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To cite this article: Justice Issah Musah-Surugu, Kwadwo Owusu, Paul William Kojo Yankson & Emmanuel Kofi Ayisi (2018) Mainstreaming climate change into local governance: financing and budgetary compliance in selected local governments in Ghana, *Development in Practice*, 28:1, 65-80, DOI: [10.1080/09614524.2018.1398717](https://doi.org/10.1080/09614524.2018.1398717)

To link to this article: <https://doi.org/10.1080/09614524.2018.1398717>



Published online: 12 Jan 2018.



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Mainstreaming climate change into local governance: financing and budgetary compliance in selected local governments in Ghana

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ABSTRACT

Through an interpretive research paradigm, we investigated the extent to which six local governments across three administrative regions of Ghana have complied with mandated climate change financing and budgeting guidelines. Five interesting findings emerged. First, there is enormous evidence of climate change budgeting compliance across all six local governments despite weak compliance incentives. Second, local governments that are most vulnerable to the impacts of climate change are more willing to comply and also allocate more resources for adaptation-related activities than those that are less vulnerable. Third, local governments that complied least are likely to take ad hoc adaptation actions which are often uncoordinated and poorly monitored. These local governments are least likely to attract auxiliary funds that could provide additional resources for adaptation financing. Lastly, the evidence of compliance is only quantitative, presented in various local governments' fiscal documents, with no qualitative or other relevant explanatory factors on the extent of impact on adaptation.

En nous référant à un modèle de recherche interprétatif, nous avons examiné dans quelle mesure six gouvernements locaux, dans trois régions administratives du Ghana, ont suivi les recommandations pour le financement et la budgétisation obligatoires des programmes portant sur les changements climatiques. Trois résultats intéressants ont émergé. Premièrement, il existe des preuves conséquentes d'une conformité à la « budgétisation changements climatiques » malgré le peu d'incitation à cette conformité. Deuxièmement, les gouvernements locaux les plus vulnérables aux changements climatiques sont les plus disposés à suivre les recommandations et à allouer plus de ressources à des activités d'adaptation aux changements, comparativement aux gouvernements les moins vulnérables. Troisièmement, les gouvernements locaux qui se conforment le moins aux recommandations sont les plus susceptibles de s'engager ad hoc dans des actions d'adaptation qui sont souvent non-coordonnées et mal contrôlées. Ces gouvernements locaux sont les moins susceptibles d'attirer des financements auxiliaires qui pourraient constituer des ressources supplémentaires pour le financement de l'adaptation. Enfin, les données sur la conformité sont seulement quantitatives, telles qu'elles apparaissent dans les documents fiscaux des gouvernements locaux, c'est-à-dire non accompagnées d'indications qualitatives ou explicatives pertinentes quant à l'étendue de l'impact de l'adaptation.

ARTICLE HISTORY

Received 8 October 2016
Accepted 8 August 2017

KEYWORDS

Climate Change; Adaptation;
Climate Budgeting; Climate
Financing; Compliance Africa

Partiendo de un paradigma de investigación interpretativo, exploramos el grado en que seis gobiernos de tres regiones administrativas de Ghana cumplieron con las directrices mandatadas en cuanto a aspectos financieros y presupuestales vinculados al cambio climático. En este sentido, surgieron cinco hallazgos interesantes. En primer lugar, a pesar de los escasos incentivos al respecto, existe abundante evidencia que indica que estos gobiernos locales están cumpliendo con el establecimiento de presupuestos pensados en función del cambio climático. En segundo lugar, los gobiernos locales más vulnerables a los impactos del cambio climático muestran mayor disposición a cumplir y asignan más recursos a actividades relacionadas con la adaptación que los menos vulnerables. Tercero, es más probable que los gobiernos en los cuales se detectó un cumplimiento menor de las directrices implementen acciones de adaptación ad hoc, a menudo descoordinadas y escasamente supervisadas. Cuarto, por consiguiente, resulta poco probable que estos gobiernos logren atraer fondos complementarios destinados a financiar acciones de adaptación. Finalmente, la evidencia encontrada en torno al cumplimiento solo aporta datos cuantitativos, que aparecen en los documentos fiscales de los gobiernos locales, pero no es posible determinar la existencia de factores cualitativos relevantes, o de otro tipo, que den cuenta del impacto logrado en términos de la adaptación.

Introduction

Globally, the extent to which national climate change adaptation policy is adopted and implemented by local government varies (Bulkeley and Kern 2006; Ruwanza and Shackleton 2016; Salon, Murphy, and Sciarra 2014). While some local governments are proactively mainstreaming climate change in local development plans, others have a “let’s wait and see” attitude. This syndrome is exemplified in countries such as the Netherlands, Canada, and United States, where research has shown that some local governments are barely responsive to climate change adaptation (Doelle and Belfry Munroe 2012; Hoppe, van den Berg, and Coenen 2014). Meanwhile, climate change adaptation needs occur at the local level. It is, therefore, expected that local governments would integrate climate change concerns in their service delivery (Amis 2005; Betsill 2000), as local governments have the ability to restructure climate change risk, mediate external interventions, organise incentives for adaptation, initiate and implement adaptation actions, and also serve as the first port of call for individuals or community groups seeking information on climate change impacts (Agrawal 2010; Castán Broto and Bulkeley 2013; Gentle et al. 2013). Similarly, local governments are expected to be able to respond favourably to local adaptation needs given their autonomy and proximity to the impacts of climate change, such as bushfires, drought, heatwaves, sea-level rises and floods. Indeed, the spatial and socio-political strength of local governments in micro-level climate change adaptation governance prompted the United Nations and the World Bank to recognise them as useful stakeholders in climate change management. For instance, the UN Centre for Human Settlement (UN-Habitat) indicated that local governments are an important medium for decentralising and devolving environmental planning and regulatory responsibilities (Richardson 2012).

Recognising the vital role of local governments in mainstreaming adaptation, the central government in Ghana has used a series of legislations and policy directives to direct local governments to integrate climate change issues into local level decision-making. For example, the Ghana Local Government Act 1993, ACT-462, the Functional Organisational Assessment Tool (FOAT), and local government composite budgeting system compel local governments to mainstream climate change-related issues across their development agenda. However, anecdotal evidence from both Ghana and other countries has demonstrated that even when climate change mainstreaming in local governance is

mandatory, local governments' compliance is not homogeneous (Castán Broto and Bulkeley 2013; Grimm et al. 2008; Measham et al. 2011; Wiener 2007). However, the reasons for the heterogeneous responses among local governments to higher statutes are barely known. Also, in the few cases when the directives are complied with, there is no evidence that there has been a significant effect on adaptation at the local level. It is, therefore, imperative to interrogate the issues given that institutional compliance influences local exposure to climate change impacts, adaptive capacity, adaptation options, and access to auxiliary local government funds (Bizikova, Robinson, and Cohen 2007). This study examines the extent to which local governments in Ghana are complying with Ghana's climate change policy directive, which requires that adaptation needs are budgeted for in every local governments' composite budget. The study aims to offer first-hand information to climate change policymakers, negotiators, and researchers on the nuances of climate change financing and budgeting at the sub-national level.

Literature review

Influence of policy compliance at the local level: theoretical standpoint

All 216 local governments in Ghana are required to use a composite budget approach to allocating financial resources to intended projects and programmes in an integrated manner. It is expected that districts comply with legal directives and integrate climate change issues into the composite budget. However, public policy literature has shown that the extent to which local agencies comply with national policy guidelines is often not equal (Hupe, Hill, and Nangia 2014; May and Winter 2009; Pressman and Wildavsky 1984; Puppim de Oliveira 2009; Sabatier and Mazmanian 1979). Both exogenous and endogenous factors on many occasions have prevented or at best, only partially managed to encourage local-level compliance with national policies. In most instances, national policies are postponed, compromised, or ignored by local governments (Stewart 1977). A dominant view on local governments' compliance to superior authority argues that variety of local factors (e.g. voter behaviour, local human resource capacity, local priorities, local fixers' behaviour, multiple organisational homes, framing of climate change issues relative to statute objective) influence the extent to which local government comply with national policy directives (Pressman and Wildavsky 1984; Sabatier and Mazmanian 1979; Zhan, Lo, and Tang 2014). Contrary to the widely held view that local conditions influence local agencies' compliance, Burby, May, and Paterson's study (1998) of local governments' choice on regulatory compliance found rather weak evidence that some local conditions may have influenced compliance. They argued that when a higher government strictly enforces the regulation, local conditions are less able to affect compliance. A related study by Berke and French (1994) on the effect of state planning mandates on local plan quality suggested that the design of the mandate itself can be important in determining local plan quality. Similarly, the legislative design of a particular statute can affect compliance. Ambiguity and complexity in statutes are also likely to create huge compliance obstacles (Hussey and Kay 2015; Sabatier and Mazmanian 1979; Zahariadis and Exadaktylos 2016).

Other research shows that the discretion of public bureaucrats also affects compliance with policy at the local level. The inability, willingness, and values of local practitioners to adopt a particular national policy are an important determinant of compliance (Lee and Koski 2012; Stewart 1977). Additionally, the complexity of policy goals and implementation cost affect compliance. Some policy goals are complex, obscure, and difficult to operationalise in local development plans. Where statutory objectives and deadlines are overly ambitious, they prevent policy adoption among local agencies (Hussey and Kay 2015). Similarly, compliance with the national policy directive is also dependent upon the extent to which the statute can be integrated within and across sectors, and with other sector policies (Puppim de Oliveira 2009). In summary, factors that influence policy compliance at the local level are numerous and mixed, depending on the policy goals, spatial impact and time of introduction, and its perceived socio-political implication. Given that human

institutions face bounded rationality problems, it is often difficult to design and implement a policy that would achieve absolute compliance. It is, therefore, relevant to examine which factors impact on local governments' compliance to climate change budgeting and financing protocols in Ghana, particularly as no study has evaluated the degree of compliance and its effect on adaptation since the directive for budgeting for climate change was issued in 2010.

The mandate for local governments to budget for climate change in Ghana

In Ghana, climate change adaptation is guided by several interrelated national policies and sector-wide strategies. Three significant policies are the Ghana National Climate Change Policy 2013 (GNCCP), the National Climate Change Adaptation Strategy 2011 (NCCAS), and the Ghana Shared Growth and Development Agenda 2014–17. Interestingly, none of these policies have explicitly mentioned sources of financing for climate change adaptation and amount to be devoted annually. Despite the lack of explicit mentions funding and mobilisation strategies in these statutes, both central and local government often mobilise funds from diverse sources to undertake climate change initiatives. The entire budgetary allocation for climate change-related interventions in Ghana, therefore, includes local funds emanating from Ghana's consolidated funds, local governments' internally generated funds, and donor funds, principally from multilateral and bilateral sources. A typical recent donor support for adaptation financing in Ghana is the 2015 US\$8 million Adaptation Fund for Ghana to finance its adaptation-related activities (GoG 2015).

Due to the omission of climate change financing in the various policy documents, central government directives to local governments in Ghana compel them to integrate adaptation concerns into local development plans through their composite budgeting system. Compliance with climate change financing and budgeting procedures are therefore defined here to mean making a financial appropriation for climate change-related adaptation projects and programmes in local governments' composite budget. The composite budget and Ghana's local government Functional Organisational Assessment Tool (FOAT) make provision for local governments to show evidence of climate change-related activities in their budget, with funds allocated to it. Section 92 (3) of the Local Government Act (Act 462) envisages the implementation of composite budget system under which the budgets of the departments in each district would be integrated into the local governments' central budget.

FOAT is a performance base grant system which is administered yearly. FOAT assessment rewards high-performing local governments with access to funds from the District Development Facility (DDF) using performance criteria, providing access to auxiliary/discretionary funds. FOAT is primarily meant to assess local governments based on their strict adherence and compliance with legal and regulatory controls which underpin the objectives and processes of local governments in Ghana. It also provides incentives for local governments to operate according to national policy directives while ensuring efficiency, accountability, and delivery of basic community services. Environmental factors, including climate change, are scored with a total of 8 points on the FOAT assessment metrics out of several variables on a scale of 100. Local governments that are unable to perform satisfactorily are not able to access the DDF. Both the FOAT system and existing local government monitoring system do not allow for easy transfer of resources from a planned item to one that was not budgeted for. The composite budgeting and the FOAT system, therefore, require that projects are properly planned, and resources are allocated to them before the beginning of the fiscal year. Compliance with climate change adaptation financing and budgeting, therefore, means that local governments have to plan for adaptation-related projects and programmes and allocate resources to them. Failure to adhere to such procedures will render the assembly weak in undertaking climate change-related adaptation projects. Local governments that do not comply with budgeting requirements for climate change are also likely to score low on the FOAT assessment, affecting their opportunity to access auxiliary funds such as the DDF.

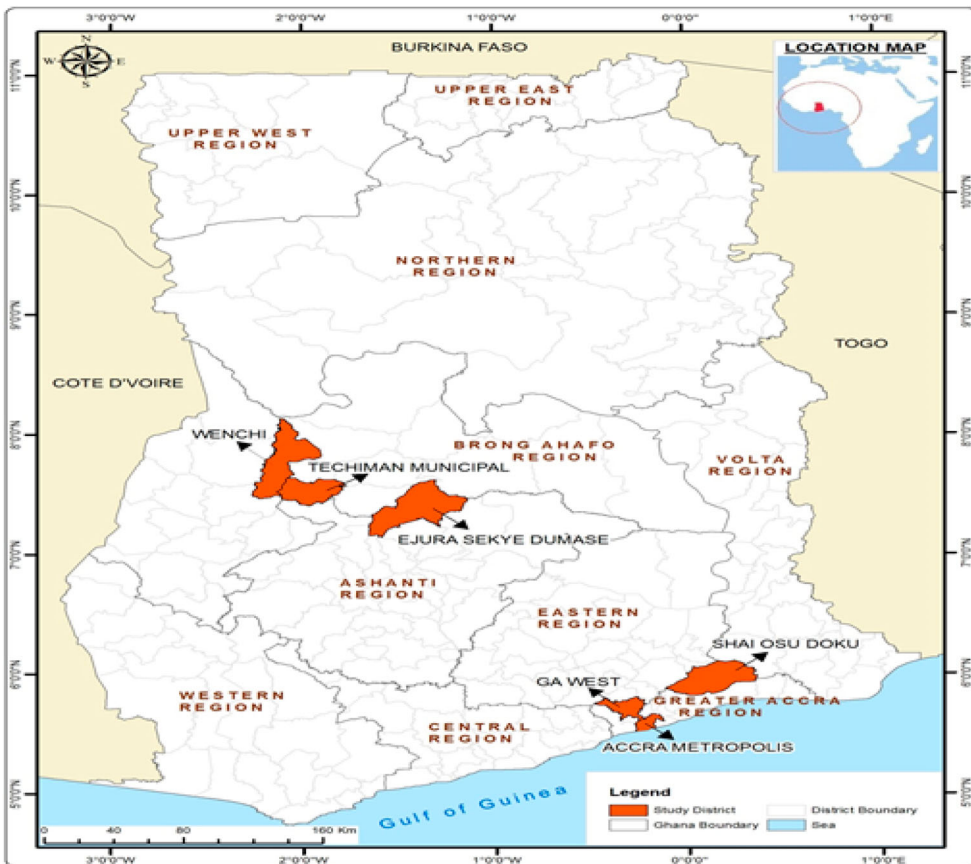


Figure 1. Map of Ghana showing the six local governments included in the study. Source: Authors, 2017.

Methodology

This study used a qualitative research approach with a case study design, throughout the data collection, analysis, and discussion phases. The primary data collection methods used were observations, documentary analysis, and semi-structured interviews. Qualitative research was considered appropriate as we aimed at conducting in-depth case analysis of selected local governments (Creswell 1998; Marshall 1996; Silverman 2005). The qualitative approach enabled us to gain a much deeper understanding of sub-national government compliance to higher statutes than if we had used a structured questionnaire survey. Two primary sources of information were utilised: first, secondary data derived from district assemblies' composite budgets, medium-term development plans, and other programme documents related to climate change financing and adaptation. These documentary materials were considered a good source of data for qualitative research (Freeman et al. 2007). The primary data were collected through in-depth interviews with key informants, an important data collection means in qualitative research (Creswell 2014).

Fieldwork took place between November 2015 and May 2016, lasting for six months. The fieldwork involved six local governments purposively selected across two Agro Ecological Zones of Ghana: Coastal Savannah and Transitional Zone (see Figure 1). Though the Guinea Savannah Ecological Zone has been described as the most vulnerable to climate change in Ghana, recent literature shows that the Coastal Savannah and Transitional Ecological Zone are also hard hit by climatic extremes such as sea level rises, inundation, extreme heat waves, high winds, acidification,

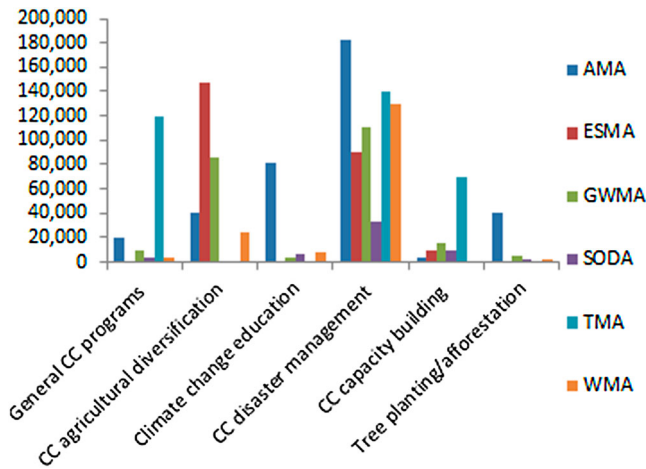


Figure 2. Evidence of climate change financing and budgetary compliance by local governments in 2014.

drought, poor rainfall distribution, poor agricultural performance, dwindling biodiversity, and so on (Codjoe, Owusu, and Burkett 2014; Dumenu and Obeng 2016; Taylor et al. 2017; Wrigley-Asante et al. 2017; Yaro 2013). The six selected local governments are the Accra Metropolitan Assembly (AMA), Ga West Municipal (GWMA), Shai Osudoku District (SODA), Ejura-Sekyeredumasi Municipal (ESMA), Wenchi Municipal (WMA), and Tachiman municipal (TMA) (Figure 1). Based on Salon, Murphy, and Sciara (2014) criteria for evaluating variations in local climate action we considered the location’s (proximity or remoteness), size (metropolitan, municipal, district), and human and material resources capacity (old or newly created) as important variables in the selection. Consequently, we selected local governments with different socio-economic and political characteristics, and differences in vulnerability to climate change. For example, the three local governments selected from Greater Accra region are very close to the seat of government, arguably with more sophisticated citizens, vibrant media, elite population, higher revenue, and higher population, than the three selected from other regions. Similarly, the three local governments from the Greater Accra region are less vulnerable to climate change impacts compared to the other regions (Dumenu and Obeng 2016; GoG 2015; Taylor et al. 2017; Wrigley-Asante et al. 2017). This apparent diversity across political and socio-economic characteristics, geographical location, population diversity, and growth rate should

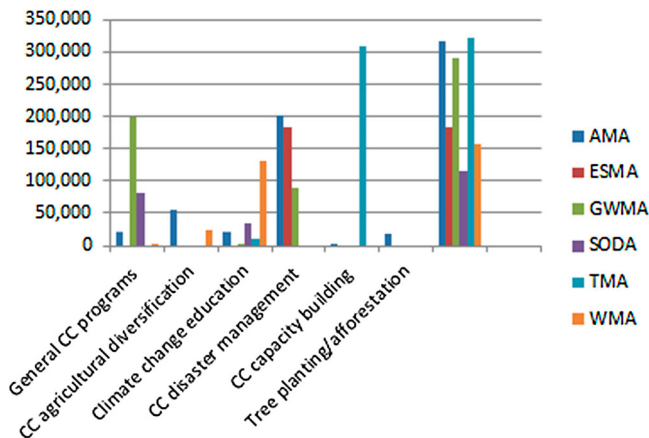


Figure 3. Evidence of climate change financing and budgetary compliance by local governments in 2015.

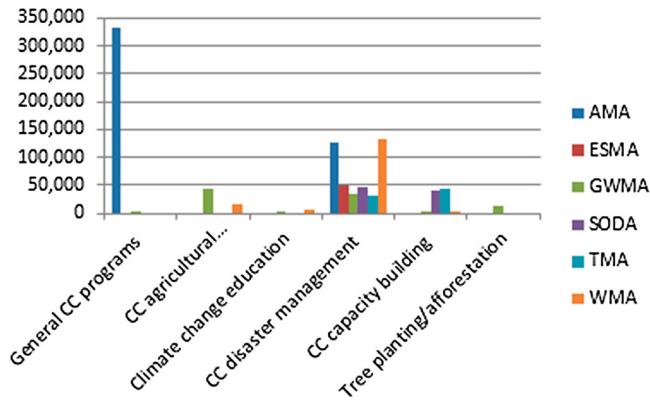


Figure 4. Evidence of climate change financing and budgetary compliance by local governments in 2016.

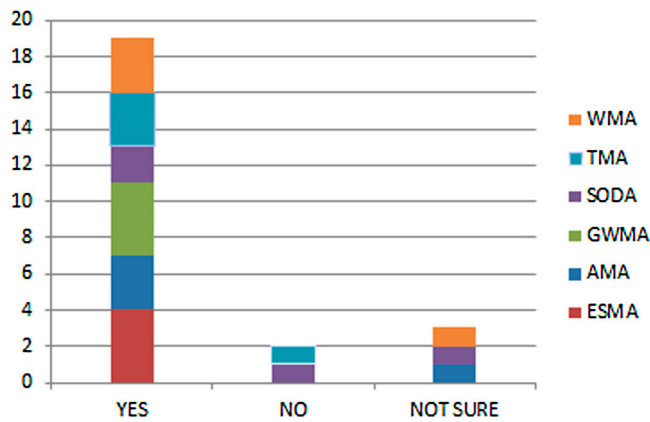


Figure 5. Respondents' views on compliance.

offer a clear picture on what condition and factors shape local governments' compliance to climate change budgeting (Salon et al. 2014).

Twenty-four key informants were selected across the following departments that are critical to local governments' climate change action and budgeting: Finance and Budgeting; National Disaster Management Organisation (NADMO); District Agricultural Units; District Management Information Unit; and District Planning Unit. Four respondents were selected from each of the six local governments and interviewed. In our opinion, a sample size of 24 respondents from six local governments provides rigorous scientific basis for a qualitative paper that seeks to undertake in-depth case analysis (see Creswell 2011; Guest et al. 2006). While this articles' findings can therefore not be generalised, they can be transposed onto areas that have similar characteristics. According to Creswell, the sample size within a qualitative research is typically "a few individuals or a few cases" (2011, 209). Data saturation can occur within the first 12 interviews in qualitative research, after which very few new phenomena are likely to emerge, hence, researchers can limit themselves to few cases (Guest et al. 2006). The interviews aimed to find out the implications of compliance to budgeting for climate change adaptation at the local level, and to also elicit qualitative evidence as to why compliance occurred or not. However, the extent of compliance to climate change budgeting was principally derived from quantitative evidence across three years (2014, 2015, and 2016), financial documents, and medium-term development frameworks accessed from the six selected local governments. Proof of compliance

is measured by seeing if climate change-related issues are captured in the financial documents, resources allocated to them, and expenditure been incurred.

The extent of compliance is presented with basic statistics (see [Figures 2–5](#)). While interview respondents were asked if they comply, this did not form the basis of our analysis and conclusion. Interviewees' views on the compliance of their institutions were used to support evidence of conformity adduced from the local governments' budgets and district development plans. Sampling of respondents was based on their position (either they work on local governments' budget or are involved in climate change activities at the local level). Interviews were audio-taped, later transcribed and read closely to elicit dominant and emerging themes. Transcribed data were triangulated with other documentary evidence on compliance and literature on local climate action. Documentary materials were also analysed through content or thematic appraisal using a checklist of stock and flow climate change investment decisions: phrases related to climate change, adaptation, local vulnerability, environmental management, among others; amount allocated to issues related to climate change management; and actual expenditure on climate change management. Content and thematic appraisals were done manually. These sources of information formed the basis of our discussions and conclusions.

Results

Extent of local governments' compliance with financing and budgeting

Ghana's Local Government Act 462, composite budgeting, and the FOAT system are the most important legislative instruments at the local level that are supposed to enforce the integration of climate change into local governance. However, compliance of local government to high statutes is often hindered by many internal and external constraints. Respondents were unanimous that the current legal framework for climate change budgeting was a significant step towards compliance enforcement, but not sufficient given the numerous internal challenges of local governments in Ghana. The respondents' accounts support those of Sabatier and Mazmanian (1979), who indicated that legal resources must contain motivations capable of enforcing compliances. One respondent intimated:

Yes, the rules or laws are necessary mechanisms for driving home climate change budgeting, but doesn't provide enough grounds to encourage all local governments to budget for climate change. There are numerous and equally important developmental needs against limited local government fiscal capacity. So the legal framework should have also indicated areas of funding and other resources which would have provided sufficient grounds for budgeting for climate change.

Alongside respondents' claims that the legal framework for compliance is copiously weak, we reviewed the local governments' budgets from 2014–16 to ascertain whether climate change issues have been budgeted for. The evidence of climate change-related activities and financial allocation (see [Figures 2–5](#)) confirms some level of compliance across all the local governments, despite

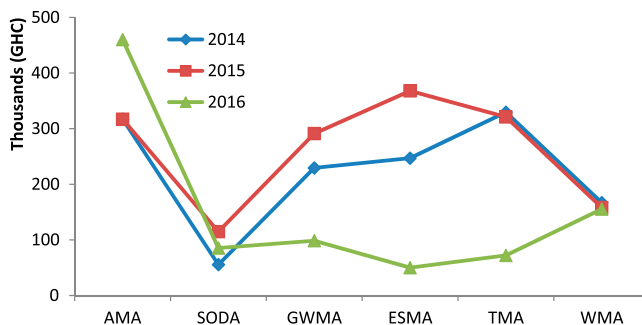


Figure 6. Trend of budgetary allocation for climate change adaptation over three-year period (2014–16).

the reported weak enforcement incentives. The local governments' various fiscal documents (budgets) have two major items that reflect compliance with climate change financing and budgeting – stand-alone (independent) projects that are meant for either adaptation or mitigation purposes, and infused projects that are pro-poor developmental projects oriented with a significant effect on adaptation. The stand-alone climate change-related activities include bushfire awareness creation, drought resistance farming practices support schemes, climate change awareness creation, capacity building, and afforestation. The infused projects include expansion of drains, tree planting after construction of new school buildings, the use of storm-resistant building products, and similar initiatives. Responses from most study participants confirmed the evidence found across the fiscal documents of the six local governments. For example, respondents emphasised that climate change has been part of their strategic plan for some time now. Overall, climate change education, disaster management and prevention, climate change capacity building, drought-appropriate farming methods, and afforestation activities were the primary climate change focus of the local governments.

The common difficulties predominantly cited by respondents included competing priorities, poor framing of climate change issues, low incentives to mainstream, non-existent local level data, non-cooperation of other local policy actors, and low level of climate change activism. We observed that the higher the hierarchy of a local government unit, the more the financial allocation that was made available for climate change-related activities. [Figures 2–5](#) show that Accra Metropolitan Area allocated more resources to climate change across the three-year period, while municipal assemblies also allocated more resources than district assemblies, which are the lowest in the hierarchy of local government units. Over the three-year period, while the Metropolitan District increased its allocation to climate change, the municipalities and district had a marginal reduction in their allocation (see [Figure 6](#)). It was also clear that more resources are allocated to climate change-related disaster management than any other adaptation-related intervention. It is not surprising, however, that more budgetary allocations were made to and expenditure incurred in the area of disaster management since climate extremes have occasioned many climate-related disasters like floods, drought, and fires in Ghana in the last decade (GoG [2015](#)).

Drivers of compliance and compliance variations

Although it was evident that the districts sampled complied with financing and budgeting requirements for climate change, the extent of compliance varied. This section presents the views of local government actors on why some local governments comply and others do not. The findings are presented along themes extracted from the interviews, budget documents, and literature.

The nature and strength of central government policy incentives

Respondents believed that compliance largely depends on central government incentives for budgeting for climate change. Perhaps, if budgeting for climate change received large financial resources from the central government, there wouldn't be reported cases of non-compliance, given the resource constraints of local governments (Yeboah-Assiamah [2016](#)). According to a majority of interviewees (21 out of 24), local governments' compliance to climate change budgeting would be a farce if there are no punitive measures for non-compliance. Unfortunately, the statutory framework calling for the integration of climate change in local governments' budgets conspicuously lacks the requisite "carrots" and "sticks" for enforcement. For example, although the Ghana Shared Growth and Development Agenda (GSGDA) II, the National Climate Change Policy, and the 3rd National Climate Change Communiqué of Ghana to the UNFCCC that apparently serve as the higher legal statute for enforcing climate change budgeting at the local level do not have punitive sanctioning regimes for non-compliance, neither do they have attractive reward mechanisms for compliance. The provisions for mainstreaming are largely discretionary and voluntary, allowing much flexibility for local governments. The study participants' views concur with previous studies which state that when central

government's policy directives do not contain the right incentives for checking non-compliance, local governments are likely to respond heterogeneously (Bulkeley and Betsill 2005).

Effective inter-departmental collaboration

Ideally, there should be healthy inter-departmental consultations at the district level to aid the collection and sharing of strategic information relevant for effective and efficient adaptation planning, and subsequent integration into district-wide composite budget. This, according to most local government planning officers (five out of six) would systematically ensure the prioritisation of climate change issues, prevent duplication of functions, and encourage resource efficiency. However, it appears that inherent bureaucratic competitions and institutional silos that have become apparent across bureaucracies globally work against healthy inter-departmental consultations in the local governments. This situation thus frustrates local governments' ability to comply with climate change budgeting, as argued by Critchley and Scott (2005). Respondents from district planning units were unanimous that rivalries among local governments' units and other deconcentrated departments operating at the district level are counter-productive to compliance. One respondent said:

Poor interdepartmental and cross-sectoral interaction among various agencies at the district level work against our ability to integrate climate change in our budget. (SODA interviewee)

Technical capacity and availability of knowledge on climate change

It was evident from respondents' views that the process of deciding what to adapt to, how to integrate climate change in decision making, which option is the best, and how much to budget for, require technical knowledge and skills. Most importantly, climate uncertainties and its related problems of attribution create contestations about what constitute adaptation needs and whether it merits policy attention in the face of scarce resources. Given these circumstances, local governments' willingness to integrate climate change into decision-making is dependent on availability of climate or environmental experts to adequately frame climate change as a development priority, providing justification for attention. Given the reported evidence of human resources constraints facing most local governments across the Global South, departments that are supposed to make a case for climate change integration in local governance are unable to do so, leading to non-compliance with budgeting protocols. One respondent's view was:

To be able to comply with climate change budgeting there is the need for sufficient technical skills, availability of data, and sufficient climate change impacts to be able to show evidence of adaptation needs and likely outcomes. Unfortunately, only a few districts appear to have some individuals with expertise in environmental related issues. (ESMA interviewee)

Respondents agreed on the need for improved technical capacity to enhance the integration of climate change into local governments' budgeting in Ghana. This finding is consistent with Ryan (2015), who concluded that limited human resources capacity of local governments affects its adoption of climate change policy. It is also consistent with the general lack of climate expertise across Africa identified by Washington et al. (2006).

The existence and priorities of civic groups

The study further noted that the institutional environment within which a particular public policy is implemented has implications for compliance. In an environment where interest groups about specific issues (e.g. environmental NGOs) are present and active, they are able to bridge policy-action gaps by encouraging state institutions to comply with formal regulations (Wilson 2003). It was expected that local governments that have active climate change NGOs are more likely to comply with climate change budgeting requirements since such NGOs tend to advocate for state-sponsored adaptation management, sensitise local policy actors on adaptation needs, and educate local people on the impact of climate change and the need for planned adaptation (Lind and

Cappon 2001). It was evident that in districts where NGOs have been very active on climate change issues most bureaucrats were conversant with current adaptation discourses. In such districts interviewees explained that NGOs provide them with assistance in some areas of adaptation planning, execution, and evaluation of outcomes through capacity building. Such local governments were able to develop appropriate projects and budgets.

Commitment of leadership to issues of climate change adaptation

It has also been established that leadership has a tremendous influence on organisational behaviour towards higher legal instruments across various disciplines (Kim 2014; Lee and Koski 2012; Mahembe and Engelbrecht 2014). The study respondents' views were not different from the long-established treatise on leadership and what an organisation does, will do, or not do. According to those interviewed, some chief executive officers (political heads of local governments) and other administrative leaders (local governments' bureaucrats) have insisted that climate change-related issues are given the needed attention in their fiscal plans leading to compliance. Conversely, others also acknowledged that the failure to adequately budget for certain climate change matters ostensibly emanated from local governments' leaders' political perspective on adaptation-related issues. Respondents argued that when adaptation interventions are assumed not to have "political gains", local politicians that wield extensive powers over local fiscal policies would frustrate such items been considered in the composite budget. The study participants' views are consistent with the extensive leadership powers of mayors to champion climate change action for cities, as argued in previous studies (Lee and Koski 2012; Sharp, Daley, and Lunch 2011). Lee and Koski (2012) argued that mayors can use their influential powers to localise global problems. Given the fact that municipal policymakers are affected by its political economy (public opinion, voter behaviour, and the expected cost of the policy), climate change adaptation issues would be subject to political economy scrutiny and consideration. One respondent remarked:

When our political actors who are power brokers and fixers do perceive climate change issues as a favourable electoral item, they forthrightly sabotage any attempt to budget for it. (AMA interviewee)

Another respondent remarked:

Some of our leaders do not even see the need for climate change adaptation and think that other issues are more pressing. Unlike climate change projects that take a long time for the benefits to be seen, some of the leaders would rather go for symbolic political projects that are capable of creating immediate political benefits. (TMA interviewee)

The extent of local vulnerability to climate change

In Ghana, local governments' economies vary and are therefore likely to have an extremely mixed sensitivity to climate change. For example, Ghana's third national communication to the UNFCCC explicitly indicates that local governments in the transitional and northern ecological zones are more vulnerable than the others. Accordingly, it is expected that local governments that in these areas would be more prepared to integrate climate change into local development plans. The findings support this, suggesting that in vulnerable areas where climate change has a profound impact, particularly on local people's livelihood, adaptation is considered a "need-based" issue. In such districts, climate change is mainstreamed into the district's budget, funds allocated, and specific programmes carried out consistently. For example, the Ejura-Sekyeredumasi, Wenchi, and Tachiman districts (all within the transitional ecological zone of Ghana), which are seen as vulnerable areas (3rd Communication to the UNFCCC; Wrigley-Asante et al. 2017), consistently provided resources for climate change awareness creation, drought-resistant farming, and bush fire fighting training in all three fiscal year budgets that were reviewed. These districts are predominantly rain-fed farming communities, often affected by long droughts and bush fires, and as such exposed to the impacts of climate change.

Effects of climate change-financing and budgeting compliance on adaptation

The study also attempted to tease out local governments' bureaucrats and other relevant actors' perception about the developmental effects of budgeting for climate change. This is relevant because actors' perceived effect of budgeting might influence their behaviours towards adaptation mainstreaming in governance. Common impacts of climate change cited by respondents include displacement of residents through floods and storm, low farm yields, food insecurity, fresh water scarcity, and property destruction through fire and torrential rains. The data from Wenchi, Techiman, and Ejura local governments demonstrated that budgeting for climate change made it easier to allocate and access funds for alternative livelihood-based programmes which would have otherwise not been possible. Some of the perceived specific adaptation benefits that accrued from climate change budgeting are discussed below. The responses are grouped under themes extracted from triangulated field data.

Efficient resource allocation and utilisation based on needs and priority

Evidence from the local governments' budget and expenditure documents and performance reports clearly shows that resources are only allocated to climate-related issues if they are considered priority developmental needs of a particular local government. It was clear that climate change-earmarked funds were specifically meant for need-based interventions. A respondent stated:

It is evident from our last three years budget that some funds were allocated to climate change activities, which could help reduce local vulnerability to flood, drought, water stress, and bush fires. In the past, clear objectives were not set and hence we were unable to measure our performance and determine where resources must be allocated to in subsequent years. But with the composite budget which requires that we plan for climate change, we are able to set objectives and allocate resources to them based on priority. (GWMA interviewee)

Poverty reduction

It was also evident that compliance with climate change budgeting had created some new jobs for local people. In some districts, climate change funds had been allocated for mango plantations and afforestation, which had created job opportunities for local people. It was also noted that there had been improved yields in areas where farmers had received climate change-based education on good farming practice and the use of drought-resistant crops. Respondents intimated that when funds were appropriately allocated to areas where climate change affects local livelihood, there was the possibility of reducing poverty. One respondent expressed his view that:

When local people are very poor, they become vulnerable to environmental shocks. In our attempt to build sustainable resilience among rural folks, we create job opportunities through climate change budgetary allocation at the local level. Such job opportunities help reduce poverty among local people to some extent. Remember that one climate change project could create multiple effects on other economic opportunities. (WMA interviewee)

A planning officer from the Accra Metropolitan Assembly noted that some climate change-related funds are accessed easily when they are budgeted for. He explained that existing external climate change funds that local governments can access require that climate change intervention help improve rural poverty through job creation.

Potential improvement in household's adaptive capacity

A vital element in climate change adaptation literature is household's resilience or adaptive capacity. Many factors influence households' adaptive capacity, including levels of climate change awareness. Empirical data from this study suggest that local governments that comply with budgetary procedures can influence poor households' risk perception, attitude towards adaptation, and adaptation decisions, given that the budget provides a fund for undertaking climate education. Budgetary allocation helps mobilise communities and educate them on how to identify climatic risks and insulate themselves from them. A respondent explained:

"The lack of information by the local people and their perception of risk and risk management make them vulnerable. When they are well educated, they are better positioned to handle climatic shocks." (WMA interviewee)

Another respondent intimated that:

Climate change budgeting and effective compliance provide a clear adaptation direction, capacity building activities, vulnerability assessments and appropriate adaptation options at the community level. (AMA interviewee)

Potential to reduce in maladaptation (no-regret adaptation)

It was observed that unplanned adaptation leads to high private cost with limited marginal social benefits. Those local government that are able to budget appropriately for climate change are able to undertake comprehensive vulnerability assessment and implement appropriate adaptation strategy preventing possible maladaptation (high-regrets).

Conclusions and recommendations

This article aimed to examine: (1) the extent to which selected local governments in Ghana had complied with climate change budgeting protocols; (2) the perceived factors that influence compliance; and (3) the perceived effect of climate change budgeting compliance on adaptation. The data show that climate change-related issues are gradually becoming standard budgetary items that are critical in developing the fiscal framework of local governments. This evidence supports the wide concern that climate change impacts are unequivocal and widespread, and hence driving most development initiatives (Owusu, Obour, and Asare-Baffour 2015).

The study found that, first, respondents widely agree that local level exposure to the impacts of climate change has a considerable influence on their willingness to comply with statutory directives. As a result, we predict that local governments that are extremely vulnerable to the impacts of climate change are likely to allocate more resources for adaptation-related activities than those that are less vulnerable. Second, local governments that complied least are likely to take ad hoc adaptation actions which are often uncoordinated and poorly monitored. Third, given that local governments' access to auxiliary funds such as the DDF is partly dependent upon budgetary conformity with performance standard, of which climate change mainstreaming remains a vital component, we can hypothesise that local governments that complied least are less likely to be able to attract auxiliary local government funds which are critical for adaptation financing. Local governments in Ghana are saddled with resource constraints, so any additional funds are critical for them to respond to the incremental cost and investment needs of climate change. Fourth, the evidence of compliance is only quantitative, as presented in various local government fiscal documents, with no qualitative or other relevant explanatory factors on the extent of impact on adaptation. Lastly, despite weak regulatory incentives for compliance there is enormous evidence that the local governments in the study budget for adaptation-related activities.

The existing legal structures compelling local governments to integrate climate change into local governance are limited, and lack the requisite bite. The most important incentive provided by these legal frameworks for compliance is the opportunity to access auxiliary local government funds (DDF). However, this fund is mostly unattractive to local governments in Ghana since a large proportion of local governments' funds come from the District Assembly Common Fund, which is independent of local governments, whether compliant or not. It is, therefore, easier for local governments in Ghana to neglect climate change interventions in pursuit of other developmental needs. This suggests that the social benefits related to budgeting for climate change could be the significant reasons for compliance.

Given the evidence of compliance in the face of weak enforcement regime, legal frameworks are a necessary condition, but not sufficient for compliance. We therefore recommend that in areas where statutes remain the only effective way to compel local governments to incorporate climate change

into local governance, a sanctions system should be designed to prevent non-compliance. However, such sanctions should not aim at denying local governments from accessing existing auxiliary funds or any other economic incentives (like the DDF), given the existing report cases of lack of resources for local governments in the face of many development needs. Furthermore, efforts could be made to increase the willingness of local governments to comply with budgeting expectations. Such steps could include framing climate change as a priority issue at the national level, creating a deeper awareness of the impact of among local government officials, and showing greater political commitment to climate change at the national level. Local government leaders are likely to mimic what central government is pursuing given the top-down development planning structure, as well as the horizontal local government political accountability system in Ghana. This recommendation is in line with the findings of Blanco et al. (2009) that local governments are expected to respond more positively to climate change and comply with policy directives if the national government demonstrates stronger leadership.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by BSU II initiative Building Stronger Universities project [Grant Number UG-ORID/BSU/II/WP2/2015-2016/002].

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