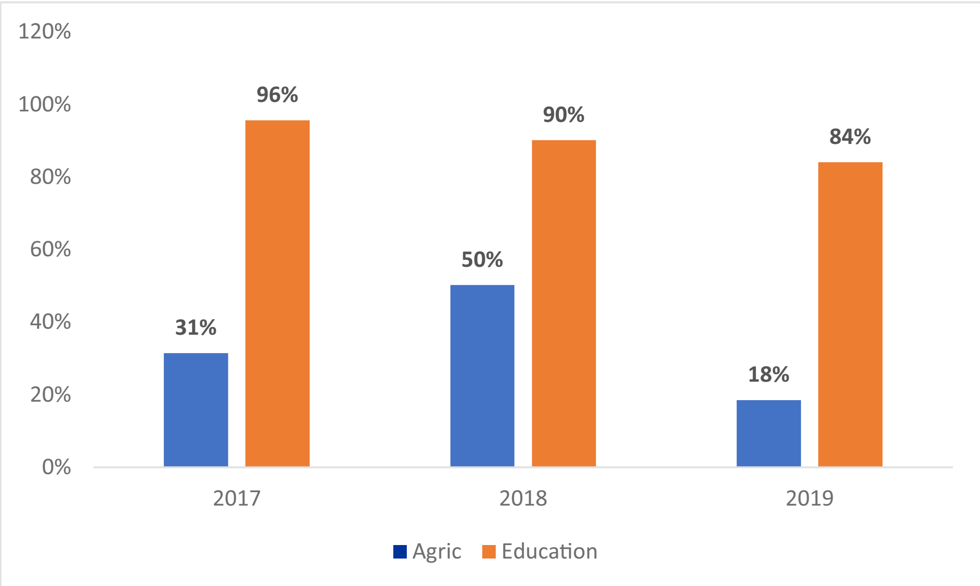
The data show that Ghana has consistently met the global education expenditure benchmarks. However, age-old challenges such as inadequate infrastructure and the lack of teaching and learning materials continue to constrain the sector. Therefore, more funding is required to address these problems, on the assumption that there is efficiency of spending. Otherwise, the efficiency of spending in the sector also requires interrogation.

Discussion of findings

The education sector has undoubtedly received a high level of attention from the government of Ghana long before the discovery and production of oil. This has been evidenced by the level of government expenditures in the sector, which have met the standards of the UN. However, the same cannot be said for the agriculture sector which has been a priority area since 2011. Between 2011 and 2019, the agriculture sector received total ABFA of about GHS 600 million. This however did not significantly contribute to improving the share of agriculture expenditure to TGE. This indicates that the ABFA essentially replaced the other sources of GoG revenue that is allocated to the sector.

Government has consistently failed to fully disburse allocated funds from ABFA to the agriculture sector. Between 2017 and 2019, actual ABFA disbursements to the agriculture sector formed an average of 33 percent of budgeted ABFA spending in the sector. In contrast, the education sector received an average of 90 percent of its planned ABFA expenditure. In 2019, the agriculture sector received only 18 percent of its planned ABFA expenditure whereas the education sector received 84 percent of its planned expenditure.

Figure 9: Percentage of actual to budgeted ABFA expenditure in Agricult ure and Education sectors



Source: Ministry of Finance

It is commendable that the government has consistently met over 80 percent of its planned ABFA expenditure in the education sector. This has helped to increase access to education, especially in second cycle institutions. On the contrary, the government has not attached the same level of importance to disbursements of ABFA to the agriculture sector. As of 2019, the government had an accumulating unspent ABFA balance of about GHS 1.47 billion. These could have been used to meet the full disbursement of ABFA allocations in agriculture and education.

Conclusions and recommendations

The agriculture and education sectors are relevant to economic diversification and poverty reduction in Ghana. The development of these sectors requires that substantial investments are made to sustain their contribution to the growth of the general economy. The government of Ghana showed its commitment to developing these sectors by prioritising them for petroleum revenue allocation with the expectation that petroleum revenues would contribute to investments in these sectors. This study sought to investigate the trends in real expenditure in the agriculture and education sectors. The key findings of the study are as follows:

1. **Ghana has not been able to meet its agriculture expenditure targets as outlined by the Comprehensive Africa Agriculture Development Programme (CAADP).** Contrary to reviews from the Ministry of Food and Agriculture, data from CAGD indicate that when actual COFOG measures are used, Ghana requires increased effort to meet the CAADP target of 10 percent of total government expenditure in the agriculture sector.
2. **The education sector has met the minimum education expenditure benchmark of 15 percent of total government expenditure and/or at least 4 percent of GDP amidst persistent challenges**. For over a decade, government expenditure in education has surpassed the Incheon declaration benchmark of at least 15 percent of total government expenditure. However, persistent problems in the education sector require more funding on the assumption of the efficiency of spending.
3. **The education sector receives more attention for ABFA allocation than the agriculture sector.** While the education sector has received considerable disbursements of ABFA receipts, the same cannot be said for the agriculture sector. On average, the education sector has received about 90 percent of its planned ABFA expenditure between 2017 and 2019, compared to 33 percent in the agriculture sector within the same period.

In light of these findings, we recommend that:

1. Petroleum revenue allocation should not be a substitute for existing government expenditure in the agriculture and education sectors. Rather revenue allocations should lead to a substantial increase in total government expenditure and investment in education and agriculture to address the challenges of the sectors. Otherwise, the prioritisation of the sectors will not achieve the objective of the PRMA.
2. The government must ensure that planned ABFA allocation to the agriculture and education sectors are fully disbursed. The current practice of under disbursement, even when projected ABFA is realised, denies the sectors of the need cash flow for investment.
3. Investments in the agriculture and education sectors should be deliberate and targeted towards critical areas necessary for the growth of the sectors.

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