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## **Critical Reflections on Local Level Climate Compatible Development Policies/Practice from Ghana**

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### **Abstract**

*The concept of Climate Compatible Development (CCD) emerged in recent times as an approach to advance climate change mitigation and adaptation actions while addressing tensions between development and climate change interventions. It is argued that CCD gives priority to development, yet provides the convergence to account for climate change mitigation and adaptation. However, evidence on the extent to which CCD is recognised and consciously practised by local planning and implementing authorities (key sub-national actors) in developing countries remains scant and fragmented. In this paper, we use systematic review and content analysis of local government development plans (policies) and programmes supported with in-depth multi-stakeholder interviews, to reflect on stakeholder awareness, practice, challenges and prospects of CCD among local government institutions from Ghana. Although Ghana's local planning and implementing authorities, the Metropolitan Municipal District Assemblies (MMDAs) by default, practice CCD, recognition of CCD in Ghana is still low among the surveyed MMDAs. We reaffirm calls for multi-stakeholder approach to the promotion of CCD and value the need for climate focal staff in local government institutions who can coordinate climate change issues in all matters of development including climate funding.*

### **Key words:**

*Climate change, climate compatible development, local government, climate policy and practice, non-state actors, reflection, mainstream, integration, sustainable development, Ghana, Africa*

## 1. INTRODUCTION

It is generally recognised in the Climate Change scholarship that climate change is a threat to sustainable development with the two having dual but multiple interlinkages (Intergovernmental Panel on Climate Change (African Development Bank et al., 2015; IPCC, 2014, 2007; United Nations, 2009; Beg et al. 2002). In Africa and other natural resource-dependent economies, climate change effects (flooding, droughts, extreme heat, change in rainfall etc.) are projected to compound poverty and undermine key natural and human living conditions underlying socio-economic development (African Development Bank et al., 2003; Collier et al. 2008). On the reverse, implementation of development initiatives may influence Green House Gas (GHG) emissions causing climate change and vulnerability (Beg et al. 2002). However, there is a high confidence that integrated climate response options linking mitigation and adaptation to the pursuit of socio-economic objectives can be implemented to address trade-offs and promote synergies between climate intervention and development, in a sustainable manner (IPCC, 2014).

We reflect on one such integrated approach proposed 'Climate Compatible Development' (CCD), bringing together development/poverty reduction, adaptation and mitigation in a manner that consciously promotes a 'triple win'. Proponents of the CCD concept argue that application of the concept has the potential to build institutional capacities, promote stakeholder collaboration and coordination of development efforts, and ultimately, ensure the realisation of climate change mitigation-adaptation-development goals sustainably (see Mitchell and Maxwell, 2010). However, evidence on awareness, practice, challenges and prospects of CCD as well as the realisation of CCD goals remains scant (see Stringer et al. 2014; Anton et al. 2014; Dovie et al. 2014) and fragmented. The lack of considerable and systematic evidence may hinder uptake of the CCD concept and the realisation of its goals. has the

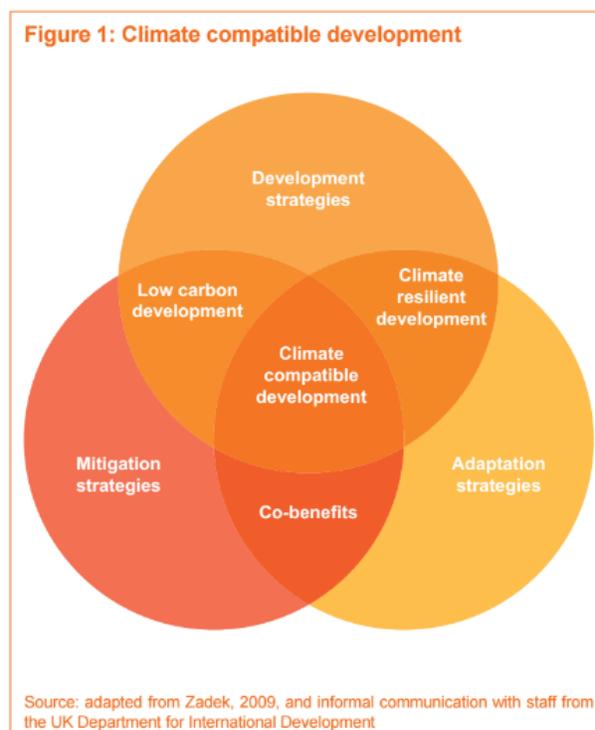
Following this, we aim to contribute to the CCD debate by providing answers to the following questions: can local governments/planning authorities, especially in Africa, achieve the goal of reducing poverty, maintaining low emissions and effectively adapt to climate change as envisaged under the CCD concept? What is the current level of CCD awareness among stakeholders at the local level? And what opportunities and prospects exist regarding the implementation of the CCD concept?

We argue that the recognition and practice of the CCD remains somewhat poor among MMDAs studied. Also, the key challenge responsible for low recognition and uptake of CCD is institutional failing. The advent of CCD should not remain a theoretical concept at the mercy of academic debates only. Not also should it hang as a top-level policy prerogative. CDD is not an entirely new concept, and it is

important local governments appreciate its value and develop capacity to consciously promote it. In any case, its (CCD) several dimensions, we believe, are here to stretch and strengthen local government institutions.

## 2. CONCEPTUAL REVIEW

'Climate Compatible Development' (Figure 1) refers to development that lessens the negative impacts caused by climate change, while maximising the numerous human development opportunities presented by a low emission, more resilient, future (Mitchell and Maxwell, 2010). This concept has emerged as an approach to tackling the weaknesses and loopholes of more "narrowed" approaches of development and tackling climate change stresses and impacts e.g. market-based methods that seek to internalise environmental externalities as well as more broad and vague approaches such as the concept of sustainable development. Stringer et al. (2013) show how climate change and development are intricately linked and thus, any development approach that focuses on one aspect overlooks the potential damages that can be caused by development efforts.



The CCD concept offers the means to integrate climate change mitigation, adaptation and development in a manner that allows individuals, communities and nations to access resources and utilise them to improve human wellbeing, economic growth, institutional development, while responding effectively to climate change issues. The concept requires a deliberate attempt to mainstream climate change into development policy and planning (Akhtar-Schuster et al., 2011) and building the capacity of institutions to help in effective resource allocation, distribution, and ensuring efficiency and equity.

The approach recommended by proponents of CCD is one that encourages cross-sectoral, cross-scale, cross-level and multiple stakeholder efforts to effectively coordinate development efforts in various projects, programmes, plans and policies at various levels and among a wide range of stakeholders (Bryan et al. 2010; Stringer et al. 2012a; Stringer et al. 2012b) as this allows for harnessing synergies and reducing trade-offs (Forsyth 2007). This offers an opportunity for various actors to share resources, knowledge and expertise towards achieving common goals (Andonova et al. 2009) and avoiding duplication of efforts and counterproductive impacts of disjointed projects and policies.

While this concept appears to address the gaps of other methods, its implementation appears to be challenging particularly regarding issues of collaboration and coordination, as well as institutional capacity to deliver. This is particularly true in developing countries especially in Africa, where many institutions lack the capacity to deliver such comprehensive policies due to human resource gaps, financial challenges, technological challenges, among others. Also, lack of information hinders institutional efforts to access data on which actors are taking which development efforts, and in which areas and locations (Stringer et al., 2013).

### **3. LOCAL GOVERNMENT ROLE IN CLIMATE MAINSTREAMING FOR SUSTAINABLE DEVELOPMENT**

Growing scholarly and practical attention has been directed at policies and programmes of sub-national actors; cities, metropolitan, districts and local levels of government (Linstroth & Bell, 2007; Lundqvist & Biel, 2007) [E1] in recognition of the fact that the implementation of both the Nationally Determined Contributions (NDCs) to the Paris Climate Agreement and the Sustainable Development Goals will more likely demand collective local interventions. Understandably, local government policies and programmes are not only required to reduce poverty, it is already a necessity that they pursue co-benefits in mitigating and/or helping populations adapt to the impacts of climate change (e.g. flooding, extreme heat, drought/dryness, change in rainfall pattern etc.).

Through range of functions such as provision of physical infrastructure and services and disaster prevention and response planning, local governments build resilience in reducing climate change vulnerabilities (Agrawal et al. 2009), However, within CCD, the implications are that not only will local governments' instrumental role in building resilience need to significantly improve, such must be carried out mindful of livelihood benefits associated with creation of the enabling environment for jobs, high income, shelter and food security while acting to reduce sources of emissions contributing to climate change – aiming at 'triple win'. Climate change mainstreaming for a

sustainable development will therefore require a concerted implementation of localised medium to long-term adaptation strategies and 'low carbon' development plans that address the issue of poverty and African development potential, as argued in The African Local Government Climate Change Declaration. Local governments will therefore have to further subject other existing approaches (Low Carbon Growth/Emission Development, Climate Resilient Growth/Development, Adaptation Pathways) aim at mainstreaming climate change into the development process in the pursuit of triple win (Maxwell, 2010).

The background information raises interesting questions such as: can local governments/planning authorities, especially in Africa, achieve the goal of reducing poverty, maintaining low emissions and effectively adapt to climate change as envisaged under the CCD concept? What is the current level of CCD awareness among stakeholders at the local level? And what opportunities and prospects exist regarding the implementation of the CCD concept?

#### **4. STUDY AREA**

The study focuses on local governments (Metropolitan Municipal District Assemblies, MMDAs) in Ghana. Ghana's key economic sectors (agriculture, forestry etc.) have been observed to be highly susceptible to climate change, and about 80% disasters happening in Ghana are climate-related, yet Ghana has less capacity to adapt and mitigate climate change (Government of Ghana, 2013). Local level CCD is well grounded in Ghana's climate change policy vision – "to ensure a climate resilient and climate-compatible economy while achieving sustainable development through equitable low carbon economic growth for Ghana" (Government of Ghana, 2013: 2).

Ghana provides a very good context for understanding CCD planning and practice at the local level given its long practice of decentralisation (*about 3 decades*) hence, enabling local planning and plan implementation to have seen great improvement since planning authorities learn from experiences over the years. Also, Planning authorities have received capacity building training from the central Government and international organisations interested in good governance e.g. the World Bank. Additionally, Ghana has a very complex and varied climate landscape which presents different climate change challenges to various regions, and thus different levels and strategies to develop, mitigate and to adapt to climate change impacts at various scales and levels. The country has also implemented various strategies (e.g. REDD +) aimed at simultaneously addressing climate change problems and reducing poverty among the populace (Government of Ghana, 2013).

The selection of the 8 districts was influenced by the decision to ensure: a good geographical spread across various climatic regions in the country, districts with different institutional capacity (in terms of material resources, technical capacity,

financial independence, technological advancement, etc.), and different climate impacts. Some of these districts are in tropical climate regions whilst others in forested climate regions thus giving these districts similar and different climate problems and different capacities and strategies to address development and climate change issues. For example, Keta Municipality and Ada East Districts are mainly affected by rising sea levels and coastal erosion while Bawku, Yendi Municipalities and Nanumba North districts have high poverty incidences and single raining season a year being exacerbated by climate change.

Ghana (and the selected districts) offer an interesting focus in terms of governance or institutional capacity to deal with development and climate change problems as well as diversity of development problems and climate change impacts. By understanding the level of CCD awareness and practice in these areas, we will be able to point out similarities and differences regarding key challenges and opportunities that could be shared through partnership and other collaborative means to help these districts tackle their development and climate change issues. The lessons learnt may apply to the context of other districts and possibly beyond the Ghanaian context.

## **5. MATERIALS AND METHODS**

This paper combined multi-stakeholder interview of individuals from various offices (Table 1) and desk review of local development plans and relevant national documents<sup>1</sup> to reflect on the practice, challenges and prospects of climate compatible development at the sub-national level. An in-depth interview was conducted with eight randomly selected Metropolitan Municipal District Development Planning Officers (MMDPO) across the country regarding their awareness of climate change, climate compatible development, its mainstreaming as well as challenges and prospects it presents to the districts. The process also included formal and informal interview with key officers from the National Development Planning Commission (NDPC), Environmental Protection Agency (EPA) and an Environmental Non-Governmental Organisation based on their important roles in shaping and information on environment, climate change, and local development.

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<sup>1</sup> The relevant national documents include NDPC guidelines for the preparation of District MTDPs, Functional Organisation Assessment Tool (FOAT) the Strategic Environmental Assessment tool and Ghana Climate Change Policy, National Climate Change Adaptation Strategy, Ghana's Low Carbon Development Strategy and the National Climate Change Masters Plan and the National Development Policy Framework, The Ghana Shared Growth and Development Agenda II (GSGDA II) and Guidelines for Mainstreaming Climate Change and Disaster Risk Reduction into MTDPs

Table 1: List of Persons/Institutions Interviewed

| <b>List of persons/Institutions surveyed/interviewed</b> | <b>Number of Officers</b> |
|--|---------------------------|
| MMDAs  | 08                        |
| Retired Municipal Development Planning Officer           | 1                         |
| Environmental Protection Agency (EPA)                    | 1                         |
| National Development Planning Commission (NDPC)          | 1                         |
| Research Institution                                     | 1                         |
| Environmental NGO  | 1                         |

The EPA holds a critical influence on a successful local level climate action. It serves as the national climate change focal institution, leading the development of Ghana's National Climate Change Policy, Strategies and Programmes, Ghana's Nationally Determined Contribution (GH-NDCs) implementation plan and institutional set up and at the same time, the leading public body for protecting and improving Ghana's environment all of which require local participation and implementation. The NDPC is responsible for the provision of guidelines for the preparation of development plans in Ghana, as well as national policy directions, such as in the Ghana Shared Growth and Development Agenda (GSGDA I and II) development policy framework. Both institutions work to ensure mainstreaming of environmental, climate change and sustainable development goals into development plans. Both have, in the past, provided a capacity training for MMDAs on climate change mainstreaming and localisation of sustainable development goals.

## **Desk Review**

The desk review involved systematic review targeted at the 216 MTDPs of MMDAs in Ghana. Only 95 out of the 216 MTDPs (about 44%) are available for downloads from the NDPC website where all 216 MTDPs are required to be uploaded since 2014.

**Table 2: Inclusion and Exclusion criteria for CCD project identification**

| <b>Inclusion criteria</b>   | <b>Exclusion criteria</b>  |
|---|--|
| 2014-2017 MTDPs available for downloads                               | 2014-2017 MTDPs not available for downloads                                  |
| MTDP recognised climate change, climate variability or global warming | MTDP does not recognise Climate Change climate variability or global warming |
| MTDP has climate change intervention                                  | MTDP has no climate change intervention                                      |
| MTDP recognise CCD and/or has a potential CCD project                 | MTDP does not recognise CCD and does not have any potential CCD project      |

The systematic review was conducted in three broad stages using the exclusion and inclusion criteria specified in Table 2. The first stage is to identify MMDAs who recognise climate change in their MTDPs. This stage produced 88 MTDPs, showing 7 did not mention or refer to climate change/variability and/or global warming in their MTDPs. The second stage is in two-tier and focused on identifying among the 88 MMDAs, 1) MMDAs that have evidence of climate change mainstreaming and 2) MMDAs that recognised CCD in their MTDPs. This produced 81 MTDPs with climate change interventions (using search terms: climate change or global warming, climate variability, drought/dryness, change in rainfall, heat, temperature, flood, sea level rise, coastal erosion to identify project/strategies/objectives that respond to them).

There was no result for those mentioning or explicitly referring to CCD. The third stage focused on assessing the potential of climate interventions in the 81 MTDPs to contribute to CCD, since no MMDA was found to have explicitly mentioned CCD. This step produced about 36 MTDPs with potential CCD projects. We term this default or unconscious CCD practice. This represent the third stage of the systematic review. This third stage also included general grouping of the climate interventions in the 81 MTDPs into three other set of categories; 1) Adaptation + Development Climate Resilience, 2) those that can achieve adaptation and mitigation co-benefits and 3) those that can contribute to 'low emissions' development (mitigation + development) to appreciate the general trend in climate interventions at the local level. The four categories form the themes based on which results were analysed (see Table 4).

**Table 3. Thematic approach to the results of the systematic review**

| MMDAs | Number of Climate Interventions |  |                                     |  |
|-------|---------------------------------|--|-------------------------------------|--|
|       | Default CCD                     | Adaptation + Development Climate Resilient | Adaptation + Mitigation Co-benefits | Mitigation and Development benefits; Low emission growth |
|       |                                 |  |                                     |  |

NB. Colour notations were deployed to categorise the climate related interventions as seen in appendix 1.

## 6. RECOGNITION AND PRACTICE OF LOCAL LEVEL CCD

Awareness leading to an in-depth understanding of the entrenched and latest climate-development discourse and approaches will produce a knowledge-based capacity fundamental for appreciation of urgency for and guidance to concerted efforts at climate change and CCD. The knowledge-based capacity is however, an issue in contention in many developing countries including Sub-Sahara Africa and Ghana. We observed that even though CCD is practically not new, at least from the review of the MTDPs, 50% of the surveyed Local Development Planning Officers claimed not to be aware of it. Only about 50% also indicated they mainstreamed climate change.

However, the results of the content analysis (Table 5) of the most recent MTDPs - 2014-2017 MTDPs - do not entirely reflect the survey finding. None of the MTDPs explicitly recognised or refer to CCD, although about 92.7% recognised climate change as a threat to development and about 85.3% have evidence of climate mainstreaming.

**Table 4. Results of MTDP Content Analysis**

| The Themes   | 95 MMDAs                |       |    |
|--|-------------------------|-------|----|
|  | %                       | No.   |    |
| Recognised Climate Change                            | 92.7%                   | 88    |    |
| Evidence of climate change mainstreaming/integration | 85.3%                   | 81    |    |
| Reflect CCD  | Explicit/Direct CCD     | 00%   | 00 |
|  | Default/Unconscious CCD | 42.1% | 40 |

A significant finding, however, is that about 42% of the MTDPs have interventions of CCD potential, showing to be Default or Unconscious CCD practice. Examples are dominated by tree planting/plantation, afforestation, reforestation, agroforestry

programmes and mangrove development and protection policies or by-laws (Komenda-Edina-Eguafo-Abrem Municipal Assembly, 2014; Mfantseman Municipal Assembly, 2014; Twifo-Atti-Morkwa District Assembly 2014; Upper Denkyira West District Assembly 2014; Nandom District Assembly 2014; Agotime-Ziope District Assembly 2014; Ahafo Ano South District Assembly 2014). Others include the labour intensive public works climate change programme under Ghana Social Organisation Project (GSOP) (Nadowli-Kaleo District Assembly, 2014) and the implementation of national buffer zone policies for rivers and protected areas (Daffiama Bussie Issa District Assembly, 2014).

The Asikuma-Oboden-Brakwa District Assembly (2014) in the Central Region of Ghana for instance, aim to increase Afforestation programme from 40% to 80% by 2017 and plant mangrove belts to provide flood protection. Jomoro District in Western Region planned to plant mangrove trees in wetlands (Jomoro District Assembly 2014). Ada West District in Greater Accra Region also planned to initiate bye-laws to protect mangroves in the Lagoons while Sekondi-Takoradi Metropolitan Assembly in Western Region was at the stage of enforcing existing bye-laws to prevent mangrove degradation and sand winning along the coast. Triple Win? Mangroves are for example are high carbon sequesters, offer protection against sea erosion and provide conducive environment to increase fish breeding for food.

Default CCD practice, though underscore the fact that many issues of CCD are familiar within the field of development (Maxwell, 2015), raises concerns about its maladaptation implications as it lacks prior conscious planning and assessment with respect to promoting 'triple win'. Recognition and conscious integration of CCD into development planning and implementation is therefore crucial. This is also because Default CCD practice is unlikely to innovate to maximise synergies present in such potential CCD interventions and/or unlikely to minimise the trade-offs significantly.

Very crucially, it will be important to add to Ghana's existing climate change mainstreaming and disaster risk reduction guideline (see Nelson et al. 2010), a further specific assessment suggested in Table 6.

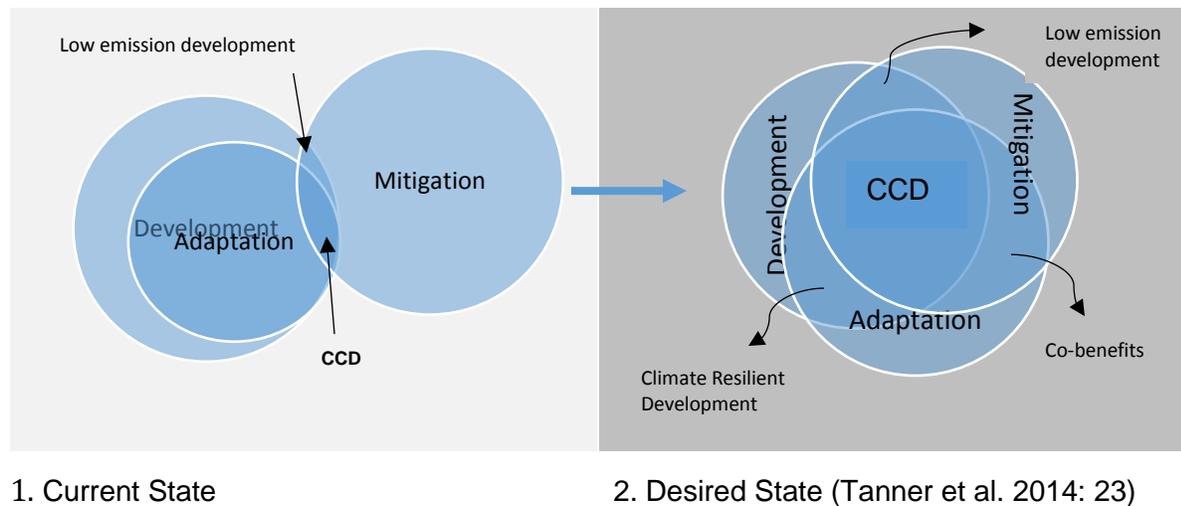
| <i>Project</i>           | <i>Component</i>                     | <i>Activities implementation management</i>  | <i>List, cost and implement all activities/measures</i> |
|--------------------------|--------------------------------------|--|---|
|                          |                                      | <i>Identify measures/activities to maximise adaptation benefits</i>  |   |
|                          | <i>Identify adaptation benefits</i>  |  |   |
|                          |                                      | <i>Identify activities to address emissions sources and negative impact on development</i>                       |   |
|                          |                                      | <i>Identify measures/activities to maximise development benefits</i>   |   |
| <i>Project/programme</i> | <i>Identify development benefits</i> |  |   |
|                          |                                      | <i>Identify activities to address emissions sources and possible reduction in adaptive capacity</i>              |   |
|                          |                                      | <i>Identify measures/activities to maximise emission reductions</i>  |   |
|                          | <i>Identify mitigation benefits</i>  |  |   |
|                          |                                      | <i>Identify activities to address negative impact on development and possible reduction in adaptive capacity</i> |   |

Figure 2: Framework for accounting for CCD

Ghana’s climate change and disaster risk reduction guideline follows the planning process of formulation: development policy formulation, planning, budgeting, implementation, monitoring and evaluation, which is good. However, the assessment framework presented in Table 6 will be helpful to local governments in pinpointing what exactly needs to be done to enable an intervention achieve a triple win.

## 7. ADVANCING LOCAL LEVEL CCD IN GHANA

The current state of local level climate interventions appears biased towards climate-resilient development, reflecting the position of most developing countries and Ghana’s climate change policy vision. Only few planned interventions are in support of low carbon/emission development<sup>2</sup> and co-benefits<sup>3</sup>. The current state also shows the blurred relationship between adaptation and development acknowledged in literature/practice (see Sherman et al. 2016). Figure 1 compares the current state of how CCD is reflected in the MTDPs to what is the desired.



**Figure 3. Distribution of climate interventions**

Advancing towards the “desired state” of CCD raised some genuine concerns. First is the questions raised as to whether it is possible to achieve poverty reduction in transitioning to low carbon growth and where especially systematic evidence is lacking in that regard (Maxwell, 2010). This has been observed as difficult as poverty reduction policies require focus on the poor, who emits less (Tanner et al. 2014). For example, subsidy removal on premix fuel (potential CCD policy reform) for artisanal fishing in Ghana was opposed as an anti-poor and inequitable proposal on low income fisher folks (ibid). The argument herein questions the suggestion that climate change mitigation and adaptation measures and interventions in Africa will invariably be poverty reduction strategies for a sustained development (Alo, 2017).

Tanner et al. using the case of the Mangrove Protection Policy in Ghana concluded that institutional failure, rather than a lack of policies per se will be a major constraint

<sup>2</sup> LPG use and promotion of energy efficiency exemplify low carbon development interventions (Bibiani – Anhwiaso – Bekwai District Assembly 2014; Kwabre East District Assembly 2014 and Agotime-Ziope District Assembly 2014)

<sup>3</sup> Introduction of ‘vertiver’ grass in flood prone and poor drainage communities in Gomoa West District could contribute to co-benefits (Gomoa West District Assembly, 2014).

to CCD. The question is, will the local governments be able to surmount their financial and technical resource constraints in meeting the strong institutional change, capacity and coordination necessary to identify and manage CCD's multi-dimensional interaction with different social groupings and locations?

## **8. ADDRESSING CHALLENGES TO EFFECTIVE LOCAL LEVEL CCD IN GHANA**

Not surprisingly, this study found that lack of adequate reliable funding for local level planning and implementation, weak knowledge of existing and emerging climate change issues, national climate policies and resource constraints have and will gravely undermine effective local level CCD and any possibility of making strides in the attainment of the sustainable development goals and the Paris Climate Agreement. The lack of in depth understanding of the CCD concept among the development planners is perhaps the fundamental demotivating factor for successful local level CCD practice to which we propose two solutions to.

1). It will be necessary to encourage (or for national government to facilitate) MMDAs in Ghana to join and actively participate in Global Local Government Climate Change Networks such as ICLEI - Local Governments for Sustainability<sup>4</sup>, CITIES and CLIMATE CHANGE. We observe that ad hoc or project-initiated capacity building is not only perceived as externally driven and incentive-motivated but have also shown to have less consistent impact on knowledge and practice. Membership of such networks will keep MMDAs updated with the ongoing debates and approaches, increased exposure, continuous learning and momentum to take climate-development actions 2). Designation of climate focal point in all districts to coordinate climate change issues in all matters of development including climate funding – a major challenge.

## **9. LOCAL LEVEL CCD, WHAT ARE THE PROSPECTS?**

In this study, a District Development Planning Officer argued that, "local level CCD has the potential to break the poverty-environment cycle [citing that]; instead of cutting down trees for [commercial] charcoal [production] during the dry season, [hopefully] attentions will be turned away from there [commercial charcoal production] since there are dug-outs for irrigated farming." The Officer continued to cite an example of labour-based feeder road construction project in the District - that used paid-local labour reducing machinery use and associated higher emissions. The road improved access from farms and farming communities to marketing centres - to support CCD as capable of building community capacity, expanding income and employment opportunities. It is hoped that local level CCD will raise policy makers' sensitivity to the web of environmental issues connected to development and vice versa. Others recognised that "local level climate change is intricately linked with

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<sup>4</sup> Yendi Municipality, Ghana • Accra Metropolitan Assembly, Ghana. Kumasi Metropolitan Assembly, National Association of Local Authorities of Ghana (NALAG) are members

planning for sustainable local development". While no dissenting views were recorded, majority however did not elaborate their reasons for agreeing to claims that CCD has prospects.

Indeed, the prospects in advancing local level CCD has been acknowledged across academics and policy circles (Broto et al. 2014; Schreurs 2008; IPCC, 2007). They include legitimisation of climate action among wide range of stakeholders, enhancement of community ownership and sustainability of climate interventions, collaborative action on low carbon growth, economy, society and life leading to reduction in carbon footprints, rapid practical awareness creation on climate change, increased grassroots understanding and adaptation to climate impacts to speed up a transformative climate action. Harness conditions that exist for CCD.

In support of the foregoing, not only will national climate policies and plans require local implementation to be effective (Anton et al. 2014; Bianci et al. 2005), local governments and other sub-national actors have unique advantages to champion climate compatible development planning and implementation. With appropriate technical capacity building, local government decision makers and actors can use their local experiential knowledge of climate trends to engineer context-suited solutions to peculiar climate-development complexities.

Similarly, local governments are more accessible to climate-affected people, traditional authorities and climate-concerned institutions such as the, Civil Society Organisations (CSOs), national institutions and international development partners. Well-coordinated efforts among these key actors have the potential to increase social capital and mobilise both local and international resources for planning and implementation (Anton et al. 2014). The case of Ghana's local government structure and arrangement creates an institutional environment that (assuming other things being equal) should enable effective climate compatible development from a cross-sectoral and integrated approach, taking advantage of the flexibility and the coordination mechanisms presented through different departments working in closer physical proximity and sometimes within one office space. Giving these facts, it is less likely to disagree with Anton et al. (2014) that the battle for climate compatible development will be won or lost at the subnational level; in the provinces, districts and cities. Yet entrenched challenges exist for local governments to overcome.

## **10. CONCLUSION**

The current state of local level climate interventions appears biased towards climate-resilient development reflecting the position of most developing countries and Ghana's climate change policy vision. However, recognition of CCD in Ghana is low

among the local planning and implementation authorities, the MMDAs. CCD practice remains default among the MMDAs, and raises concerns about its maladaptation implications as such (default CCD) lacks prior conscious planning and assessment with respect to promoting 'triple win' which can produce self-defeating results. Recognition and conscious integration of CCD into development planning and implementation is crucial as Default CCD practice is unlikely to innovate to maximise synergies present in such potential CCD interventions and or unlikely to minimise the trade-offs significantly.

Although, CCD offers a credible approach to promoting sustainable development, and addressing tensions between adaptation and mitigation, its ability to contribute to poverty reduction at same time has been questioned. The role of the local government will be to use their unique advantages (e.g. local experiential knowledge of climate trends) and encourage collaboration, increase their knowledge-based capacity and climate finance to harness climate change mitigation and adaptation with sustainable development

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## **12. APPENDIX: CLIMATE CHANGE INTERVENTION CATEGORISATION**

**M = Mitigation, A = Adaptation and D = Development**

| District/MMDAs                                | M+A | M+D | A+D | M+A+D |
|---|-----|-----|-----|-------|
| <b>Region: EASTERN REGION =10</b>             |     |     |     |       |
| Akuapem South Municipal Assembly              |     |     |     |       |
| Nsawam adoagyiri municipal assembly           |     |     |     |       |
| Fanteakwa district assembly                   |     |     |     |       |
| Asuogyaman district assembly                  |     |     |     |       |
| Awutu senya east municipal assembly           |     |     |     |       |
| Kwahu afram plains south district assembly    |     |     |     |       |
| Kwahu west municipal assembly                 |     |     |     |       |
| Asutifi north district assembly               |     |     |     |       |
| Ayensuano district assembly                   |     |     |     |       |
| Lower manya krobo district                    |     |     |     |       |
| <b>REGION: CENTRAL REGION = 10</b>            |     |     |     |       |
| Asikuma-Oboden-Brakwa District Assembly       |     |     |     |       |
| Effutu Municipal Assembly                     |     |     |     |       |
| Gomoa West District Assembly                  |     |     |     |       |
| Komenda-Edina-Eguafo-Abrem Municipal Assembly |     |     |     |       |
| Mfantseman Municipal Assembly                 |     |     |     |       |
| Twifo-Atti-Morkwa District Assembly           |     |     |     |       |
| Upper Denkyira East District Assembly         |     |     |     |       |
| Upper Denkyira West District Assembly         |     |     |     |       |
| Agona West Municipal Assembly                 |     |     |     |       |
| AWUTU SENYA EAST MUNICIPAL ASSEMBLY           |     |     |     |       |
| <b>REGION: WESTERN = 10</b>                   |     |     |     |       |
| AMENFI CENTRAL DISTRICT                       |     |     |     |       |
| BIA EAST DISTRICT                             |     |     |     |       |
| BIBIANI – ANHWIASO – BEKWAI                   |     |     |     |       |
| BODI DISTRICT                                 |     |     |     |       |
| ELLEMBELLE DISTRICT                           |     |     |     |       |
| JOMORO DISTRICT                               |     |     |     |       |
| SEFWI AKONTOMBRA DISTRICT                     |     |     |     |       |
| WASSA AMENFI EAST DISTRICT                    |     |     |     |       |
| TARKWA - NSUAEM MUNICIPALITY                  |     |     |     |       |
| Sekondi-Takoradi Metropolitan Assembly        |     |     |     |       |

|  |  |        |        |       |
|--|--|--------|--------|-------|
| Wenchi Municipal                       |  |        | Yellow | Green |
| SENE WEST                              |  | Orange | Yellow | Green |
| Tano south                             |  |        | Yellow |       |
| NKORANZA NORTH DISTRICT ASSEMBLY       |  |        |        |       |
| TECHIMAN MUNICIPAL ASSEMBLY            |  |        | Yellow |       |
| Ada West District Assembly             |  |        | Yellow | Green |
| Adentan Municipal Assembly             |  |        |        | Green |
| <b>UPPER WEST REGION = 6</b>           |  |        |        |       |
| SISSALA- EAST DISTRICT                 |  |        | Yellow | Green |
| NANDOM DISTRICT                        |  |        |        | Green |
| NADOWLI-KALEO DISTRICT                 |  |        | Yellow | Green |
| DAFFIAMA BUSSIE ISSA DISTRICT          |  |        | Yellow | Green |
| JIRAPA DISTRICT                        |  |        | Yellow |       |
| WA WEST DISTRICT                       |  |        | Yellow | Green |
| Bongo District Assembly                |  |        |        |       |
| Builsa South District Assembly         |  |        | Yellow | Green |
| Nabdam District Assembly               |  |        | Yellow | Green |
| Talensi District Assembly              |  |        | Yellow | Green |
| Agotime-Ziope District Assembly        |  | Orange | Yellow | Green |
| Akatsi South District Assembly         |  |        |        |       |
| Biakoye District Assembly              |  |        | Yellow | Green |
| Central Tongu District Assembly        |  |        | Yellow |       |
| Ho Municipal assembly                  |  |        | Yellow |       |
| Ho West District Assembly              |  |        | Yellow |       |
| Kadjebi District Assembly              |  |        |        |       |
| Ketu North District Assembly           |  |        |        |       |
| Krachi West District Assembly          |  |        |        |       |
| Nkwanta North District Assembly (NNDA) |  |        |        |       |
| <b>REGION NORTHERN REGION = 16</b>     |  |        |        |       |
| Bole                                   |  |        | Yellow |       |
| Central Gonja                          |  |        | Yellow |       |
| East Gonja                             |  |        | Yellow | Green |
| East Mamprusi                          |  |        | Yellow |       |
| Karaga                                 |  |        | Yellow |       |
| Kpandai                                |  |        | Yellow |       |
| Kumbungu                               |  |        | Yellow |       |
| Mamprugu Moagduri                      |  |        | Yellow |       |

