

GHANA'S 10 PERCENT AGRICULTURE EXPENDITURE SAGA: WHY REPORTED EXPENDITURE SHARES ARE NOT WHAT THEY SEEM

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INTRODUCTION

Agricultural-led development in Africa was renewed with the launch of the Comprehensive Africa Agricultural Development Programme (CAADP) by the heads of state and governments at the African Union (AU) Summit in Maputo in 2003. The African leaders agreed to spend 10 percent of their national expenditure budget on the agricultural sector each year in pursuit of 6 percent annual agricultural growth. Since then, the question of what figures to count as government agriculture expenditure (GAE) toward the CAADP 10 percent target has been an issue. Even after the AU issued a guidance note on the topic (AU-NEPAD 2015), several countries continued to dispute the structure of the agreement. The official AU guidance note, which is drawn from the United Nations' classification of the functions of government (COFOG) (IMF 2014), defines GAE as expenses of the general government sector on activities involving the production and marketing of crops, livestock, forestry, and fishing and hunting. The indicator for assessing the performance of AU member states against the CAADP 10 percent target is given by the share of GAE in government total expenditure (GTE), which is $GAE \times 100 / GTE$. The controversy derives from mistreatments of the terms "government" and "agriculture" in the accounting of GAE; contrary to the official AU guidance note, some countries have included expenditures of some nongovernmental units or expenses on some nonagricultural functions in their GAE calculations. These different treatments distort the tracking of trends in government spending on agriculture; result in overestimations of government expenditure performance against the CAADP 10 percent target; and mask the low and often declining trend of government expenditures on critical agricultural functions such as research and development, irrigation, and extension. Together, these discrepancies undermine efforts to boost the provision of public goods and services in the agricultural sector for a successful agricultural-led development on the continent.

Ghana is one of the AU member states where these issues are prevalent, as results from agricultural public expenditure reviews (agPERs) conducted there (MOFA 2013; 2017) are used to report the performance on GAE against the CAADP 10 percent target. In one example of the problem with this assessment, the agPERs use concepts such as "COFOG-plus" (MOFA 2013) or "enhanced-COFOG" (MOFA 2017) to include government expenditures on feeder roads as part of GAE. However, because feeder roads promote the socioeconomic development of entire rural communities, not merely the agricultural sector, this expenditure category should not be included in GAE. Furthermore, the GAE includes the expenses of the Ghana Cocoa Board (Cocobod), a public corporation or state-owned enterprise that manages the cocoa subsector. This is contrary to the official AU guidance note because Cocobod engages in market production activities that are financed entirely by the cocoa subsector, and there is no transfer from taxpayers through the Cocobod to the entire agricultural sector. Consequently, the estimates of Ghana's share of GAE in GTE that are reported in the agPERs against the

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CAADP 10 percent target are higher than they should be according to the AU guidance note. The reported estimates range from 6.5 to 21.2 percent in 2001–2011 (MOFA 2013) and from 5.8 to 7.5 percent in 2012–2015 (MOFA 2017). They also are higher than those obtained from official government accounts. In 2012–2015, for example, the estimates reported by the auditor general on the public accounts of the general government sector (CAGD 2018) show that the share is less than 2 percent, ranging from 0.5 to 1.7 percent. These estimates, which are consistent with the official AU guidance note, reveal that the government of Ghana is far from meeting the CAADP 10 percent agriculture expenditure target than is reported in the agPERs.

This note first discusses the differences between the general government sector and the public corporations sector, and then presents the rationale for when to add and separate expenditures in the two sectors in the accounting of government expenditures. It then presents revised estimates for Ghana on the share of GAE in GTE from 2001 to 2015, which exclude expenditures of Cocobod and expenditures on nonagricultural functions from GAE, in accordance with the official AU guidance note.² The formula for this is given by $GAE \times 100 / GTE$. It proposes another formula for obtaining parallel estimates if the Cocobod expenditures are included in the calculations, as attempted in the agPER studies. This revised formula adds the expenditures of all of Ghana's public boards and corporations (PBCs) to GTE in the denominator to make it comparable to adding expenditures of Cocobod to GAE in the numerator. The new formula therefore would be $(GAE + PBCAE) \times 100 / (GTE + PBCTE)$, where PBCAE denotes PBCs' agriculture expenditure and PBCTE denotes PBCs' total expenditure. The data used are from the two agPERs (MOFA 2013; 2017) and annual reports on the accounts and statements of the government (CAGD 2018), public boards, corporations, and other statutory institutions (AG 2018), and the Cocobod (Ghana Cocoa Board 2018).

THE PUBLIC SECTOR, COFOG, AND CLASSIFICATION OF EXPENSES

There are two fundamental issues here: first, differentiating the *general government* from the *public boards and corporations* (PBCs) within the broader public sector; and second, differentiating the activities of PBCs in terms of whether they are nonmarket-based or market-based. Typically, the government gives grants or subsidies to PBCs to perform various functions in the economy, and the PBCs (also referred to as state-owned enterprises in some cases) are potential sources of financial gain to the government units that own or control them (Figure 1). A PBC may carry out its functions on a nonmarket basis, as in the cases of the Council for Scientific and Industrial Research (CSIR), the Ghana Atomic Energy Commission (GAEC), the Ghana Irrigation Development Authority (GIDA), and the Grains and Legumes Development Board (GLDB). The activities of this type of PBC are financed primarily by the government units that own or control them. Although these PBCs may generate some income through levies and fees (referred to as internally generated funds) that are not economically significant to finance part of its activities, any excess is transferred to the government.

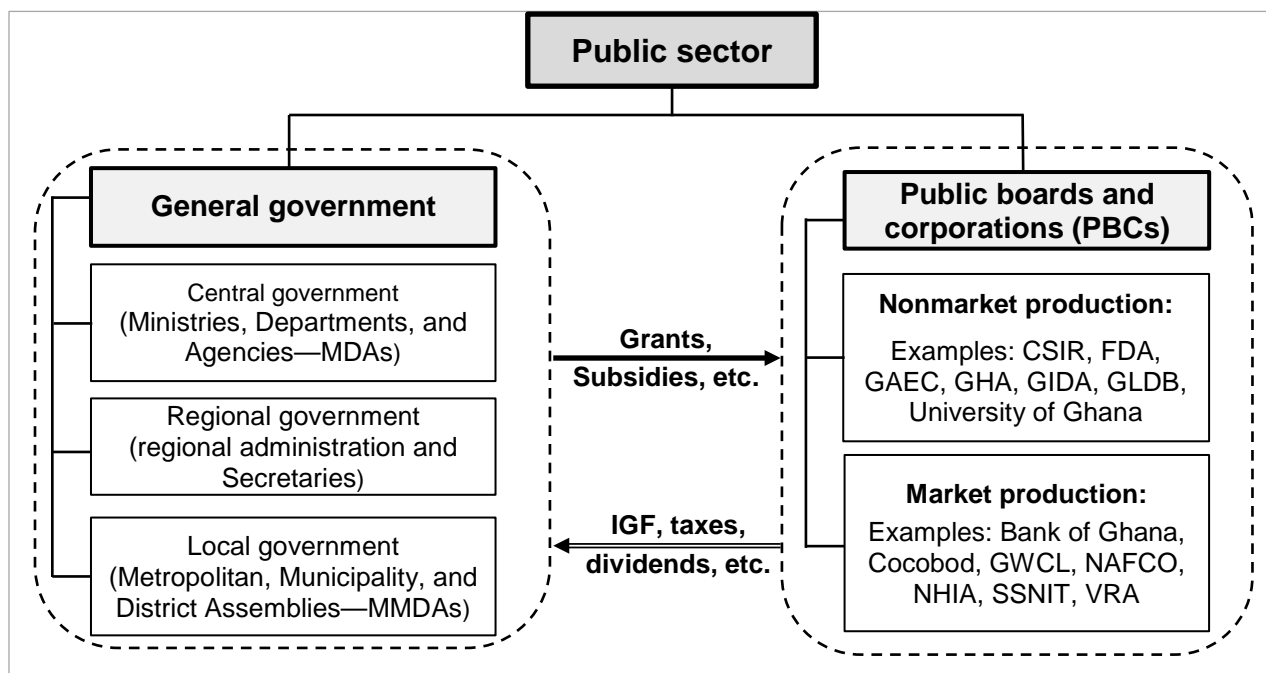
Alternatively, a PBC may carry out its functions on a market basis, as in the cases of the Cocobod, the National Food Buffer Stock Company (NAFCO), and the Volta River Authority. This type of PBC is autonomous and self-sustaining, and produces goods and services for the market at economically significant prices. Its activities are financed primarily by the subsector or population that it serves, and it transfers part of the generated revenue or profit to the government units that own or control them in the form of taxes, dividends, and other financial vehicles.

The transactions between government units and PBCs are captured in public accounts of the general government sector on a *consolidated* basis, which is an accounting of the net transactions between all the government units and all the PBCs owned or controlled by the government units. The net transfers from the government to the PBCs are captured under *expense*; the net receipts by the government from the PBCs are captured under *revenue*. With respect to expense, which is defined as a decrease in net worth resulting from a transaction, there are eight main economic classes in the COFOG system: (1) compensation of employees, (2) use of goods and

² An accompanying note (Benin 2019) analyzes the trends and composition of expenditure on agriculture by the general government sector from 1960 to 2015.

services, (3) consumption of fixed capital, (4) interest, (5) subsidies, (6) grants, (7) social benefits, and (8) other expense (IMF 2014). Expense can also be classified according to the following 10 functions: (1) general public services; (2) defense; (3) public order and safety; (4) economic affairs; (5) environmental protection; (6) housing and community amenities; (7) health; (8) recreation, culture, and religion; (9) education; and (10) social protection. Agriculture, which includes crops, livestock, forestry, and fishing and hunting, falls under the function of economic affairs (IMF 2014; AU-NEPAD 2015).

Figure 1 : The public sector in Ghana



Source: Authors' illustration based on IMF (2014) and AG (2018).

Notes: IGF = internally generated funds; PBCs = public boards, corporations, and other statutory institutions. CSIR = Council for Scientific and Industrial Research, FDA = Food and Drugs Authority, GAEC = Ghana Atomic Energy Commission, GHA = Ghana Highways Authority, GIDA = Ghana Irrigation Development Authority, GLDB = Grains and Legumes Development Board, GWCL = Ghana Water Company Limited, NAFCO = National Food Buffer Stock Company Limited, NHIA = National Health Insurance Authority, SSNIT = Social Security and National Insurance Trust, and VRA = Volta River Authority.

ADDING EXPENDITURES OF COCOBOD TO GAE IS NOT THEORETICALLY SOUND

Government units are unique kinds of legal entities with four main economic functions: assume responsibility for providing goods and services to the community or individual households primarily on a nonmarket basis, redistribute income and wealth through transfers, engage primarily in nonmarket or not-for-profit production, and finance their activities primarily out of taxation or other compulsory transfers (IMF 2014). Thus, for expenditure to be classified as GAE, it must be incurred in performing the above four economic functions in relation to the agricultural sector (crops, livestock, forestry, and fishing and hunting). In other words, the expenditures must be incurred by a legal government unit (e.g., the Ministry of Food and Agriculture (MOFA), the Department of Forestry, the Ministry of Fisheries and Aquaculture Development) or a nonmarket-nonprofit PBC (e.g., CSIR, GIDA, GLDB) that provides goods and services for the agricultural sector. As a result, the expenditures of PBCs such as CSIR, GIDA and GLDB may be added to GAE. In fact, consolidated government accounts already capture such expenditures in terms of the grants, subsidies, or subventions that the government gives to these PBCs. The expenditures of entities such as the Cocobod and NAFCO, however, may not be added to GAE, because Cocobod and NAFCO provide market goods and services at economically significant prices in order to finance their activities. As such, it would not be theoretically sound to add Cocobod or NAFCO expenditures to GAE.

From a practical perspective as well, the financial management and expenditure determination processes of such PBCs are different from those of the government units that own or control them, and there is no way of reallocating expenditures across PBCs, as the addition of government and PBC expenditures may imply. For example, Cocobod is controlled by the Ministry of Finance and NAFCO by MOFA, and there is no way of reallocating expenditures from NAFCO to Cocobod or vice versa.

IF COCOBOD EXPENDITURE IS ADDED TO GAE, THEN ALL PBC EXPENDITURES SHOULD BE ADDED TO GTE

If expenditures of Cocobod are added to GAE, as done in the two agPER studies (MOFA 2013; 2017), then the most straightforward way to create a parallel estimator to the one in the AU guidance note would be to add the expenditures of all market-based PBCs to GTE. These added expenditures should include all PBC expenditures that are not already captured as government expenditure through the grants, subsidies, or subventions given to PBCs. Using notation like the one used for the government sector, let the agriculture and total expenditures of such PBCs be represented by PBCAE and PBCTE, respectively.³ Then, the parallel estimator is given by $(GAE+PBCAE) * 100 / (GTE+PBCTE)$. Although it is interesting to look at how figures would turn out when market-based PBCs expenditures are added to GAE and GTE, it is not theoretically sound (as the preceding section indicates). It would be sounder to analyze the expenditures of Cocobod and of other market-based PBCs separately; with respect to agriculture, these expenditures can be estimated by $PBCAE * 100 / PBCTE$.

REVISED ESTIMATES ACCORDING TO THE OFFICIAL AU GUIDANCE NOTE

The two agPER studies (MOFA 2013; 2017) used the enhanced-COFOG definition to include three components of agriculture expenditure: (1) GAE, the government expenditure on the noncocoa subsector;⁴ (2) PBCAE, the Cocobod expenditure on the cocoa subsector; and (3) government expenditure on feeder roads, denoted by GFRE (see Table 1 for details). Then, the studies used $(GAE+PBCAE+GFRE) * 100 / GTE$ as the estimator to track the performance of the government's expenditure on agriculture against the CAADP 10 percent target. Their results show that the share grew from 6.7 percent in 2001 to between 10 and 13 percent in 2004–2009, peaked at 21.2 percent in 2010, and decreased to around 6.5 percent in 2014 and 2015. The average share over 2001–2015 is 9.2 percent.

However, when PBCAE and GFRE are excluded from the numerator—to be consistent with the estimator in the official AU guidance note, which is $GAE * 100 / GTE$ —the estimates are lower and their trajectory changes. In the revised calculations, the shares are about 3 percent in 2001–2013, increased to between 5 and 7 percent until 2009, peaked at 11.9 percent in 2010, and decreased sharply to less than 2 percent in 2013–2015. The average share over the 2001–2015 periods is 3.7 percent, almost three times lower than the 9.2 percent reported in the agPER studies. One point of note in Table 1 is the relatively low GTE values in 2009–2011, leading to the relatively large shares in the same periods. Comparing GTE values from the agPER studies with those obtained from the auditor general's reports (CAGD 2018), the GTE values reported in the agPER studies generally were lower, with the largest discrepancies of more than 20 percent occurring in 2001, 2002, 2010, and 2011 (Table 2).

³ Administrative expenses are used to make this notation comparable with the expenses incurred by government units. Administrative expenses include costs associated with general administration, finance, and interest payments, but exclude direct cost or transfers to consumers or beneficiaries.

⁴ The noncocoa subsector is noncocoa crops, livestock, forestry, and fishing and hunting.

Table 1 : Agriculture sector expenditure—COFOG versus enhanced-COFOG definitions, 2001–2015

Year	Government total expenditure (GH¢ million, 2001 constant prices) (GTE)	Agriculture expenditure by subsector, enhanced-COFOG (GH¢ million, 2001 constant prices)				Share of agriculture expenditure in government total expenditure (%)	
		Noncocoa (GAE)	Cocoa (PBCAE)	Feeder roads (GFRE)	Total (GAE+PBCAE+GFRE)	Enhanced-COFOG (GAE+PBCAE+GFRE)* 100/GTE	COFOG (GAE*100/GTE)
2001	382.0	12.0	13.3	0.3	25.6	6.7	3.1
2002	524.0	15.9	16.0	13.3	45.2	8.6	3.0
2003	1,177.0	38.9	37.7	20.6	97.2	8.3	3.3
2004	1,402.0	80.8	43.6	21.3	145.7	10.4	5.8
2005	1,444.0	87.7	50.6	55.8	194.1	13.4	6.1
2006	1,937.0	99.2	62.7	46.9	208.8	10.8	5.1
2007	2,504.0	138.2	69.5	47.5	255.2	10.2	5.5
2008	3,324.0	166.1	98.9	165.4	430.4	12.9	5.0
2009	2,620.0	188.1	66.0	80.7	334.8	12.8	7.2
2010	1,670.0	199.1	68.9	85.4	353.4	21.2	11.9
2011	2,693.0	223.3	79.4	92.1	394.8	14.7	8.3
2012	5,445.1	123.0	130.9	61.0	314.9	5.8	2.3
2013	6,504.0	82.4	350.8	51.5	484.7	7.5	1.3
2014	6,554.5	110.7	293.5	19.6	423.8	6.5	1.7
2015	6,537.0	98.8	306.6	15.2	420.6	6.4	1.5
Average	2,981.2	110.9	112.6	51.8	275.3	9.2	3.7

Source: Authors' calculations based on MOFA (2013; 2017) and AU-NEPA (2015).

Notes: Noncocoa is crops (excluding cocoa), livestock, forestry, and fishing and hunting. For the shares, the average is calculated as sum of the numerator values divided by the sum of the denominator values. The estimator of the share based on the enhanced-COFOG definition is used in MOFA (2013; 2017). The estimator of the share based on the COFOG definition is consistent with the official AU guidance note (AU-NEPA 2015).

Table 2 : Share of government agriculture expenditure (GAE) in government total expenditure (GTE)—effect of differences in GTE, 2001–2015

Year	Government total expenditure (GTE), GH¢ million at 2001 constant prices			Share of government agriculture expenditure, GAE*100/GTE		
	agPER studies ¹	Auditor general's reports ²	% overestimated in the agPERs	agPER studies ¹	Auditor general's reports ²	% overestimated in the agPERs
2001	382.0	1,295.0	-70.5	3.1	0.9	239.0
2002	524.0	1,119.8	-53.2	3.0	1.4	113.7
2003	1,177.0	1,358.1	-13.3	3.3	2.9	15.4
2004	1,402.0	1,641.8	-14.6	5.8	4.9	17.1
2005	1,444.0	1,633.8	-11.6	6.1	5.4	13.1
2006	1,937.0	1,933.4	0.2	5.1	5.1	-0.2
2007	2,504.0	2,455.8	2.0	5.5	5.6	-1.9
2008	3,324.0	2,660.7	24.9	5.0	6.2	-20.0
2009	2,620.0	2,814.3	-6.9	7.2	6.7	7.4
2010	1,670.0	3,758.1	-55.6	11.9	5.3	125.0
2011	2,693.0	4,501.1	-40.2	8.3	5.0	67.1
2012	5,445.1	5,933.9	-8.2	2.3	2.1	9.0
2013	6,504.0	6,357.2	2.3	1.3	1.3	-2.3
2014	6,554.5	6,822.7	-3.9	1.7	1.6	4.1
2015	6,537.0	5,982.9	9.3	1.5	1.7	-8.5
Average	2,981.2	3,351.2	-11.0	3.7	3.3	12.4

Source: Authors' calculations based on: ¹ annual reports of the auditor general on the public accounts of the general government sector (CAGD 2018), ² MOFA (2013; 2017).

Notes: agPER = agricultural public expenditure review. The column of results based on auditor general's reports is the most consistent with the official AU guidance note (AU-NEPAD 2015).

Therefore, the results in Table 2 under the column of results based on the auditor general's reports are the most consistent with the official AU guidance note. These results reveal that the share of GAE in GTE tended to be overestimated at between 67 and 239 percent in 2001, 2002, 2010, and 2011. Only in five years (2006, 2007, 2008, 2013, and 2015) was GTE overestimated in the agPER studies compared to those obtained from the auditor general's reports, but the largest overestimation was only 25 percent in 2008. On average in 2001–2015, the share of GAE in GTE is 3.3 percent. These revised estimates show that, contrary to the agPER studies, the government of Ghana is far from meeting the CAADP 10 percent agriculture expenditure target.

REVISED ESTIMATES WHEN EXPENDITURES OF PBCs ARE ADDED TO GAE AND GTE

The Cocobod expenditure data were obtained from three sources: the agPER studies (MOFA 2013; 2017), the auditor general's reports on the accounts of PBCs (AG 2018), and Cocobod financial statements (Ghana Cocoa Board 2018). There are discrepancies in the data for some years, and so this assessment uses the data from the different sources to present separate results. GTE values are from the auditor general's reports on the government accounts (CAGD 2018). Unlike GTE, in which the annual values can be obtained from the government's consolidated and audited annual public accounts, there are no comparable official estimates of PBCTE for all PBCs. For this note, we extracted information from various annual reports of the auditor general on the public accounts of PBCs (AG 2018). Although Ghana has more than 90 PBCs, the annual reports cover different samples of them in each year's report. As a result, we used data for the 14 largest market-based PBCs, which together account for more than 90 percent of the total expenditure in each year for the sample covered. Results of the revised estimates— $(GAE+PBCAE) * 100 / (GTE+PBCTE)$ —are presented in Table 3.

First, expenditures on the cocoa subsector by Cocobod (PBCAE) that are reported in the agPER studies (MOFA 2013; 2017) are generally higher than those obtained from the other sources (AG 2018; Ghana Cocoa Board 2018). The estimated shares are in the range of 1.4 to 8 percent from 2001 to 2015, with the lowest shares occurring in 2001–2002 and peaking in 2008 or 2009, depending on the data sources used. The average share over 2001–2015 is about 5.4 percent. Compared to the estimates in the agPER studies, these estimates are lower on average by two percentage points, with the largest discrepancy in 2010 by nearly 10 percentage points. When the expenditures of PBCs are added to those of the government, these results not only are not theoretically sound, but also mask the lower shares of government expenditures on agriculture, which averaged 3.3 percent in 2001–2015 (Table 2).

Analyzing the expenditures of market-based PBCs separately— $PBCAE * 100 / PBCTE$ —shows that Cocobod expenditures account for about 18 percent of the total expenditure for all market-based PBCs operating in Ghana. To assess the relative profitability or efficiency of Cocobod to other market-based PBCs, one may compare this level of expenditure with other indicators such as size of the subsector served, the total cost and revenue of operations, or the dividends paid to government. This type of analysis is beyond the scope of the note.

CONCLUSIONS AND IMPLICATIONS

In Ghana and other countries, controversy over what figures to count as GAE as a share of GTE toward the CAADP 10 percent target continues to impede the tracking of this indicator. Such discrepancies may side-track policy actions and efforts needed to sustainably raise productivity and growth in the sector. Two recent agPER studies conducted in Ghana show high estimates of performance in this indicator at 6.7–21.2 percent in 2001–2011 and 5.8–7.5 percent in 2012–2015. However, these estimates are not consistent with the official AU guidance note on tracking this indicator, which specifies that countries should use expenses of the general government sector on agriculture—crops, livestock, forestry, and fishing and hunting. First, the two Ghana agPER studies include some nonagricultural expenditures, such as on feeder roads. Second, Cocobod expenditures are included in GAE when they should not be. Cocobod is a public corporation that is engaged in the provision of market goods and services for the cocoa subsector, and it does not redistribute income or wealth by means

of transfers to the entire agricultural sector. Moreover, its activities are financed out of the cocoa that it exports, which means that it is not theoretically sound to add Cocobod expenditures to GAE. Furthermore, agPER studies over the past several years have underestimated GTE, and consequently overestimate the performance of the indicator used to track government expenditure against the CAADP 10 percent target.

Table 3 : Share of agriculture expenditure in total expenditure for government and public boards and corporations combined, 2001–2015

Year	Expenditure (GH¢ million, 2001 constant prices)						Share of agriculture expenditure in total expenditure			Compare to estimated shares in the agPER studies ² (GAE+PBCAE)* 100/GTE
	Government expenditure		Cocobod expenditure on Cocoa (PBCAE)			Other public boards and corporations' total expenditure (PBCTE _{oth}) ³	(GAE+PBCAE)*100/ (GTE+PBCAE+ PBCTE _{oth})			
	Total (GTE) ¹	Agriculture (GAE) ²	Based on data from:				Based on PBCAE data from:			
		agPER studies ²	Auditor general's reports ³	Cocobod financial reports ⁴	agPER studies	Auditor general's reports	Cocobod financial reports			
2001	1,295.0	12.0	13.3	8.5	31.7	139.3	1.7	1.4	3.0	6.6
2002	1,119.8	15.9	16.0	14.7	23.7	188.6	2.4	2.3	3.0	6.1
2003	1,358.1	38.9	37.7	22.9	31.8	236.5	4.7	3.8	4.3	6.5
2004	1,641.8	80.8	43.6	40.0	40.0	339.4	6.1	6.0	6.0	8.9
2005	1,633.8	87.7	50.6	51.9	39.4	381.3	6.7	6.8	6.2	9.6
2006	1,933.4	99.2	62.7	92.3	63.0	480.2	6.5	7.6	6.5	8.4
2007	2,455.8	138.2	69.5	82.7	42.9	517.8	6.8	7.2	6.0	8.3
2008	2,660.7	166.1	98.9	67.5	46.4	539.7	8.0	7.1	6.5	8.0
2009	2,814.3	188.1	66.0	56.6	56.6	455.1	7.6	7.4	7.4	9.7
2010	3,758.1	199.1	68.9	74.0	74.0	429.8	6.3	6.4	6.4	16.0
2011	4,501.1	223.3	79.4	139.4	97.3	453.7	6.0	7.1	6.3	11.2
2012	5,933.9	123.0	130.9	121.9	246.6	615.3	3.8	3.7	5.4	4.7
2013	6,357.2	82.4	350.8	292.4	283.7	731.5	5.8	5.0	4.9	6.7
2014	6,822.7	110.7	293.5	204.1	204.1	965.9	5.0	3.9	3.9	6.2
2015	5,982.9	98.8	306.6	290.8	290.8	972.1	5.6	5.4	5.4	6.2
Average	3,351.2	110.9	112.6	104.0	104.8	496.4	5.5	5.4	5.4	7.5

Sources: Authors' calculations based on: ¹ annual reports of the auditor general on the public accounts of the general government sector (CAGD 2018), ² MOFA (2013; 2017), ³ annual reports of the auditor general on the public accounts of public boards and corporations (AG 2018), and ⁴ annual financial reports of the Cocobod (Ghana Cocoa Board 2018).

Notes: agPER = agricultural public expenditure review.

This note presented revised estimates for Ghana in accordance with the official AU guidance note for assessing GAE against the CAADP 10 percent target. It also proposed a revised formula for obtaining parallel estimates when expenditures of Cocobod and other market-based PBCs are included in the calculations, which was achieved by adding expenditures of all market-based PBCs to GTE in the denominator to make it comparable to adding expenditures of Cocobod to GAE in the numerator. Going by the official AU guidance note and correcting other errors, the 2001–2015 average share of GAE in GTE is 3.3 percent, compared with the 9.2 percent in the agPER studies. When the expenditures of Cocobod and other market-based PBCs are included in a manner that is parallel to the estimator in AU guidance note, the 2001–2015 average share is 5.4 percent, compared with the 7.5 percent in the agPER studies.

Because Cocobod is a PBC engaged in market production activities, like many others in Ghana (e.g., Bank of Ghana, NAFCO, Volta River Authority), its financial management and expenditure determination processes are different from those of government units that own or control them. Therefore, its expenditure performance analysis should be conducted separately so that specific efforts can be identified and targeted at improving development in the cocoa and noncocoa subsectors, respectively. As it was difficult to obtain expenditure data on PBCs for this assessment, further work is needed in this area to complete a comprehensive subsector analysis of expenses and returns on investment.

Without separating the expenditure analysis of government units from that of market-based PBCs, the analysis presented in the recent agPER studies tends to mask the relatively low government expenditure in the noncocoa subsectors, which account for the bulk of agricultural gross domestic product (GDP)—about 90 percent each year. In 2012–2015 for example, GAE was equivalent to only 4.1 percent of the noncocoa agricultural GDP, compared to Cocobod expenditure which was equivalent to 56 percent of the cocoa agricultural GDP. For that matter, since 2013, the share of GAE in GTE has been lower than 2 percent, pushing Ghana further away from achieving the CAADP 10 percent target. Analysis of the long-term trends, issues, and implications for boosting the quality and quantity of government spending in the sector, as well as of the sector’s productivity and growth, are discussed in an accompanying note.

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Annex table: General and administrative expenses of major market-based public boards, corporations, and other statutory institutions (PBCs) in Ghana (GH¢ million at 2001 constant prices), 2001–2015

Corporation	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
Ghana Cocoa Board (Cocobod)	8.55	14.68	22.87	40.04	51.95	92.25	82.68	67.48	56.55	74.04	139.40	121.95	292.44	204.07	290.83	103.99
Volta River Authority	58.25	86.90	117.59	178.83	220.07	300.99	300.04	281.26	229.33	198.27	169.86	139.42	102.97	284.84	290.60	197.28
Bank of Ghana	10.17	17.14	26.22	45.06	47.74	52.13	57.41	51.02	56.62	72.59	71.31	186.54	258.94	303.78	327.22	105.59
Electricity Company of Ghana ¹	22.06	27.13	30.27	37.96	38.62	48.84	54.14	41.83	32.87	37.21	53.92	75.04	106.80	106.14	106.85	54.65
National Health Insurance Authority	n.a.	n.a.	0.20	0.30	0.42	0.62	0.91	2.14	3.69	3.21	2.75	21.45	45.08	39.00	40.92	10.71
Bulk Oil Storage and Transportation Co. Ltd.	0.20	0.47	1.00	2.39	3.38	6.14	24.06	42.33	43.96	27.73	46.72	46.61	40.95	36.15	31.44	23.57
Social Security and National Insurance Trust	13.77	16.66	18.27	22.53	24.10	26.56	29.52	31.19	25.87	15.46	15.12	23.42	42.44	47.79	43.11	26.39
Ghana National Petroleum Corporation	0.17	0.31	0.54	1.04	1.39	1.49	2.13	2.89	3.30	5.98	11.23	18.12	25.50	34.93	20.55	8.64
Ghana Ports and Harbours Authority	1.20	1.64	2.02	2.81	3.82	5.36	7.56				7.22	14.55	19.49	18.21	18.19	8.54
National Communications Authority	0.47	0.71	0.98	1.51	1.87	2.22	2.20	2.69	3.39	4.53	7.17	14.54	10.20	11.59	11.71	5.05
Ghana Water Company Limited	24.18	25.73	24.83	26.94	27.66	29.27	31.24	31.69	33.10	42.76	53.04	55.15	54.41	51.47	47.65	37.27
Ghana Civil Aviation Authority	1.58	1.90	2.07	2.53	3.03	3.75	4.67	5.69	5.49	5.60	5.56	8.35	8.23	8.96	8.98	5.09
National Petroleum Authority	n.a.	n.a.	n.a.	n.a.	0.03	0.05	0.56	0.61	1.05	1.63	2.76	4.29	3.80	13.00	14.72	2.83
National Lottery Authority	7.27	10.00	12.49	17.52	9.15	2.77	3.34	40.52	5.30	5.72	6.99	7.84	12.70	9.98	10.15	10.78
Total	147.86	203.28	259.35	379.45	433.23	572.42	600.45	607.18	511.65	503.81	593.06	737.27	1,023.95	1,169.92	1,262.91	600.39
Total, excluding Cocobod	139.31	188.60	236.48	339.41	381.29	480.17	517.77	539.71	455.09	429.77	453.65	615.32	731.51	965.85	972.08	496.40

Source: Authors' calculations based on annual reports of the auditor general on the public accounts of public boards and corporations (AG 2018).

Notes: These PBCs operate on a market basis, do not receive government subvention, and financed their activities from the sale of their products and services at economically significant prices. Expenses include administration, finance costs, and interest payments, and exclude direct cost or transfers to consumers or beneficiaries. n.a. = not applicable, as the corporation was not established at the time. Cells highlighted in blue and orange originally were missing. Values in cells highlighted in blue are calculated using the average yearly growth rates based on the nonmissing observations. Those highlighted in orange are calculated using the average growth rate from the immediately preceding and succeeding nonmissing values. ¹ The Electricity Company of Ghana is now known as the Power Distribution Services Ghana.

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