Determinants for the adoption of climate change policies for urban Africa: A study of urban local governments in Ghana

Afua Ofouwaah Adu-Boateng (2014)

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Afua Ofouwaah Adu-Boateng

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Abstract

Scholars have reiterated that development discourse is concerned not just with the practices of development, but crucially with the politics and power of knowledge and ideas that shape development: their origins, content, contestation, diffusion and dissemination (Moore, 1995; Roy, 2010; Escobar, 2012). One issue facing all countries is climate change. Though contested, climate change has emerged as an urgent issue around which both ideas of development and practice are crystallising both in the north and south.

However in this discourse, the diffusion and adoption of climate change adaptation and mitigation policy ideas to urban governments in Africa have received limited research attention. International reports indicate a low uptake of climate change policies in Africa generally, and urban areas in particular. The concern with climate change seems not to dwell much on seeking better understanding of the factors that determine the spread and adoption of climate change policy as well as the barriers to adoption in different world contexts.

With particular reference to Ghana, this study examines the ideas and material conditions associated with policy diffusion to examine what drives diffusion and adoption of climate change policies in Africa's urban areas. The study investigates climate change ideas: how climate change ideas move from 'international spaces' to national and, most crucially, urban local

government policy spaces. Drawing on social science, institutional and organisational concepts of change, it seeks to answer questions of how and to what extent climate change ideas are received and converted into policy and programmes at local government level. The conceptual framework suggests that international pressure, norm imitation, policy utility and emulation are potential concepts to explain adoption of climate change policies by metropolitan governments. To investigate which of these concepts adequately explain the situation in Ghana, data was collected using qualitative methods, semi-structured interviews with key policy makers in local government and urban development planning in Ghana. This is complemented by content analysis of grey literature, urban development plans, and policy documents, and a focus on 3 metropolitan urban areas of Accra, Kumasi and Tamale.

Results suggest that the government of Ghana has instituted directives for climate change considerations in metropolitan development plans. The national urban policy has a climate change component. An investigation of metropolitan development plans indicated that climate change related projects were initiated in response to national directives. This emphasised exogenous pressure as a determinant of adoption by metropolitan governments in the context of Ghana. On the other hand, political and public interests shape the extent to which the directives on climate change are integrated in development plans. Moreover material constraints and agents' limited conceptualisation of climate change policy place barriers to adoption. The research concludes that national guidelines and directives,

underpin the response by Ghana's metropolitan governments, whilst actors and resources shape the mechanisms for the adoption and barriers to comprehensive climate change policies.

Dedication

This thesis is dedicated to my husband Kwaku Adu-Boateng and my daughters, Abena Owusua Adu-Boateng and Abena Kusiwaa Adu-Boateng.

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I would like to acknowledge the immense support I received from my supervisory team, research participants, friends and family.

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Abbreviations

AAP	African Adaptation Programme
AFD	Agence Française de Développement
AfDB	African Development Bank
ALP	Adaptation Learning of Programme
AMA	Accra Metropolitan Assembly
BRRI	Building Road Research Institute
CAPAM	Commonwealth Association of Public Administration and Management
CCCI	Cities in Climate Change Initiative
CDM	Clean Development Mechanism
CIF	Climate Investment Fund
COP	Conference of Parties
CSIR	Council for Scientific and Industrial Research
CSM	Cerebral Spinal Meningitis
DACF	District Assembly Common Fund
DfID	Department for International Development
ECOWAS	Economic Community of West African States
EPA	Environmental Protection Agency
EU	European Union
GEF	Global Environmental Facility
GNUP	Ghana National Urban Policy
GoG	Government of Ghana
GSGDA	Ghana Shared Growth Development Agenda
HFA	Hyogo Framework Action
ICLEI	International Council for Local Environmental Initiatives
IMF	International Monetary Fund
ILGS	Institute of Local Government Studies
IPCC	Intergovernmental Panel on Climate Change
KMA	Kumasi Metropolitan Authority
LDC	Least Developed Countries
LGS	Local Government Service
MA	Metropolitan Assembly
MDBS	Multi-Donor Budgetary Support
MDG	Millennium Development Goals
MEST	Ministry of Environment, Science and Technology
MLGRD	Ministry of Local Government and Rural Development
MMDA	Metropolitan/Municipal/District Assembly
MOE	Ministry of Energy
MoFEP	Ministry of Finance and economic Planning
MTDP	Medium Term Development Plan
MWRWH	Ministry of Water Resources, Works and Housing

NADMO	National Disaster Management Organisation
NAPA	National Adaptation Programme of Action
NC	National Communications
NCCE	National Commission for Civic Education
NCCPF	National Climate Change Policy Framework
NDPC	National Development Planning Commission
NEPAD	New Partnership for Africa's Development
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
RCC	Regional Coordinating Council
SSA	Sub-Saharan Africa
TA	Technical Assistance
TaMA	Tamale Metropolitan Assembly
TCPD	Town and Country Planning Development
UCLG	United Council of Local Governments
UN	United Nations
UNISDR	United Nations International Strategy for Disaster Reduction
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Aid
WDR	World Development Report
WMO	World Meteorological Organisation
WRI	World Resources Institute
WTO	World Trade Organisation

1 Urban Governments Responding To Climate Change: An Introduction

1.1 Background to the research

Generally African urban political economies have been viewed as sites of contestation for global and local policy ideas, which therefore shape the nature and content of public policy initiatives (Hamza and Zetter, 1998; Pacione, 2001; Rakodi, 1997). This situation had been described by Putman (1988:427) as 'the entanglement of domestic and international politics'. Similarly, Myers (2005:7) portrays African urban political economies as playing host to powerful global agendas. The theme of the Commonwealth Association of Public Administration and Management (CAPAM) conference in 2010, 'Building a common future: Global Challenges, Local Responses' , which focused on 'how global challenges are shaping public sector reform agendas ', reinforces this concern at the local level (CAPAM, 2011:5). By implication, urban governments are faced with contexts of engaging in processes and challenges of translating global agendas for local contexts. One such agenda is that of responding to climate change. Despite seemingly international consensus on the significance of global agendas, localising global development agendas and a call for cooperation and collective action towards a global convergence in

national climate change policy goals (O'Neil, 2009) has so far been met with mixed responses across Sub-Saharan Africa.

This research therefore explores the emergence and diffusion of global policy ideas, in particular how urban local governments in Africa respond to climate change policy ideas that are generated in international arenas. The remainder of this chapter presents the theoretical and policy context within which this research is anchored, leading to a framing of the research aim and objectives. It begins by exploring the concept of climate change as a hegemonic discourse, and how its policy ideas emerged. The chapter emphasises that with prevailing policy ideas, there is an assumption that climate change policies for urban areas would be adopted by national and metropolitan governments, which tends not to always be the case, despite the threats of climate change impacts for urban development.

1.2 Climate change policies: The hegemony gap

In every social epoch, certain global policy ideas and knowledge paradigms tend to attain hegemonic status (Roy, 2010). There appears to be an assumption in favour of their adoption, particularly when these ideas make common sense or border on issues like justice and rights (De Lucia, 2009a). It has been suggested that ideas and the institutional architecture for knowledge production have the potential to entrench existing hegemonic inclinations (Escobar, 1995). In the context of climate change, the Intergovernmental

Panel on Climate Change (IPCC) has been criticised for being dominated by western scientists and knowledge systems, and hence wields immense power as a producer of biased knowledge on climate change (Rosales, 2008). Nonetheless the IPCC-produced Assessment Reports (1990-2013), have been significant in shaping political negotiations at the United Nations Framework Convention on Climate Change for both developing and developed countries (National Research Council, 2002: 41). However Makina (2013:42) suggests that the UNFCCC-African Group has limited negotiation powers. Therefore the African Group becomes subject to the politics and agendas of more powerful nation state coalitions. For instance, the role of powerful nations such as the United States in framing or shaping agendas as well as outcomes of negotiations has been alleged during the Copenhagen climate Conference of Parties (COP) in 2009 (Carrington, 2010). In essence, global climate change knowledge production and institutional architecture reinforces emerging policies as dominant models for adoption.

Rooted in economic terms, Keohane (1984:32, 214) conceptualises hegemony as economic and the 'preponderance of material resources' and in terms of 'control of raw materials, sources of capital, markets and competitive advantage- oil, money and trade'. On the other hand hegemony finds expression in cultural terms and ideas can also be viewed as a means through which power is

established and perpetuated (Bates, 1975). Understanding cultural hegemony requires revisiting Antonio Gramsci's discourse on hegemony. Drawing on Gramsci, 'hegemony', in cultural terms, can be described as,

> '.. a certain way of life and thought is dominant in which one concept of reality is diffused throughout society in all its institutional and private manifestations informing with its spirit all taste, morality, customs, religious and political principles, and all social relations, particularly in their intellectual and moral connotations'(Williams, 1960: 587).

Femia (1981: 24) also draws extensively on Antonio Gramsci's publications and explains hegemony as 'an order in which a common social-moral language is spoken in which one concept of reality is dominant informing with its spirit all modes of thought and behaviour'. According to Marx and Engels (1986: 25) 'the ruling ideas of each age have ever been the ideas of the ruling class'. Ideas of the 'ruling classes' operate as authoritative knowledge, thereby making or unmaking our perception of the world (Escobar, 1995). By implication the dominant concept of reality is framed by the ruling class who may constitute a few centres of knowledge compared to the wider society. As Roy (2010: 35) notes, there is a 'geography to the production of authoritative knowledge'. Femia (1981) previously highlighted that for cultural hegemony to be established consent has to be given from 'subjects'. The legitimacy of a hegemonic discourse or power is inherent in cooperation with

other non-dominant states in the world system (Keohane, 1984). This emphasises that two factors are necessary for the establishment of dominant ideas: those subject to and initiators or producers of the knowledge. Consequently differentiation in relational conditions is determined by material and mental production capacities and this creates conditions for the dominance of ruling ideas over counter-ideas constructed by other classes.

Much has been theorised about dominant global ideas, the knowledge production and ideational control centres. The interaction of dominant ideas with the social class described by Marx and Engels (1970:64) as 'those who lack the means of mental production', has been largely understudied. Keohane (1984: 39) criticises this gap in ideational hegemony studies:

> 'Theories of hegemony should seek not only to analyse dominant powers' decisions to engage in rule-making and rule-enforcement but also to explore why states defer to the leadership of the hegemon. That is they need to account for the legitimacy of hegemonic regimes...'

One could characterise this as the 'hegemon gap'. Consequently, in addition to exploring the emergence of dominant policy ideas on climate change, this research also responds to this gap by investigating the responses of local governments. Metropolitan governments tend to have varied but usually limited powers, in relation to national governments, in establishing dominant global policy ideas. As a result climate change mitigation and adaptation

ideas may therefore assume the status of a hegemonic discourse or development paradigm, especially for cities in Sub-Saharan Africa since they are rarely represented in the establishment of these policy ideas. All the same, some metropolitan governments, such as those in Ghana, seem to have begun integrating climate change policies in the metropolitan medium term development plans, as would be discussed in subsequent section 1.2.

Dominant policy ideas are not cast in stone, as they are received with varying responses. Sallach (1974: 46) urges sociologists to consider the limitations of hegemony since 'however strong ideational control might be, it yet retains the potential to generate opposition'. The potential for dominant ideas to be challenged by units external to the ruling class has been noted with concepts such as counter-hegemony and alternative hegemony arising out of this battle for ideas (Williams, 1977). Although counter-hegemony may appear to be an antithesis of hegemony and connoted as negative, Chaudhuri (1988) asserts otherwise and suggests that opposition to dominant ideas should not be considered so. On the other hand the counter challenges are inherently an extension of the hegemonic process and are deemed relevant for its establishment.

Deferring to the dominant ideas is the second probable response by states or entities subject to hegemonic ideas, a response which appears to be driven by interests of the recipient institutions. For

instance in ‘The German Ideology’ Marx et al. (1970) describe conformity as being shaped primarily by the interests of non-ruling classes, with the possibility for social mobility to the ruling class. The benefits of deferring to dominant ideas, as suggested by Keohane (1984), also support the utilitarian argument. Based on a study of United States’ ideological hegemonic powers, Keohane (1984: 137) states that ‘acceptance rested in turn on belief of secondary states that they are benefiting from the structure of order that was being created’. The arguments on conformity and opposition suggest materialistic motivation in decision making in responding to dominant policy ideas. On the other hand, to the idealist, the response to imposed ideas is shaped in the consciousness of the mind. Femia (1981) draws on Gramsci to assert that conformity to hegemony is driven by four factors: fear of consequences of non-conforming, habit, perceiving the hegemony to be convenient for social order, and its convenience for reciprocity and self-interest. These are concepts of the mind and are said to play a role in shaping response to dominant ideas imposed by hegemonic powers. The concepts of conformity and opposition to dominant policy ideas show that there is the potential for mixed responses from policy makers to climate change mitigation and adaptation ideas.

1.3 Cities on the margin: resistance or conformity to climate change policy ideas?

It has been established that policy ideas for planning urban areas 'travel' (Tait and Jensen, 2007) and meet local contexts, which tend to challenge and raise barriers to these ideas settling. Roy (2010: 42) suggests that to observe the clash of global ideas with local contexts requires a 'journey to the margins' - places on the global economic periphery, such as those in Ghana. Cities have been largely recognised as entities connected to and driving the capitalist global world economic system (Knox and Taylor, 1995) and are perceived as in a hierarchy in world systems theory (Friedmann, 1986; Wallerstein, 1974). Alternative perspectives present the city-global relationship as a network in space (Beaverstock *et al.*, 2000; Castells, 1990; Smith, 2003). These two perspectives, though approaching the study of the city in a global system differently, have a common theme. Both create categories of urban areas based on aspects of economic, technological or information power.

Generally Sub-Saharan African cities have occupied the periphery of a capitalist world economic system (Simon, 1992). These are places where particular capital accumulation and concentration could be hypothesised as relatively minimal in comparison to world cities such as those in developed countries or emerging economies of China, Brazil, India or South Africa. This is not to assume that all urban areas in these emerging economies are places of immense

capital accumulation. There are obvious variations among urban areas in these countries, in terms of global or regional influence and their connection to the global network of cities. Perceiving capital in cultural terms, of knowledge, provides another perspective for studying the relation of cities to world systems. Friedmann (1986: 73) mentions the cultural dimensions of the relation of cities to world economic systems,

> 'An important ancillary function of world cities is ideological penetration and control. New York and Los Angeles, London and Paris, and to a lesser degree Tokyo, are centres for the production and dissemination of information, news, entertainment and other cultural artefacts.'

By this assertion, in a system of cities of the world, some occupy what Peet (2007:53) describes as 'global mind centres' or 'centres for production and dissemination of information' (Friedmann, 1986: 73). In the production of knowledge, a form of 'official' legitimate reality is produced, though reality is claimed to be differentiated and a complex phenomenon (Berger and Luckmann, 1991). Clearly, it can be argued that African cities occupy the margins or periphery of the world economy and are to a large extent more often participants in the circulation of capital rather than its production (Simon, 1992). The world economic system creates a complex social relation of dependency between developed and developing countries which permit the tendency for flow of novel ideas from more advanced

capitalist societies (Healey and Upton, 2010; Peet, 2007; Simon, 1992).

The preceding discussion has stressed that, in the categorisation of cities, most urban governments in Africa would operate on the margin of the world economic system, knowledge economy and international negotiations. Therefore one could assume that in a state of such dependency on few knowledge producing centres, dominant policy ideas would be conformed to. However, though urban governments in Sub-Saharan Africa may be regarded as on the margin of a global economic system, there is reasonable consensus among scholars that, in ensuring sustainable urban futures, urban government institutions (in both developing and developed countries) play a key role in governance which promotes climate sensitive urban development (Betsill and Bulkeley, 2004; Bulkeley *et al.*, 2009; McCarney *et al.*, 2011; Satterthwaite *et al.*, 2007b; UN-Habitat, 2011; WDR, 2010). The role of urban governments is clearly reinforced particularly since climate change presents contextual impacts and challenges for the physical development and socio-economic dimensions of African urban settlements as well as urban political institutions of these rapidly growing urban areas (McCarney *et al.*, 2011). All the same, localising global climate change concerns for urban areas has received marginal attention in developing country governments' programmes and strategies on

climate change (Satterthwaite *et al.*, 2007b; Simon, 2006) and mixed responses by local governments themselves.

Scholars recognise the role of sub national governments as key actors in moving towards global convergence of climate change policy goals and ensuring climate resilient development (Betsill and Bulkeley, 2006; Bulkeley, 2008; UNHabitat, 2009; WDR, 2010). Despite this recognition, in reality, the national and urban sub-national context of most sub-Saharan Africa presents a different image. Satterthwaite *et al.*(2007b) and Simon (2010) have noted variations in, and a marginalisation of, the urban context in the contents of national climate change policy on one hand, and limited initiatives by urban governments on the other. Furthermore, compared to studies on hotspot urban areas in developed countries (Alber and Kern, 2009; Betsill and Bulkeley, 2006; Biermann *et al.*, 2009; Bulkeley, 2008; Bulkeley *et al.*, 2009; Corfee-Morlot *et al.*, 2009; Roberts, 2009; Rosenzweig, 2011; Sanchez-Rodriguez *et al.*, 2008; Warden, 2009), the implications of climate change related disasters for urban policy formulation and governance institutions in most sub-Saharan African cities, and Ghana in particular, are yet to receive extensive scholarly attention.

However recent studies have highlighted that there is emerging good practice in Sub-Saharan African urban areas aimed at reducing greenhouse gases emissions and increasing resilience to the adverse

impacts of climate change. For instance a publication by the UN-Habitat (2012) brings to fore emerging 'promising practices' by fifteen Sub-Saharan African cities. 'Promising' rather than 'best' was deemed the appropriate term to describe the emerging responses to climate change in the participating cities. In addition to the emerging practices by a few local governments, an assessment of the United Nations Framework Convention on Climate Change (UNFCCC) National Adaptation Programmes of Action (NAPA)[1] shows that the urban context continues to receive less specific national attention, especially in Sub-Saharan Africa. As displayed in Fig. 1.1 the proportion of projects submitted under the NAPA between 2004 and May 2013 has been in favour of sectors such as agriculture, food security and natural resource management.

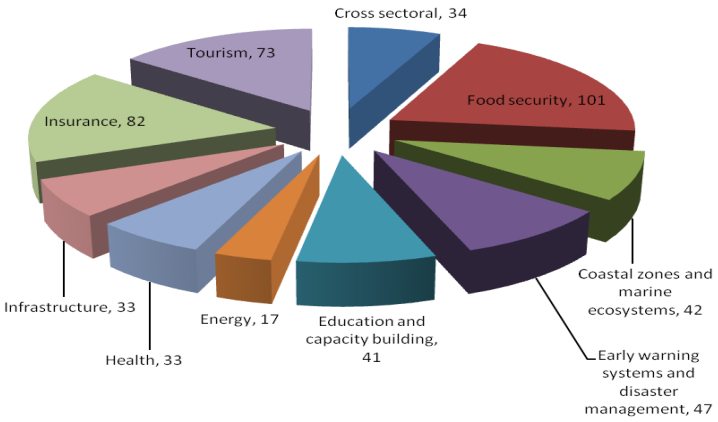


Figure 1.1 National Adaptation Programmes of Action-proposed projects by sector

Source: Derived from UNFCCC (2013) NAPA database

[1] National Adaptation Programmes of Action (NAPA) are prepared by Least Developed Countries (LDC) to highlight sectors vulnerable to climate impacts and present programmes of action for immediate and urgent attention.

An initial investigation of National Adaptation Programmes of Action (NAPA) submitted by national governments of Least Developed Countries (LDC) indicates that seven out of 48 Least Developed Countries submitted NAPAs with a specifically mentioned urban project (UNFCCC, 2013). However, some city projects are thinly spread across other sectors. For instance Djibouti, in its water supply programme, plans on 'Promoting protection measures adapted to the water supply infrastructures of the City of Djibouti'. Similarly, Burundi, under the overall project of river stabilisation, plans on 'Stabilisation of river dynamics of watercourses and torrents in Mumirwa, including the city of Bujumbura'. Other projects do not mention a specific urban component of addressing climate change, but may have an indirect impact on urban areas. This makes it problematic to clearly define how urban areas would be affected by these national sector-based projects.

Table 1.1 Urban related projects in National Adaptation Programmes of Actions

Country	Project Priority No. (Total no. of projects)	Project description
Sierra Leone	19 (24)	Develop and enact appropriate policies and regulations relevant to the development of coastal communities, urban growth planning and critical coastal ecosystem preservation
	12(24)	Improving of the efficiency of existing water supply systems in both urban and rural areas of Sierra Leone
	24(24)	Monitoring, evaluation and control of water and sanitation activities in slum areas of Freetown, the capital city of Sierra Leone.
Djibouti	8(8)	Promoting protection measures adapted to the water supply infrastructures of the City of Djibouti
Niger	5(14)	Promoting peri-urban market gardening and livestock farming
Liberia	3(3)	Coastal defence system for cities of Buchanan and Monrovia, reducing vulnerability of (Monrovia, Buchanan) coastal areas to erosion, floods siltation and degraded landscapes
Nepal	9 (9)	Promoting climate smart urban settlements
Bangladesh	8(15)	Enhancing resilience of urban infrastructure and industries to impacts of climate change
Central African Republic	2(10)	Promoting urban and sub-urban forests
Zambia	10(10)	Climate proofing sanitation in urban areas

Source: Adapted with data from UNFCCC (2013).

However, as shown in Table 1.1, even when the specific urban component is mentioned they generally received less priority or are linked to a natural resource based project. In the case of Central African Republic, when an urban project is ranked as 2nd priority out of ten projects it is linked to the natural ecology (promoting urban and sub-urban forests). Similarly, Niger's proposed urban project aims to promote peri-urban market gardening and livestock farming (UNFCCC, 2013). These observations in the UNFCCC-NAPA database reinforce the assertion that the urban context is marginalised in developing countries programmes on addressing climate change, despite the threat climate change presents to urban areas in developing countries.

1.4 Explaining responses to climate change policies

Various scholars (Bicknell *et al.*, 2009; Gupta, 1997; McCarney *et al.*, 2011; Satterthwaite *et al.*, 2007b) have made attempts to explain the rationale for responses by state and urban governments to the novel ideas on planning for a changing climate. The attributes of the domestic political unit (which in this case is the urban government) are essentially considered as critical in shaping policy responses to climate change in cities, particularly Sub-Saharan Africa. Gupta (1997) captured the local contextual barriers by suggesting that there is a lack of domestic support for climate change negotiations made at the international arena. From a local governance perspective,

McCarney (2009: 35-40) identified six core local governance challenges to successful climate change action. These are leadership, financing, citizen participation and access to information in addition to jurisdictional coordination as well as land-use planning. Furthermore, the difficulties in localising national data on climate change risks and vulnerability place constraints on action for climate change adaptation (ibid). Satterthwaite (2007b: 8) reinforced the importance of the domestic context, and attributed the limited responses to climate change adaptation in developing country urban areas to the 'incapacity of urban governments' and 'the antagonistic relationship between urban governments and most low-income groups', in addition to the 'lack of a strong information base' to feed evidence-based climate change urban resilient policy formulation. The Global Report on Human Settlement (UNHabitat, 2011) similarly emphasises the local context and identifies governance capacity challenges, namely institutional, technical and economic and political, as critical in shaping urban policy responses. Clearly the main argument in the above discourses on climate change policy suggests that domestic factors are crucial in determining urban policy responses.

However, taking this standpoint tends to ignore the macro-level exogenous processes such as the contribution of climate negotiations in the international arena, considering that climate change policies originated as an international issue (Albrecht and Arts, 2005). In

addition, the influence of international actors, processes and institutions (Busch and Jorgens, 2005; Kelley, 2004) need not be overlooked when investigating climate change responses in urban areas. The danger of adopting a strictly domestic line of argument in explaining limited climate change policy responses in urban areas is that it runs the 'risk of drawing biased inferences about the domestic political relationships under investigation' (Oatley, 2009: 319). Berry and Berry (1990) also argued that focussing on domestic determinants is a severely flawed traditional methodology. Moreover, Weyland (2005: 262) argued that 'domestic functions alone cannot account for the rapid spread of policy innovations or lack of; external factors make a major contribution' as well. Whilst the domestic context is critical, the international dimension needs to be considered as well when investigating determinants of policy responses to climate change in Sub-Saharan African urban areas.

It is worth noting that the efforts, and challenges, of only a few sub-Saharan African (SSA) city governments to plan for climate resilience and a green economy have been well documented. For instance the African City green index (Economist Intelligence Unit, 2011) highlights that six out of fifteen major African cities performed above average. Three were in South Africa, namely Johannesburg, Cape Town and Durban, and the rest were Accra, Casablanca and Tunis. Clearly northern and South African performed better on the green city index. In addition the UN-Habitat

report (2012) highlights the promising activities of fifteen cities in Sub-Saharan Africa on climate change mitigation and adaptation. These are only a reflection of activities of a few cities in Africa. Very little is known of how other urban governments, which do not feature prominently in the network of world cities, such as those in Ghana, have responded to the dominant policy ideas of climate change mitigation and adaptation. The responses of most city governments in SSA appear to have been understudied, Ghana's urban areas included. 51.5 % of the total Ghanaian population live in urban areas with an annual urban growth rate of 3.1 % (Ghana Statistical Services, 2000). Kumasi and Accra, the two largest cities in Ghana, contribute almost 20% of the national GDP (Farvacque-Vitkovic *et al.*, 2008a). Despite the noted significance of urban areas to the national economy the two National Communications submitted to the UNFCCC as part of its commitment and obligation to the climate change Kyoto Protocol make limited mention of a specific urban component (EPA, 2001; 2008). In contrast, the Ghana National Urban Policy (Ghana, 2011) highlights climate change adaptation and mitigation as one of the ten objectives in 'promoting a sustainable, spatially integrated and orderly development of urban settlements'. In view of global and national expectations on urban governments to integrate climate change policies in development planning, despite local contextual differences, it can be asked how urban local governments in Ghana have responded.

1.5 Research aim, objectives and structure of thesis: adopting climate change policies

This research therefore aims to investigate the response by urban governments in Ghana to localising climate change policies in development plans, and to provide an explanatory framework for the adoption and content of policy response. In order to achieve this, the following objectives were pursued.

The research investigates how climate change policy ideas emerged and diffuse. It reviews literature to synthesise various theoretical perspectives on the emergence, diffusion and adoption of climate change policies. The conceptual framework consists of exogenous and endogenous devices, and are utilised in investigating the policy responses of metropolitan governments, to establish the determinants in the context of Ghana. The research undertakes the investigation by adopting an explorative method towards the different possible exogenous and endogenous determinants. Consequently, the national level and three metropolitan cases are the focus of this research. Semi-structured interviews and policy documents were utilised for collecting data from national institutional frameworks, civil society groups, and the metropolitan case study areas of Accra, Kumasi and Tamale and donor partners.

Utilising field work data, the study analyses the extent to which the urban context has been integrated in climate change policies, and

how climate change policies have been mainstreamed in urban development plans in Ghana. The purpose was to examine the national government's response to the urban-climate change nexus drawing on empirical data from interviews and documentary evidence. It examines the content of development plans to draw out the climate change component and explain why metropolitan governments in Ghana have responded to climate change. The aim is to examine metropolitan governments' initiatives to include climate change concerns in development plans and analyse factors shaping the policy response and the barriers to climate change policies in local government. This is to establish how exogenous and endogenous determinants, agency and structural factors shape adoption, and also explore the barriers encountered.

This thesis is structured around the components highlighted for the mobility of policy ideas for climate change: policy emergence, diffusion and adoption. **Chapter 2** presents a rationale for the study. It highlights that policy ideas for climate resilient planning have emerged in response to the crisis climate change presents to ideals, the environment and development in general. Out of these varied crisis points policy ideas of mitigation and adaptation have been put forward to address the adverse impacts of climate change. The emergence and diffusion of climate change policies has introduced global policy ideas onto the local urban policy agenda. The chapter concludes that new policies could be adopted (or otherwise) which

sets the background for the conceptual framework. **Chapter 3** serves to present a conceptual framework for adoption (or otherwise) when a novel, exogenously initiated policy idea is introduced into a political unit. It recognises that in the face of localising global agendas, the policy making arena becomes a complex setting of interests and relations for decision making. Drawing on political science, social psychology and development studies, the framework suggests that the propensity to adopt is driven by coercive conditions, normative imitation, and utilitarian expectations and mimetic tendencies. It concludes that these four mechanisms are not mutually exclusive. These concepts tie into an overarching model that the propensity to adopt a policy idea is conditioned by structural and agency factors. Chapters 2 and 3 therefore set the conceptual background for empirical investigation in three case study cities in Ghana, namely Accra, Kumasi and Tamale. The rationale for the research design, data collection tools and field work experiences are captured in **Chapter 4.**

Chapter 5, the first results chapter, presents the institutional context within which the Government of Ghana has responded to climate change. It highlights the international context and presents national policies to address climate change, and then goes on to analyse the extent to which national urban policy frameworks have included a climate change component as well as the urban dimension in Ghana's National Climate Change policy and National Climate

Change Adaptation Strategies. The ensuing discussion considers the factors that have influenced the current responses by state government. The chapter concludes that a specific urban context continues to receive limited attention in national policies on climate change. The urban spatial context fails to feature as a key theme for relations Ghana government has engaged in whilst preparing climate change policies, and therefore does not appear as a priority.

Chapter 6 explores the response of Accra, Kumasi and Tamale Metropolitan governments to national directives in the medium term development plans for 2010-2013 for mainstreaming climate change policies. In this chapter, the development plans, institutional set up and financial budgets of the three metropolitan areas are examined. The empirical evidence suggests that the policy making process is characterised by complex actors and arenas engaged in climate change policy formation for urban areas in Ghana. Also though there is general awareness of climate impacts, mainstreaming climate change in the development has seen little progress.

Chapter 7 draws on empirical data of key actors in the development planning process to highlight the extent to which climate change has featured in their activities. The chapter considers the supply of local climate change knowledge by research institutions, social activism for climate resilient planning and greenhouse gas reduction and development partners' incentives for climate change -urban projects.

The conclusion is that there is a deficiency in the supply of localised knowledge, almost absent climate activism and limited incentives from development partners for city climate change initiatives. This acts as a disincentive for metropolitan governments to include climate change mitigation and adaptation ideas in their development plans.

Chapter 8 analyses the linkages between conceptual frameworks on diffusion and adoption of exogenous policy ideas (identified in Chapters 2 and 3) and the empirical evidence from the three case study metropolitan governments. It highlights the extent to which coercion; norm imitation; utilitarian expectations and mimetic isomorphism have contributed to shaping the response by Tamale, Kumasi and Accra metropolitan governments. The tensions faced by metropolitan governments in mediating different actors' interests in policy making for climate change are also presented. The chapter concludes that metropolitan governments are engaged in different social relations of production for managing cities, namely with central government, city government networks and civil society. The norms and conditions governing these relations are varied. Adopting climate change policies appears not to have gained prominence as a norm or condition for maintaining these relations and provide access to the means of managing cities in Ghana. The chapter argues that though structural conditions permitted adopting climate change

policies, the contents are shaped by actors' interests and conceptualisations.

In conclusion **Chapter 9** revisits the research questions and examines how the thesis has addressed them. The chapter notes that structural and agency factors both enable and constrain adoption of climate change policies by metropolitan governments in Ghana. It also sets the limitations of the study and general findings as well as suggesting recommendations for policy. Finally some concepts and policy areas are recommended for further research. In summary the structures in city policymaking both as act as enablers and the inherent tensions create barriers to adoption of novel policy ideas, such as climate change adaptation and mitigation.

2 Climate Change Policies: Rationale of an Emerging Development Paradigm

The rationale for the emergence and diffusion of climate change policy ideas is the focus of this chapter. It is essential to note that the role of ideas in effecting social change is well observed (Boudon, 1986; Nisbet, 1969). Similarly, the primacy of ideas in development discourse has been debated and the rise of an idea as a catalyst for social change has been regarded as insufficient in explaining social change without considering the 'origin of ideas and the source of their social influence' (Marx *et al.*, 1970:82). Essentially there is a gap between promoting the primacy and influence of ideas, and conceptualising the origin and means by which these ideas attain social significance. Climate change policy ideas are assumed to be socially and politically accepted, and to be adopted by local governments.

This chapter explores how climate change policies seem to have attained social significance and the consequences for local public policy making. Firstly it considers the crisis climate change presents for material conditions and ideals of justice and rights in most African cities, and the mitigation and adaptation policy ideas which have emerged out of these crises. This chapter then goes on to explore the influence of global policy ideas for local public policy making. It concludes that climate change mitigation and adaptation

policy ideas initiated by exogenous institutions, present decision making challenges for planning cities, such as those in Ghana.

2.1 Climate change: a crisis of material conditions and ideals

The Oxford English Advanced Dictionary (2010) defines crisis as 'a time of great danger, difficulty or confusion when problems must be solved or important decisions must be made'. Pelling *et al.* (2012: 1) describe crisis as 'a point of instability in predominant structures, a precursor to impending threat but importantly also an opportunity for the consideration and emergence of alternatives'. The two definitions point to a crisis situation as conceptualised beyond a case of danger or instability to include a component for addressing the cause of the crisis. According to Harvey (1985:172) a crisis occurs at 'a particular conjecture in which the reproduction of capitalist society is in jeopardy'. The underlying assumption in this case suggests a situation of disequilibrium in a particular system within a specific period, thereby justifying efforts to bring that situation to a state of equilibrium. This new state may however not be the same as the original, prior to the crisis.

The State of African Cities (2010: 22) notes that climate change is one of the systemic shocks threatening cities with prospective unparalleled short to long term impacts. Systemic shock here is defined as the shocks that threaten the sustainability of a system as a whole and throw it into disequilibrium. Generally mega-cities are

viewed as ‘key engines of the global economy’(Corfee-Morlot *et al.*, 2009:14) and economic and technological nodes (Sassen, 2000; 2002). Negative externalities such as climate change impacts have the potential to decrease the returns of cities especially world and mega-cities and making them less competitive (Kamal-Chaoui and Robert, 2009). In view of the centralised role of world cities in the global production economic system, a phenomenon Sassen (2002:18) describes as the ‘centres of gravity’ for capital, climate change could be classified as one of the factors creating constraints in the production and flow of capital (Harvey, 2011). Whether the same can be said for African cities on the margin of a capitalist world system remains an unanswered question.

African cities, despite being classified as on the margin of world economic systems, have significance for the national, regional and global economic. Toulmin (2009) identifies that addressing climate change in cities is essential for the operation of thriving economies and therefore the exposure and vulnerability of African cities to climate risks poses detrimental consequences for their national economies. Not only are they considered significant in their national economies but for the regional context as well. For instance, Mombasa’s significance is seen in its role as the largest seaport to serve the landlocked countries of the East Africa region and recognised for its tourism significance (Awuor *et al.*, 2009). The same can be said of other African seaports such as Dar es Salaam,

Durban, Maputo, Cape Town, Rwanda, Lagos and Accra. A changing climate is perceived as a crisis manifesting in economic terms and labelled as 'the greatest market failure the world has seen'(Stern, 2007:viii). Beyond the crisis for capitalist mode of production, climate risks fundamentally pose environmental and development threats. It also demands urban political institutions change in how cities are planned and managed.

2.1.1 Environmental and development crisis

The IPCC (2007) report indicates that climate change and climate variability are threats to ecological systems and development, with present and projected consequences of global proportions on socio-economic development. A changing climate has been identified as a threat which is envisaged to exacerbate the already existing poor conditions of many of the urban areas, especially in Sub-Saharan African countries (UNHabitat, 2011). Paradoxically, urban areas in Africa are most affected, though their contributions to greenhouse gas emissions are significantly minimal (Douglas *et al.*, 2008: 187). There seems to be an increasing scholarly interest in African cities (climate resilient cities studies) shaped not exclusively by poverty and urban growth but by the spatial and social vulnerability of African cities to climate change. Cities by their nature concentrate people and infrastructure and increase the exposure of the inhabitants especially those low income populations and slum dwellers who account for 72% of the urban population (UN, 2007)

and have poor environmental and housing conditions as well as limited capacity to cope with the effects of the adverse weather brought about by climate change (Satterthwaite *et al.*, 2007b; UN, 2007; UN-Habitat, 2010; Willibanks *et al.*, 2007). Consequently climate change is recognised as a threat to the attempts to achieve the Millennium Development Goals (MDG) to reduce poverty by 2015, and will likely set back past and current development achievements (DFID, 2009; Stern, 2007; UNDP, 2007). Given this understanding one would expect African local government to be keen about the uptake of climate change policies. Why that is not always the case is the key theme of this research.

The vulnerability context of the majority of urban areas, particularly those in developing countries, and especially Sub-Saharan Africa, has been the basis on which calls for an urban agenda has been pursued. Simon (2010) provides two dimensions to the vulnerability of African cities: spatial or geographic and social dimensions. These are the two areas usually highlighted as rationale for addressing climate change in developing cities (Satterthwaite *et al.*, 2007b). Current and future impacts of climate change are one of the challenges facing growth and poverty reduction in African cities against the backdrop of already existing challenges of rapid urbanisation and deficiency in accompanying infrastructure. Urbanisation is a phenomenon occurring on a global scale and currently half of the world's population live in urban areas. About 70

% of the population in Europe, North America and Latin America live in urban areas though there are variations among and across countries in the different continents. On the other hand, Africa and Asia's urban population constitutes averagely 40 % and 38 % of its total population, respectively, thereby, classifying Africa as one of the fastest growing areas in the world (UN-Habitat, 2008a-b). UN-Habitat (2008) estimated that in 2007, 38.70 % of the African population lived in urban areas. The projections for 2030 indicate that with an average annual rate of 3.31 %, African urban population shall increase from 373.372 million in 2007 to 759.4 million in 2030 and 1.2 billion by 2050. This increasing urban population coupled with the impacts of climate change would require different ways of managing the cities of developing countries.

Future growth, the UN-Habitat (2008) report continues, will be concentrated in the small and intermediate urban areas: although the absolute numbers in big cities will be significant the growth rates in the smaller towns will be higher. However another study by UN-Habitat (2008/2009) also indicates that some cities in Africa are experiencing falling population due possibly to wars, disasters or civil conflicts. Another phenomenon has been urban-rural migration which has been identified as one of the future drivers in the shrinking of some African cities (Potts, 1995). On the whole however, it is widely accepted that Africa's cities are projected to experience increased population. In addition to this, climate change

has been identified as an additional threat which is envisaged to exacerbate the already existing poor conditions of many of these urban areas. The increased vulnerability of these urban areas to the effects of extreme weather caused by climate change or natural climatic variation is brought about by the location of most of the major urban areas along the coastal zones, which are exposed to increased sea level rise. It is worth noting that minimal policy attention is given to urban areas which are located inland (Satterthwaite *et al.*, 2007a; UN, 2007). These experience frequent droughts and health concerns related to excessive heat associated with climate change. It is clear from the preceding discussion that climate change presents contextual impacts and challenges for the physical development and socio-economic dimensions of urban settlements, as well as urban political institutions of these rapidly growing urban areas.

The connection between climate change and urban livelihoods in Sub-Saharan African countries continues to receive substantial scholarly attention, highlighting the vulnerability of majority of urban areas in Sub-Saharan Africa to the impacts of climate-related disasters (Awuor *et al.*, 2009; Dossou and Glehouenou-Dossou, 2009; Holgate, 2007; Parnell and Walawege, 2011; Satterthwaite *et al.*, 2007b; Simon, 2006; Simon, 2010; Toulmin, 2009; UN-Habitat, 2010; UN-Habitat, 2011). In addition these studies have been skewed towards the governance processes required to shape policy

on climate change while overlooking the structures and powers which grant these governance processes meaning. Particularly of interest for this research are the institutional dimensions and how they affect policy adoption.

2.1.2 Institutions shape climate risks and adoption of policy ideas

For this study, and in line with North (1991:97) , 'institutions' are defined as ' humanly devised constraints that structure political, economic and social interaction'. North (1990:3) highlights that the essence of institutions for society is to 'reduce uncertainty by providing a structure to everyday life'. It is essential to note that some distinguish between institutions and organisations, though these terms tend to be used interchangeably (IFAD, 2008). Uphoff (1992:3) draws a distinction between these two concepts,

> 'An institution is a complex of norms and behaviours that persists over time by serving some socially valued purpose, while an organisation is a structure of recognised and accepted roles'.

Though the two concepts of organisations and institutions may appear varied there is an interaction between the two. McCarthy *et al.*(2011) suggest that globalisation and the resultant environment have created a blurring of the boundaries between organisations and institutions for firms. IFAD (2008:13) captures the interaction and states that 'institutions set the parameters – the ground rules, as it were – and organizations mediate, comply, enforce, manipulate,

violate, embody and seek to influence or change them'. For the purposes of this study institutions and organisations for cities are also assumed to operate on different levels of reality as specified in critical realist thinking (Bhaskar, 2008). So institutions are the underlying structures whilst organisations are the mechanisms that drive operations in managing cities.

Earlier definitions suggest that institutions operate as behavioural constraints: the compulsion and restriction of freedom of individuals or entities bound by the institutions to abide by the rules of the game (Grafstein, 1988). The deterministic characteristic ascribed to institutions in the earlier definition underplays the rational choice argument[2] of a section of institutionalists (Kingston and Caballero, 2009; Lowndes, 2001; Peters, 2000). To the rational choice institutionalists, institutions are conceived as malleable, with the possibility of adaptation in the process of institutional evolution, to suit the interests of individuals or reject out rightly the rules of the game. In contrast this assertion is downplayed by traditional institutionalists who maintain that institutions still exhibit features of a 'mysterious entity hovering above us all' (Grafstein, 1988:578). In addition the new institutionalism concept propagated by March and Olsen (1984:738) insists that despite the importance of the social context and motives of individual actors there exists a more

[2] Rational choice scholars emphasise utility maximisation by individuals or actors engaging and interacting with the institution whilst having their own preferences, interests and norms

autonomous role for political institutions. Moreover it would be difficult analytically to separate the agency from political institutions bearing in mind that these are humanly generated, planned and devised (Butler, 1983; North, 1990).

When these ideas are translated to the study focus, the linkage between urban political institutions and climate change resilience appears to have been understudied. This is despite the claim in various studies on the significance of local institutions in defining vulnerability and shaping climate change policy responses (Agrawal, 2010). A number of studies highlight the significance of institutions as playing an influential role in shaping rural social vulnerabilities to climate change related impacts. For instance, Adger (1999) recognised that local institutions are a potential causal factor of social vulnerability to climate change in coastal rural Vietnam, whilst Ortega-Pacheco and Manzano-Torres (2009:1) consider institutions an obstacle to rural Ecuadorian landowners' ability to participate effectively in the international carbon market.

On the other hand these scholars emphasize the role of institutions as facilitators of resilience and increased adaptation to climate extremes. The institutional dimension is considered relevant due to the key role it tends to play in shaping interventions and outcomes as well as creating enabling environments for climate disaster risk reduction and urban resilience. Hallie (2005) concludes that in

addition to shaping climate risks, institutional changes made a significant impact on influencing livelihood strategies of farmers in the Tlaxcala-Puebla valley basin in western Mexico. Furthermore the World Development Report (WDR, 2010) highlights the importance of institutions in attaining successful outcomes of climate change policy responses particularly due to the high propensity for institutional inertia when faced with the need to change.

In view of the complex nature of addressing climate change, a change in the rules and norms of local government institutions is required (Sanchez-Rodriguez *et al.*, 2008). Change is therefore an unavoidable challenge political institutions will have to deal with in the wake of climate change impacts. Addressing institutions in urban governance related climate change would require conceptualising managing cities beyond the 'processes of private-public resource mobilisation' (Pierre, 1999:373). Boko *et al.*(2007) suggested that, despite the important role institutions are playing in ensuring a framework is available for planned and sustained responses to climate risks, 'the institutional dimensions of global climate change are some of the least studied and worst understood facets' (Evans and Steven, 2009: 2). Few scholars have addressed the institutional dimension on climate change even at the global scale (Evans and Steven, 2009; Young, 1995; Young, 2002). Similarly the understudied institutional dimension is reflected at the sub national urban level as well. This is an occurrence not new to

urban studies (Lowndes, 2001; Pierre, 1999). The implication of climate change related disasters for urban political institutions in sub-Saharan African cities likewise has received relatively little scholarly attention. This study will attempt to contribute to the gap in literature on the institutional and organisational aspects of planning for climate change in Sub-Saharan African cities by focussing on determinants of climate change policy adoption by urban local governments. The institutional change dimensions associated with climate change presents to city governments

2.1.3 Climate injustice: human rights dimensions

Beyond the developmental and institutional dimensions as a rationale for investigating city policy responses, climate change has been recognised as an ethical and moral crisis (Adger, 2006), that of equity, justice and human rights. The ethical dimensions of climate change are also highlighted in the UNDP report (UNDP, 2007:111) which asserts that climate change presents questions on 'justice and human rights'. Wolfgang (2006) stressed that the process of internalisation of benefits and externalisation of costs in resource usage brings on an environmental injustice. As a result the risks posed by climate change create 'winners and losers' in three areas: human rights, climate impacts and intergenerational injustice.

No country is immune to climate change impacts (WDR, 2010). Yet developing countries, especially least developed countries are

disproportionately affected due to the limited adaptive capacity and geophysical exposure (UN, 1998). The unequal distribution of climate-related hazards and risks, as against the level of carbon emissions, has been classified as a human rights concern (UNDP, 2007). In general there appears to be a correlation between carbon emissions and climate risks impacts, and the social impacts of climate-related hazards. `Climate risks have human rights dimensions. The United Nations adopted a resolution on Human rights and climate change. The resolution reiterates a concern that 'climate change poses an immediate and far reaching threat to people and communities around the world and has adverse implications for full enjoyment of human rights' (UN, 2011c, 1). The impacts of climate-related disasters on societies have the potential to contribute significantly to the violation of human rights[3]. Climate change presents additional challenges for city governments to ensure citizens' rights are protected (International Council on Human Rights Policy2005). It remains to be explored whether protecting human development rights is a sufficient driver for urban local governments to adopt climate change policies.

The concerns for human rights dimensions of climate appear to be rooted in the overarching Declaration of Human Rights (UN, 1948) and the Resolution of the Right to Development (UN, 1986).

[3] Life, adequate food, highest attainable standard of health, adequate housing, self-determination and safe drinking water and sanitation (UN, 2011b).

Individual and collective human rights to self-determination and development as spelled out in United Nations declarations (UN, 1948; UN, 1986; UN, 2011c) are said to be violated by the impacts of climate-related hazards. Development is defined as

> ‘ a comprehensive economic, social and political process which aims at the constant improvement of the well-being of the entire population and of all individuals on the basis of the active, free and meaningful participation in development and in the fair distribution of benefits resulting therefrom’(UN, 1986: preamble para 2).

The impacts of a changing climate, interacting with already existing inequalities and development deficiencies, create conditions which tend to entrench and perpetuate the violation of human rights to water, sanitation and self-determination (Caney, 2010; Humphrey, 2010). Though climate change can be considered a crisis of human rights to development , developing countries (particularly African countries generally) appear to be sceptical of or even reject climate change policy and technological solutions ‘which come at the expense of their development’ (Baer *et al.*, 2008: 4).

Two main points could be drawn from the preceding discussion. Firstly, climate change, in addition to an increasing urban population and already existing environmental constraints, presents a threat to the development of African cities, their political institutions and human rights. Therefore political institutions are expected to consider strategies to address these concerns whilst protecting the

rights of their citizens. Secondly, though climate change has been considered a threat to development, institutions and human rights in cities, it creates 'an opportunity for the consideration and emergence of alternatives' (Pelling *et al.*, 2012: 1). The 'alternatives' in this context are the policy ideas that urban local governments would adopt for planning and managing their cities.

2.1.4 A crisis compelling city government's policy response

The adverse impacts of climate change are perceived as severe even to the point of an impending crisis, thereby classifying climate change as an issue demanding policy attention (ActionAid, 2006; Parry *et al.*, 2007; Satterthwaite *et al.*, 2007b; Toulmin, 2009; UN, 1992; UNDP, 2007; WDR, 2010). The assertions on the severity of the impacts of climate change are based on models and projections which have a degree of probability and uncertainty to it. Uncertainty, on the other hand, is not a reason for non-responsiveness to this threat, as enshrined in the precautionary principle 'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation' (UNCED, 1992 Principle 15). The severity concept may also be considered from a spatial dimension, with urban areas, particularly in Sub-Saharan Africa, likely to experience adverse effects (Satterthwaite *et al.*, 2007b; Toulmin, 2009; UN-Habitat, 2010).

The language of fear and catastrophe has been widely used to communicate the risks of climate change with the view of changing behaviour in society. Hulme (2006) states that 'It seems that mere climate change was not going to be bad enough and so now it must be catastrophic to be worth of attention'. The use of such language repertoire may be seen as sensationalist, alarmist and at times inconsistent with science (Ereaut and Segnit, 2006; Michaels, 2004; Michaels, 2005; Michaels and Balling, 2000). Risbey (2008) considers that this approach is considered suitable in pro-alarming circles for communicating the scientific nature of the problem. The use of such 'psychological amplifiers' is critical in forming public perception of risks and influencing political, economic and social responses (Leiserowitz, 2007). However, the crisis of climate change has been widely employed in justifying urban strategies and policies, gaining more credibility with publications on the state of cities with regards to climate change (UN-Habitat, 2008a-a; UN-Habitat, 2010; World Bank, 2010a).

Geophysical vulnerability, social sensitivity as well as negative impacts of climate change on socio-economic activities and population have been pivotal in the drive for public policy change regarding climate change adaptation in urban areas. The perceived negative impacts have been the fundamental rationale for these policies and strategies in developed countries, but also in some developing counties as well. The City of Cape Town (2006) and

Durban (2006) emphasise to a larger extent these negative outcomes. However it is possible that the 'horror scenarios of climate change' (Eckert and Waibel, 2009) are not enough impetus for change to begin. The use of 'fear' language may not be enough to cause social change. Risbey (2008) suggested that fear on its own is a poor motivator for change and for a response there have to be other available alternatives accessible to the public. The language of fear and catastrophe is also viewed as an ever-weakening vehicle for effective communication (Hulme, 2006). Other researchers also indicate that this could lead to a sense of resigned fate (Leiserowitz, 2007) or an implicit counsel of despair that creates a sense of distance from the issue (Ereaut and Segnit, 2006). Despite the scepticism on the use of catastrophic language, this does not in any way diminish the various degrees of vulnerability to the impacts of a changing climate. Past and anticipated impacts continue to be utilised as justification for policy action and a place on the public agenda of cities. The extent to which such historical impacts have shaped urban climate change policies in countries such as Ghana can be examined. Also whether the perception of crisis and/or stewardship guarantees climate change policy adoption by policy makers remains to be investigated, by examining urban local governments in Ghana.

2.2 The way out of the climate change crisis: mitigation and adaptation policy ideas

Policy ideas for addressing environmental concerns have drawn inspiration from various perspectives referred to as 'a seemingly unmanageable avalanche of conflicting information and analysis' (Clapp and Dauvergne, 2005: 3). The United Nations has advocated for two dominant pathways as response measures to the threat of a change in climate, namely adaptation[4] and mitigating greenhouse gas emission[5] (UN, 1992; UN, 1998). Though the two approaches have long been framed in scientific and policy arenas as different aspects of addressing climate change, these have been argued to be considered as interrelated concepts (Biesbroek *et al.*, 2009; Pizarro, 2009).

The IPCC report (2007) notes that adaptation and mitigation are related in the following different ways. Adaptation action has consequences for mitigation. Mitigation action impacts adaption because of the trade-off or synergies between adaptation and mitigation and other processes that have consequences for adaptation and mitigation (Klein *et al.*, 2007). Despite the advocacy for interrelation between the two concepts it is essential to understand that the two response approaches are rooted in separate

[4] Adaptation - Adjustments of ecosystems and human systems in order to limit the adverse impacts

[5] Mitigation deals with human attempts at reducing or at best stabilising emission levels of greenhouse gases

philosophical/ theoretical disciplines and could be a possible explanation for the persistent dichotomy between adaptation and mitigation. Spatial planning is considered a potential tool for creating synergy between mitigation and adaptation (Wilson and Piper, 2010). The extent to which this dichotomy is manifested when urban governments in Africa adopt climate change policies is yet to be explored.

Earlier discussion would suggest that in the face of climate crisis, policy ideas diffusing are of relevance to mitigation and adaptation strategies. In view of the climate as a phenomenon framed in physical and cultural terms (Hulme, 2009), a change in climate also conveys associated framed ideologies. Among these, particular reference would be made to two main ideas. Firstly the ideas are related to the transfer of principles of a green economy and commoditisation of carbon. Secondly, ideas from an environmental philosophical perspective emphasise man's pursuit to control nature through adapting human systems and infrastructure.

2.2.1 Mitigation: Adopting green growth policies

Strategies for reducing greenhouse gases have been proposed from both sides of the divide. Dobson (1995) identified that strategies for addressing environmental concerns are rooted in two ideological stands: managerial environmentalism and ecology. The variants of an environmental crisis consider radical approaches with demands

for an overhaul of social and economic lifestyles. Measures at addressing climate change, deemed a consequence of 'market failure', have turned back to the market for approaches to solve the problem. Stern (2007:viii) suggests policy elements for responding to global climate change: 'pricing of carbon implemented through tax trading or regulation, support innovation and the deployment of low-carbon technologies and remove barriers to energy efficiency, intensive public education'. The market solution to climate change is reiterated by the IPCC chairman, Dr Rajenda Pachauri. During the release of the IPCC report 2013, Dr Pachauri was reported to be supporting stronger market interventions in pricing carbon as a means of stabilising greenhouse gas emissions (Bawden, 2013).

With the commoditisation of carbon emissions has emerged a system of accounting, marketing and exchange Consequently the UNFCCC has developed reporting guidelines for annual greenhouse gas inventories by Annex 1 party countries[6] in six areas[7]. The CDM and commoditisation of carbon emissions has been described as the 'default international approach to the climate crisis' (Lohmann, 2012). Though African countries have contributed relatively less to carbon emissions, few city governments such as those of Johannesburg and Cape Town (Economist Intelligence Unit2011; Cape Town, 2006), Lagos (AfDB-OECD, 2013) and Durban are

[6] 24 OECD countries, European Union and 14 economies in transition
[7] Energy, Industrial processes, Solvents, Agriculture, LULUCF, Waste

noted to have adopted measures to reduce their carbon footprint. The focus of these reports on major cities in Africa overlooks the actions of less populous cities and their activities on climate change. The determinants of adopting climate change policies by these cities are less known, a gap this research intends to fill by investigating three cities, a major city (Accra), and Kumasi and Tamale, two less populous urban areas.

2.2.2 Planned adaptation: building climate resilience and climate risk management

Adaptation of natural and human systems is a concept with various definitions. The concept of adaptation has its origin in the natural sciences, particularly those derived from Darwin's theory of evolution natural species (Smit and Wandel, 2006) and has been applied to conceptualise the relationship between human systems and stimuli changes in their environment. In the context of human systems' relation to climate change, adaptation 'usually refers to a process, action or outcome in a system (household, community, group, sector, region, country) in order for the system to better cope with, manage or adjust to some changing condition, stress, hazard, risk or opportunity' (Smit and Wandel, 2006:282). According to Smit and Pilifosova (2001:879) adaptation denotes 'adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts'. Adaptation is referred to as a 'process by which individuals, communities and

countries seek to cope with the consequences of climate change including variability' (Burton *et al.*, 2004:1).

A widely cited definition of adaptation has been that of the IPCC as, 'adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities'(Parry *et al.,* 2007:869). The definitions take into account that adaptation manifests as anticipatory, planned and autonomous adaptation and by inference actual or expected climatic stimuli have the potential to disrupt existing patterns of human and natural systems. These adjustments are therefore required for the continuous existence and operation of human systems. How are these decisions to adapt to climate variability or change determined? Inferences from the definitions suggest that in essence adaptation entails the 'adjustments' and 'coping' strategies developed in response to or in anticipation of climatic changes. Fundamentally human systems adaptation, as a process, action or outcome, has been captured in climate change definitions as conscious decision making either individually or/and as a collective entity.

Autonomous adaptation[8] in its basic form is not a new concept in anthropology and other disciplines (Mercer, 2010; UNDP, 2010).

[8] Autonomous or spontaneous adaptation is referred to as ' adaptation that does not constitute a conscious response to climatic stimuli but is triggered by ecological changes in natural systems and by market or welfare changes in human systems'(Parry *et al.*, 2007).

Within the climate change context, autonomous adaptation has been observed in Kenya by small holder farmers responding to drought conditions by revising employment (Downing *et al.*, 1989). Within the urban context, an Action Aid (2006) report on flooding and the urban poor's responses in six African cities[9] also identifies individual coping strategies employed during the flooding season. These strategies are taken in anticipation of or in reaction to flooding incidents. However these individual coping strategies, though essential, are considered not adequate to reduce vulnerability and therefore planned adaptation measures, individual and collective in society, are supported (Adger *et al.*, 2007; Smit and Pilifosova, 2001; Smit and Wandel, 2006; UNDP, 2010).

Planned adaptation is referred to as 'adaptation that is the result of a deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state' (Parry *et al.*, 2007). Mainstreaming planned adaptation in development plans has been widely advocated in climate change policy literature (Burton *et al.*, 2004; Huq and Ayers, 2008; Huq and Reid, 2004; WRI, 2011). Yet the spread of the concept of climate change planned adaptation has been criticised as top-down compared to disaster risk reduction (Mercer, 2010). Scholars such as Thomsen *et al.* (2012) suggest that

[9] Accra (Ghana),Kampala (Uganda),Nairobi (Kenya),Maputo (Mozambique),Lagos (Nigeria),Freetown (Sierra Leone)

some adaptation initiatives could be termed as manipulative since these tend to infringe on other systems, human or natural. For instance Thomsen et al. (2012), based on a study in Noosa Main Beach, Queensland, suggests that systems are dynamic and complex to adequately adapt. Consequently short term adaptation measures such as shifting benches and putting up sea defences are appealing. However these interventions, with the aim to adapt, tend to manipulate ecological systems and lead to long term vulnerability and maladaptation for other systems. Despite the limitations and criticisms of adaptation, planning and mainstreaming in development planning appears to be widely accepted as a policy idea for addressing the impacts of climate change. Adaptation to climate change merging with disaster risk discipline seems to have created a hybrid which seeks to building resilience whilst managing the risks and loses adverse weather conditions present. The trend of studies on policy dimension of climate change adaptation appears to be evolving from vulnerability assessments to include management approaches for addressing risks that climate change poses for development. Climate risk management refers to managing risks presented by current and projected climate change and variability in order to increase adaptive capacity.

Climate change presents new challenges in decision making whereby there is a requirement for different management skills, skills which involve an integration and synthesis of scientific climate

knowledge in policy decision making. In the face of climate change threats, traditional management skills may no longer be enough to address climate change adaptation in decision making (Brewer, 1995). Incorporating climate change adaptation in decision-making for urban development presents challenges for current models of urban management and calls for the adoption of a new approach, a climate risk management approach. The World Bank noted that climate risk management is seldom, if ever, considered, as part of core considerations when drawing up plans and development policies (World Bank, 2006) though initiatives are being taken by different countries to integrate the concept of adaptation in development planning.

Integrating climate change adaptation using a risk management approach requires incorporating uncertainties about climate change feedback effects, complexities regarding time frames and intergenerational impacts as well as uncertainties due to irreversibility associated with climate change (Choucri, 1993). This therefore places climate change adaptation considerations in the category of a new programme, a policy innovation, which is a 'new challenge' for many governments especially in Sub-Saharan Africa (OECD, 2007). This research will therefore examine how urban governments in Ghana have responded to the new challenge of integrating climate change adaptation and a risk management approach to planning and managing cities. Planned adaptation has

been promoted as a key approach to addressing climate change and increasing resilience to the hazards of a changing climate. Yet climate-related risks for livelihoods and planning for such is hardly a new concept. Addressing climate-related risks in cities has been captured in disaster risk reduction literature (Kreimer *et al.*, 2003; Sanderson, 2000) and particularly in international community efforts, primarily through the United Nations Office for Disaster Reduction (UNISDR) and the UN-Habitat. The World Disaster report (International Federation of Red Cross and Red Crescent, 2010) focused on the urban context. It is clear that there are differences in origin, approach and perspectives of climate change adaptation and disaster risk reduction, as well as opportunities for convergence (Solecki *et al.*, 2011; Venton and La Trobe, 2008: 10). Mercer (2010: 252) states that both disciplines share more similarities than differences, and the difference primarily exists in the 'political prominence and recognition that climate change receives internationally'. Enhancing adaptive capacity and building resilience appears to be a common thread connecting CCA and DRR (Solecki *et al.*, 2011 : 137; Turnbull *et al.*, 2013; Wamsler, 2014). Local government and communities familiarity with disaster risk reduction strategies is considered an entry point for introduction of climate change adaptation policies (UNISDR, 2008). The extent to which synergy between CCA and DRR policies has manifested in Ghana will be presented in Chapter 6 and 7.

Carbon trading, adaptation planning and climate risk management tools have been the dominant policy ideas being promoted for addressing climate change and its impacts. Despite criticisms levelled against carbon markets (Carbello *et al.*, 2013; Storm, 2009) adaptation (Thomsen *et al.*, 2012) and limitations of the concept of resilience (Bene *et al.*, 2012) these ideas continue to be 'the default international approach to the climate crisis' (Lohmann, 2012). Is the rise of climate change policy ideas a sufficient catalyst for social change, to mitigate the impacts of climate change? Cornforth (1962: 82) argues to the contrary that the rise of new ideas though necessary are insufficient for social change unless the 'source of its social influence must always be explained'. The attainment of a policy ideas' social influence begins through the work of social actors who act as carriers of the policy idea and agents of change.

Yet ideas do not operate in a vacuum, they require agents for diffusion (Sorensen, 2010: 120). United Nations Human Settlements report (2009: 51) stated that planning ideas spread through the conduits such as colonial governments, educational and scientific institutions, professional associations and international development agencies and consultancies. These agents act as a 'conduit' for the flow of innovations from the change agency to the client. The use of 'conduits' suggests these agents are simply means of transmissions. These tend to be more than transmission systems and assume the

role of change agents. The importance of agents in the diffusion of innovations has been studied by Rogers (2003: 336) , who asserts that the 'chasm' between a resource centre and the client system necessitates the action of agents. Likewise with regards to climate change the seeming chasm between knowledge and financial resource centres and the potential clients necessitates change agents. The agents and mechanisms through which climate change policies have diffused from global institutions to local governments in Ghana is addressed in Chapter 7.

2.2.3 Complexities of public policy making in the face of global climate change

Political scientists have recognised that in the face of globalisation and global policy agendas the state's legitimate authority in regards to policy making has been weakened and power redistributed to other transnational and local actor groups in society (Sorensen, 2004; Strange, 1996). Consequently it implies that governments seemingly have less autonomy in deciding the contents of local agenda for policy decision making. However, despite the interaction of global and local policy decision making arenas specified by globalisation the power of implementation continues to rest to a large extent with the government formulating the policy (Parsons, 1995). Consequently climate change policies present a challenge for conceptualising public policy making. This is particularly so when climate policy making presents public concerns that transcend

immediate contexts and contemporary issues requiring capturing future generation concerns (Page, 1999; Simon, 2007). Moreover it would appear from the definitions of public policies (Anderson, 1979; Hill, 2013; Parsons, 1995) that these tend to assume an instrumental role, a tool utilised by governments for meeting public needs. The policy itself is not the goal but only a means to an expected objective. It is essential to note that policies tend to have symbolic characteristics (Edelman, 1993). The instrumental and symbolic characteristics of policy draw attention to policy as an output of the decision making process in a political system and an inducement for members support (Easton, 1957: 395). Policy is then presented to members as written documents or as a political announcement and adopts a language that could be prescriptive, guiding, coercive, and persuasive or for mobilisation.

Climate has been classified as a global public good and the decision making efforts of all nation states are crucial in defining effective action to reduce greenhouse gas emissions and increase resilience to climate (WDR, 2010; WRI, 2011). The global nature of the problem necessitates 'collective, global action' by policy decision making actors at all levels of government, private and public organisations (IPCC, 2001). References were made in preceding discussions (see sections 2.1.1 to 2.1.3) to emphasise the environmental, development impacts of climate change and, for the purposes of this study, the decision making implications for government public policy making.

The immediate sections revisited the decision making process in the wake of the policy demands placed on urban governments to include climate change concerns in development plans by national government and international institutions. It considered what implications the novel policy has for traditional decision making approaches in planning and managing cities.

2.3 Conclusion: An exogenous idea to local urban governments

This chapter sought to explore the different concepts on the emergence and diffusion of novel policy ideas in order to address the concerns of a changing climate for African cities. It appears that the literature on climate change policy is widely supportive of the perspective that material conditions have been significant in shaping the emergence of climate change ideas on the international political scene. A change in climate is likely to impact not only ecological systems but also manifests as a crisis for the capitalist mode of production, institutions and justice. The framing of the changing climate as various crises has had implications for the forms which policy ideas take. This chapter also emphasised hypothetically various agents and channels for diffusing novel policy ideas to city governments in sub-Saharan Africa and the key role they continue to play in disseminating climate change.

The above indicates that policy ideas for addressing climate change are exogenously generated and have diffused to local governments

through various agents of change. Climate change as a policy idea has emerged and been consolidated in institutional arenas beyond the scope of most local governments in sub-Saharan Africa. The agents who then carry these ideas are predominantly organisations external to local government systems. Climate change knowledge and policy ideas are emerging and being diffused from a core group of organisations. This sets up a social structure in the production of climate change policies characterised by a differences in relation to knowledge- means of production. Consequently, a few national governments and organisations in Africa, to a large extent, ‘own’ the means of production for climate change policies and the related diffusion channels. This implies that a degree of domination or control over knowledge and resources for production prevails whilst other governments tend to be on the receiving end of the diffusion process. Despite the efforts at diffusing ideas not all ideas are adopted and even when considered by urban governments: they tend to be reinvented to adapt to the context.

3 Adopting Climate Change Policies: A Conceptual Framework

The previous chapter presented the rationale for this research and established that policy ideas travel and various actors serve as conduits and agents for institutional and organisational change in planning for cities in developing countries. There remains to explore how local governments respond when they encounter new policy ideas, such as those for planning and managing African cities in a changing climate. Based on a case study of urban sustainability and compact cities ideas in Japan, Sorensen (2010:133) suggests that exogenously originated ideas 'do not always have the impact that their originators intended'. Healey and Upton (2010) present a plethora of cases demonstrating the mixed response and outputs that various international planning ideas receive when they reach urban governments and interact with local contexts and varying interests. In essence, the local context tends to be critical for diffusion of ideas, particularly the adoption (or otherwise). The question remains to be explored, as to what factors determine policy responses to climate change by local governments in each context.

3.1 Justifying an integrated approach to conceptualising policy adoption

The spread and adoption of new ideas or technological innovations has been conceptualised in various disciplines by means of different

diffusion models. Conceptual frameworks have been applied in the study of the spread of technological innovations (Rogers, 2003), spatial movement of population, diseases, goods (Haggett, 2001) and policy innovations (Berry and Berry, 1999) . A common feature of most of these studies is the interpretive approach which highlights the processes of diffusion and places emphasis on attributes of the innovation and the characteristics of innovators as prime drivers of diffusion. For instance Rogers (2003) asserts that the perceived attributes of a technological innovation such as its relative advantage, compatibility, complexity, in addition to its triability and observability are essential in determining the adoption rate. Secondly, the type of innovation-decision making process, communication channels, the social system and the change agents' efforts all influence the rate of adoption; where rate of adoption is defined as relative speed with which an innovation is adopted by members of a social system. Similarly Haggett (2001) brings to light spatial diffusion models and how they were utilised in tracing the spread of diseases and agriculture subsidies. So far, in these discourses the focus has been to understand and interpret the diffusion process mainly as a correlation between a phenomenon and certain variables. Consequently this places emphasis on the processes of diffusion and not the 'why' of innovation adoption. Despite the critical role adopters' play in the diffusion process studies in geography and communication have paid limited attention

to why innovations are adopted. Arguably there is the need to explain adoption of the innovation in addition to efforts at striving to understand the processes of adoption.

This instance reawakens an existing debate about the purpose of science and in this case social science is the purpose to interpret or to explain? Elster (2007) argues that there is little separation between this interpretation approach and explanation of social phenomenon- to interpret is to explain. Therefore there is no methodological difference between interpreting and explaining a social phenomenon, as inherent in the quest for interpreting of the event in question is the explanation of its occurrence. Central to this position is the Weberian contention that causal explanations of social action would be achieved primarily through rational interpretation of the event (Ekström, 1992). Other scholars, however disagree and argue that interpreting and explaining a social phenomenon have to be analysed and perceived as different components of the same causal analysis process. One view is that scientific research strives to go beyond mere description to include an explanatory dimension (Hempel and Oppenheim, 1948). The methodological approach of description and interpretation events in an attempt to explain the occurrence of a social phenomenon lacks the capacity to be adequately termed 'explanations'. Hempel and Oppenheim (1948) argue that identifying mere correlation of events and facts inherent in interpretation lack predictive characteristics and do not subsume to

any general laws and therefore classified as incomplete explanatory arguments. Other criticism directed at the empiricist interpretive approach to explaining social action has originated from the philosophy realism particularly critical realism. Ekström (1992) notes for instance that explaining social action is a common interest of critical realists who view causes and causal powers of phenomenon not as the events or objects but effective and productive forces and laws which lie hidden beneath the sequence of events. Critical realist Roy Bhaskar has argued extensively on the inadequacy of the empiricist/ interpretive approach as to provide a logical explanation for social occurrences. The conjunction of events is not sufficient or even necessary for the establishment for scientific law and rationale of social action (Bhaskar, 1978; 2008;). Providing additional insight to the causation argument Outhwaite (1976) claims that the open nature of social systems does not permit causal analysis based on a conjunction of events which tends to be more applicable in closed systems. Open systems have been defined as a system 'where no constant conjunction of events prevail' characterised by ‘two or more mechanisms perhaps of radically different kinds combine to produce effect; we do not know ex ante which mechanisms will actually be at work events are not deductively predictive (Bhaskar, 2008:119). Despite a number of realism scholars’ criticism and empiricists support for interpretive analysis some disciplines have adopted a stance whereby the

interpretive analysis and causal analysis are not opposed but interdependent (Ekström, 1992) and reasons for actions drawn from correlating events are perceived as containing causal powers. The question therefore remains to be answered whether such a methodological approach provides an adequate explanation for social actions; 'adequate' here refers to the tendency of causal explanations towards generality and predictive capacity.

Therefore this research presents an integrated theoretical framework on policy diffusion to investigate the determinants of policy responses to climate change in urban areas. By drawing on different disciplines, through literature review of international political economy, social and cognitive psychology as well as political science, the conceptual framework takes into account coercion, norm imitation, utility and emulation. The conceptual framework consists of sensitising concepts providing different possible explanatory concepts (Bowen, 2006; Hoonaard, 1997), in this case for the adoption of climate change policies by metropolitan governments in developing countries. The existing literature on policy innovation diffusion and adoption has skewed towards a voluntary cross-national argument, primarily that the desires for emulation, norm imitation and competition have driven the adoption of policy innovations initiated by either another country or state (Gilardi *et al.*, 2009a; Meseguer, 2005; Simmons and Elkins, 2004). Similarly, Berry and Berry (1990; 1999) draw on Mohr's theory of innovation

and contend that endogenous as well as regional determinants are critical in influencing the adoption of a policy innovation. In contrast, Eyestone (1977) presents another dimension indicating that the properties of the policy itself are a probable factor determining the propensity for a state to adopt. The cross national approach dominant in policy diffusion studies tends to miss an important link, international coercive factors, in explaining the propensity for adoption of a policy, particularly climate change adaptation. The global nature of climate change and the quest for international harmonisation and cooperation present theoretical and methodological challenges for the current approaches to policy diffusion theory. The existing literature on policy diffusion and adoption suggests that a single theoretical framework cannot account for explaining adoption or otherwise of a new policy. Therefore to avoid 'oversimplification and bias associated with dealing with diffusion theories in isolation' (Berry and Berry, 1999:192), an integrated conceptual framework consisting of four concepts is presented in the subsequent sections..

3.2 International financial organisations: conditionalities and pressure to adopt

International coercive factors as a driving force for the adoption of a policy innovation has been paid limited attention in diffusion theories probably due to its 'anti-liberal' nature (Simmons *et al.*, 2008). The international context matters. Some scholars argue that

globalisation and the internationalisation of environmental concerns in particular have to a large extent eroded sovereignty of the state as well as diffusion of authority to global institutions above (Hurrell, 1995; Strange, 1996). Consequently, these global institutions and the overt or subtle influence they wield through international coercion have been considered as an impetus for adoption of policy innovations by a number of researchers (Dobbin *et al.*, 2007; Henisz *et al.*, 2005; Simmons *et al.*, 2008; Weyland, 2005).

External pressure from international organisations has been identified as playing a contributory role in influencing the adoption of new policies. Weyland (2005) argues that in an era of globalisation, external factors, specifically pressure from international organisations contribute significantly to inducing countries to adopt new policies. This neo-institutional concept of coercive isomorphism is shared by other researchers as a probable factor explaining the spread of markets, economic liberalisation and democracy (Henisz *et al.*, 2005; Simmons *et al.*, 2006; Simmons *et al.*, 2008). The pressure to adopt economic liberalisation and policy reforms since the debt crisis is perceived as originating from powerful international, multilateral and bilateral organisations such as the International Monetary Fund (IMF), World Bank and World Trade Organisation (WTO). This takes various forms, subtle or overt, from direct conditionalities attached to lending facilities, to manipulating economic costs, monopolisation of expertise and

information and even through treaties on weaker states (Simmons *et al.*, 2008). Though these forms of coercion are applicable in different situations, diffusion literature highlights the application of conditionalities attached to lending facilities from multilateral and bilateral agencies, especially how these conditionalities act as a coercive factor commonly employed to induce adoption of new programmes in developing countries.

International financial institutes, such as the World Bank, have to a large extent been influential in financing national governments' initiatives for urban development projects in developing countries (Ramsamy, 2006; Zanetta, 2004). Mostly funded by donor countries, these multilateral institutions wield immense influence as providers of finance for development and disseminators of novel policy ideas, such as those related to climate change. International finance schemes for urban development and climate change are usually intended to work with national governments (Barry *et al.*, 2014: 14), which then set up funding streams for local government action. Consistent with international relations, municipal governments are regarded as non-state actors and therefore not directly accessible to funding from international financial institutions. Accessing the finance schemes usually requires conforming to attached conditionalities; a potential source of external pressure for recipients to adopt climate change mitigation and adaptation polices.

A major component of development aid has been conditionalities attached to development lending facilities, employed not only by IMF and World Bank loans but other donors such as the AfDB, EC, Paris Club and bilateral donors as well. Various donors have different operational definitions of 'conditionalities', yet the underlying principles remain the same across donor lending activities. Buira (2003) defines 'conditionalities' within the IMF context as the policies a member is expected to follow in order to secure access to the resources of the fund. From the World Bank's perspective 'it denotes the set of explicit conditions upon which the Bank disburses under development policy lending and are listed as legal conditions in the Bank's Loan Agreement' (World Bank, 2005). Conditionalities are justified on the grounds that it ensures that the assistance actually contributes to the country's development objective development effectiveness, and that the resources are used for the purposes intended.

However, these conditionalities have done more than ensure development effectiveness and accountability at the national level, the conditionalities adopted at the national level tend to transcend to the sub national level as well. Some authors have identified how some of these conditionalities, in particular structural adjustment programmes, have influenced the adoption of new policies at the urban level in some Sub-Saharan African countries. Though conditionalities attached to structural adjustment programmes (SAP)

were directly related to the national level policy making, the indirect impacts have influenced and reshaped the city in developing countries (Riddell, 1997).

Economic and governance conditionalities have been considered critical factor influencing the adoption of new policies either unwillingly or willingly by governments to serve their own agendas (Glennie, 2008). 'The beggar has no choice' argument drawn from dependency theory can be used to explain why governments unwillingly accept conditionalities. The peculiar economic condition of most developing countries and the ranking in a world system primarily segregated on economic grounds makes these conditionalities influential as a coercive factor. The weak negotiation power of most of these nations which seek financial aid as well as the inaccessibility to alternative sources of credit compels them to accept unfavourable conditions attached to credit which otherwise they would have rejected (Buira, 2003).

In addition overseas development aid continues to be a component of the gross national income of many developing countries, especially fragile countries. Since the 1950s development aid from multilateral and bilateral agencies to a large extent has been a significant component of the Gross National Income (GNI) of sub-Saharan African countries. For instance, World Development Indicators (World Bank, 2013) indicate that in 2011, Official

Development Assistance (ODA) constituted 53.6 % of the gross national income (GNI) of Liberia, 15.6 % for Gambia, 6.2 % for Cote D'Ivoire and 4.7 % for Ghana. Though the benefits of development aid are widely disputed (Fairman and Ross, 1996; Feeny, 2003; Glennie, 2008; Hallaert, 2010; Keohane and Levy, 1996; Tarp and Hjertholm, 2000) there have been direct impacts on economic, social and infrastructural development in recipient countries. In addition to direct impacts such as infrastructural development, explicit national level impacts could be observed in the adoption of new policies which are aimed at reforming institutions and transforming the macro economy (Glennie, 2008)

Climate change appears to be a major current concern for development lending agencies. In addressing this concern multilateral and bilateral agencies seek to include and mainstream climate change in development and policy lending. In the process of mainstreaming the primary aim is promoting reforms in policy and regulation to reduce green-house gas as well as reducing vulnerability in borrower countries (ADB, 2009; OECD, 2009; World Bank, 2006). Likewise the IMF considers environmental policies as a component of its programs where necessary. However such environmental reforms are applied as 'structural benchmarks' and not as conditionalities for accessing lending facilities since they

are considered not related to resolving balance of payment problems of borrower countries (Article 1 of IMF Articles of Agreement). Conditionalities attached to lending facilities seem to have been a factor inducing adoption of policy innovations by governments specifically in developing countries particularly trade liberalisation and good governance tenets.

It is worth noting, however, that the external influence is being experienced by both developed and developing countries. Smith (1976:69)rightly puts it when he states ‘it’s not only non-western units who suffer intruding events and processes’. The external pressure to adopt a policy through the mechanism of conditionalities attached to lending facilities may be considered to be intrusive, coercive and questions the ‘ownership’ criteria by donor partners. Criticism laid down against the coercive approach makes way for the introduction of seemingly less intrusive and more receptive approaches resting on the apparent need for technical expertise by most developing countries and initiated by the recipient nation.

The preceding section has highlighted that the conditionalities attached to development finance is a potential source of external pressure to national governments to adopt new policy ideas for urban areas. Therefore one can infer that if climate change policies for urban areas are conditionality for accessing development finance there is the potential for policy adoption by national governments.

This will be further investigated in the case of Ghana to determine the extent to which the urban context is a pressure point from international funding agencies.

3.3 Expected utility of climate change policy ideas: economic, political and ideological

The policy making process is replete with numerous issues of concern on four different agenda levels[10] (Birkland, 2010). Scott (2000) mentions that as it is not possible for individuals to achieve all of the various things that they want, they must also make choices, in relation to both their goals, and the means for attaining these goals. Faced with various collective public concerns, individuals and organisations adopt purely rational, calculative decision making processes based on expected utilities (Elster, 1986). Moreover organisations are motivated by the rewards and profits, as well as deterred by the costs of taking these actions. As Tversky and Kahneman (1986b: 125) state, 'when faced with a choice, a rational decision-maker will prefer the prospect that offers the highest expected utility'. It appears that underlying these theories is the Marxist approach to social change, the assumption that man as an 'economic being' is also rational (Simon, 1955). One could assume

[10] **Universe:** all possible ideas that could ever be advanced in any society, **Systemic:** Any issue, problem or idea that could possibly be considered by participants in the policy process provided that the idea does not fall outside well established social, political and ideological norms, **Institutional:** Issues at the time of policy making are being considered by a government, **Decision:** Items about to be acted on by government

that the potential utilities climate change policies would drive the adoption in development plans. The subsequent section draws on the policies of South African and Lagos city governments to identify the expected benefits of adopting climate change policies.

3.3.1 The economic benefits of adopting climate change policies

The economic benefits of adopting a climate change policy (as well as the economic costs of not responding) have been extensively dealt with in the influential report on the economics of climate change (Stern, 2007). These benefits, particularly the non-climate change related ones have been a critical factor justifying change policies and strategies by urban policy makers, addressing climate change is linked to the achieving of other economic goals. Cape Town (2006:6) municipality identifies the co-benefits as improved service delivery, financial stability in the city operations and improved air quality. Mokwena (2009: 16) also noted that adopting climate change policies by the City of Cape Town is beneficial for addressing domestic concerns of energy security and protecting biodiversity for tourism. Sea level rise is a major concern for metropolitan Lagos metropolis, a coastal city in Nigeria (French *et al.*, 1995). Adopting climate change strategy is considered by the Lagos State Government (Lagos, 2012) as a means of protecting populations living in informal settlements and affluent settlements, such as Lekki, Ikoyi and Victoria Island. Corfee-Morlot et al. (2009) and Hallegate et al. (2008) agree on the co-benefits to adopting

climate change policies in cities, such as raised urban air quality, lower congestion in cities, lower dependency on oil import and limit needs for costly and unsightly land filling. Though the economic, environmental benefits of adopting climate change resilient strategies are highlighted in these policies and strategies, they are framed as outcomes for 'public good'. Whether such economic and social benefits are adequate determinants to explain adoption of climate change policies by Ghanaian coastal and inland city governments would be explored further.

3.3.2 Political implications of adopting a policy idea

Political incentives accrued when adopting policies have been highlighted in the diffusion literature as a driving mechanism. Gilardi et al. (2009b) stress that in decision making, policy makers are interested in the political consequences of adopting a policy, particularly whether there are electoral rewards, sanctions or a back-lash ascribed to the new policy. The interest in the political consequences becomes more pronounced given the limited nature of the electoral cycle and policy makers tendency to seek for re-election after a term in office (Krause and Méndez, 2005). The propensity for a policy maker to adopt a new policy is closely related to the political consequences and search for electoral rewards as well as to its timing in the electoral cycle. In addition, the short electoral cycle makes it more attractive to adopt policies and programmes which could be executed within the term of office of politicians

unless long term programmes have other incentives to warrant their adoption.

However worthy of notice is that a policy would attract votes for politicians only when it has public interest and a preference for voters. The opinion of the public on climate change is shaped by three possible factors. EBRD (2011) identifies that there is a correlation between public knowledge and climate policy: levels of tertiary education, freedom of media as well as the level of vulnerability of the population are probable factors which shape public opinion and are a powerful driver of climate change adoption policy. Not much is known about the political incentives of adopting climate change policies in Sub-Saharan African cities, a gap this research intends to fill by investigating metropolitan governments in Ghana. The remaining section draws on literature from developed countries to emphasise the relations between political incentives and climate change policy adoption. Harrison (2007) argues, based on a comparative study of climate change policies in United States and Canada , that there was public support for addressing climate change in both countries. On the other hand, though there was quite substantial public support for ratification of the Kyoto Protocol in the United States (61% in January, 2001), the Bush administration repudiated the protocol whilst Canada ratified. The electoral incentive argument suggests that considering the relatively significant electoral support for ratification in both countries, U.S.

and Canada would have ratified the Kyoto Protocol. The result, however, seems to suggest that public opinion and electoral incentives in this context were not enough an impetus to drive adoption of a new policy.

In Sweden, the electoral loss of the Social Democratic Party (SAP) in 2010 was attributed to the extreme proposals for climate policy of the alliance partner the 'Greens' (Ladrech, 2011).

In contrast, the Australian Labour Party under Prime Minister Rudd's push for ratifying the Kyoto Protocol was 'in line with public opinion trends and voter frustrations with the tired Howard administration' (Cook, 2010: 82). This is in contrast to Howard, the former prime minister, who despite a level of public support was sceptical of adopting climate change policies. Policy action on climate change appears to be taking a plunge in Australia with the election of the conservative Liberal-National coalition in 2013 (Slezak, 2013). For instance, the decision to repeal the carbon tax could be a response to public discontent. This goes to emphasise that despite public support, policy makers may choose not to embark on adopting a policy. There are other political factors which influence the adoption of a policy innovation, such as ideology of politicians (Harrison, 2007).

3.3.3 Political ideological preferences

Ideology of a policy making body as a motivating factor for adoption of a new programme has been the focus of a few diffusion scholars. For instance Sugiyama (2008), in a study on social sector reforms in Brazil, asserted that leftist mayors were more likely to adopt new programmes on social reforms than their centralist or rightist counterparts primarily due to the leaning of such reforms towards their ideology on alleviating poverty and social exclusion. Similarly, Krause and Méndez (2005), based on evidence from a study of behaviour patterns of left wing and right wing incumbent political parties in 24 countries, suggest that 'right-wing parties exhibit a higher relative preference towards stabilising inflation than left-wing parties'. Hibbs (1977) and Alesina (1987) reiterate that the role of incumbent policy makers' ideology may be a determinant for inclination or repulsion towards policies which favour or counter the tenets of the ideology .

What makes ideology a significant issue in the policy decision making process? Slembeck (2003:132) suggests that 'the predominant aspect of ideology in a democracy is perhaps that it provides an anchor for making commitments that otherwise may not be credible'. Policy makers employ ideologies therefore to rally political support and resources and as a channel for 'legitimising a system and structure of power, status and privilege'. Climate change policy making has not been devoid of the influence of political

ideology of the government with the task of making a decision on responding to climate change. Since the release of the IPCC Assessment Reports 2001 and 2007, sustainable development has become the catch word in promoting adaptation strategies to reduce vulnerability to climate change (Huq and Ayers, 2008; Smit and Pilifosova, 2001). A significant pillar of Canada's response to climate change had been the support for sustainable development norms, an ideology that Bernstein (2002) terms 'liberal environmentalism'. Moreover sustainable development agendas embedded in some political ideologies are a possible channel to motivate the adoption of climate change policies since there is an available conceptual framework within which climate change adaptation measures could be integrated. There seems to be an inclination of certain political ideologies to bend towards environmental issues, including climate change.

Ladrech (2011) noted that in the last twenty years there has been a shift in the environmental protection tenets of the leftist western European Social Democratic parties and points to 'ideological development' as one of the probable reasons for the engagement of western European governments in climate change. A look at the United Kingdom (UK) political scene reinforces the ideological argument. The Liberal Democrats, Labour and Conservatives have portrayed different tendencies towards climate change in particular due to their political ideological stands on environmental issues

(Carter, 2007). Further to the overall ideology of parties, the personal preferences of individual champions may also influence the adoption of a policy innovation. In 2006 the move from 'cautious incrementalism' towards climate change by the UK Labour Party to rigorous legislation has been partly attributed to the personal devotion of the then Environment Secretary, David Milliband (Ladrech, 2011).

However there are indications, (particularly when considering intergenerational impacts) that addressing climate change is not the preserve or inclination of one political ideology, 'climate change itself cuts across the left-right ideological divide' (Ladrech, 2011:14). In addition the political regime of a country does not have to be a constrain action on climate change (EBRD, 2011). There is general consensus that the adoption of an environmental concern within a political ideology therefore tends to be dependent on the existing legal and institutional framework (Bernstein, 2002; EBRD, 2011; Ladrech, 2011). Such discussions highlight the role of ideology at the national scale decision-making by politicians. Considering that cities tend to operate within a multilevel system of government the role of a generalised political ideology is brought to question. Whether the political ideology of the elected political party or city governments is a probable determinant of adopting climate change policies in the context of Ghana would be examined.

3.4 Normative power status of policy ideas: Quest for legitimacy through adoption

The preceding section highlighted the perceived utility of policy ideas as a possible determinant for policy adoption. Though a probable determinant, it assumed that decision making is usually a rational, calculated process; which does not always turn out to be the case when normative factors are considered (Tversky and Kahneman, 1986a). There seems to be a clear distinction between the cognitive and emotive-compulsive aspects of decision making (Elster, 1989). This distinction may be complex to differentiate in collective action on addressing climate change, when the idea has been framed in both emotive and rational concepts (see chapter 2, section 2.1). DiMaggio and Powell (1983) stress that when a new policy attains normative status, governments are induced to adopt it in the quest for legitimacy and so as not to appear 'deviant'. Sikkink *et al.*(1999: 8) explain normative status, from a human rights perspective, 'human rights norms have a special status since they both prescribe rules for appropriate behaviour and help define identities'. So, an idea attains normative status when it is considered generally appropriate behaviour and assists in defining ones identity within a social group.

This tends to be more pronounced when the innovation has been made into a symbol of modernity or a normatively appropriate model for a social group (Weyland, 2005). Furthermore complying

with norms enhances social identity and status within the group. Social psychologists have argued that generally accepted norms in a group serve the purposes of influencing members behaviour (Cohen, 1965; Hogg and Vaughan, 2008; Smith, 1976) and as act a means of social control (Parsons, 1951). Though norms are considered as 'informal rules that groups adopt to regulate and regularise group member behaviour'(Feldman, 1984:47) and are not legal requirements, they hold enough authority to influence behaviour and induce conformity. In contrast to positivists' claims that deviant behaviour tends to be biologically and psychologically inherent (Aggleton, 1987), Merton (1938) attributes non conformity by units in a social group to pressure exerted by the nature of the social structure in which they operate. The point Merton (1938) raised is that social groups operate within widely accepted social and cultural norms, and as such ascribe positive value to such norms. In addition to this there are conventional institutional means by which these norms or goals are to be attained, '…every social group invariably couples its scale of desired ends with moral or institutional regulation of permissible and required procedures for attaining these ends' (Merton, 1938: 673). As a result members in a group may resort to responses of innovation, ritualism, retreatism or outright rebellion. The varying responses would suggest that other than conformity or outright rejection is not the only responses metropolitan governments would exhibit to climate change policies.

It would seem that addressing climate change has attained sufficient international normative power with a pressure towards global policy goal convergence on adaptation and mitigation. This normative power is established and reinforced by the institutionalisation of the channels for addressing climate change, primarily through international institutions such as the UNFCCC, whose role is to enforce and regulate the outcome of such policies and ensure compliance. Signatories to the convention on climate change are required to comply and cooperate in achieving the goals of the UNFCCC and Kyoto Protocol conventions (UN, 1992). The Protocol (UN, 1992: Articles 3.3) also requires all parties to 'take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects'. Though city governments are not direct participants in climate change international negotiations, and consequently may not subscribe to these articles in the UNFCCC.

A probable element which has elevated climate change responses to the status of an international norm for cities may be the issue of redeeming a dented image. Rochefort and Cobb (1994) stated that those being blamed for a problem are bound to do all they can to deflect incrimination. When stigmatised, a person responds, if possible, by correcting the objective basis of his failing (Geoffman, 1963). Cities have been considered as major emitters of greenhouse gases and primarily blamed for the effects. The Clinton Climate

Initiative states that of all GHG emissions 80% are from cities. Dodman and Satterthwaite (2009) dispute this figure and put it at between 30-40% from cities and state that this represents the emissions from cities and in their estimate did not consider 'urban centres too small to be considered cities'. This raises concerns as to the distinction that is usually made between cities and smaller urban areas in most urban studies as well as the limited policy attention given to smaller and intermediate urban areas in developing countries (Satterthwaite and Hardoy, 1986; Satthertwaite and Tacolli, 2003) in the light that these small urban areas in Africa are where urban growth is most concentrated (UN-Habitat, 2008). Investigating Tamale metropolitan government's response to climate change, presents an opportunity to study smaller urban areas which, compared to mega-cities, have likely contributed significantly less greenhouse gases.

In general, not all cities account directly for most of the greenhouse gas emissions. These emissions are from major industrialised cities with high energy consumption patterns whereas developing countries, comparatively, have contributed less (ADB, 2009; Dodman and Satterthwaite, 2009; UN-Habitat, 2008a). On the other hand, newly emerging economies such as China and India have been contributing significantly to the emissions (UN-Habitat, 2008a-a). This has been a source of concern and conflict during negotiations as was evident in most of the proceedings of the Conference of Parties

(COP) 15 in Copenhagen, December 2009. The blame for past emissions may be placed on industrialised cities, currently cities in both industrialised and newly emerging countries need to be considered when accounting for major emitters. In the case of metropolitan governments in Ghana, who like their counterparts in other African countries have clearly contributed relatively less to greenhouse gas emission, the extent to which climate change mitigation and adaptation policies are considered a norm to be internalised in city operations would be examined.

3.5 'Peer pressure': emulation and competition

When confronted with similar problems, a bold policy step taken by a country or local government catches the attention of neighbouring countries (Weyland, 2005) and prompts the emulation of such a policy. Rogers (2003) asserts that for some innovations particularly, preventive ones, the trial of the new idea by a 'peer' can act as a substitute for their own trial session of the innovation. In addition to the assertion that states emulate for the reasons of learning, competition and public pressure (Berry and Berry, 1999), bounded rationality, the uncertainty in decision making, holds a potential for explaining emulation.

Notably, geographical proximity appears to count in influencing a policy maker to emulate and adopt a new program or policy. Berry and Berry (1999:175) argued that states are influenced 'primarily by

those states that are geographically proximate' and more likely to ' learn from nearby states than from far away states due to the likelihood of sharing similar economic and social characteristics. A classic example is mentioned by Meseguer and Gilardi (2009), who suggest that policy makers in Latin America emulated the Chilean pension privatization scheme due to geographical proximity as well as its relevance to them. Diffusion studies have highlighted the role of emulation as a motivator for adopting a new policy. However, a look at the spread of hospital financing reforms in OECD countries (Gilardi *et al.*, 2009b) highlights the limitations of geographical proximity, particularly since policies in countries outside the region are emulated. Also, despite the fact that Cape Town, Durban and Johannesburg are within geographical proximity there exists no structured platform for sharing information or exchanging good practice on climate change (Carmin *et al.*, 2009), though there may possibly be informal forms of exchanging information on climate change policies. When applied in the context of Ghana, one can say that metropolitan governments are likely to adopt climate change policies when neighbouring cities have done so, and it is a model for learning and making the city more competitive.

Social proximity: The role of city government networks

Communication technology means that cities also interact with cities far beyond their geographical boundaries (Castells, 2010). In this

way there are systems of cities that may not be within geographical proximity but politically socialise through networks. 'Social proximity', as an alternative argument is raised. The influence of networks has created situations whereby proximity is not limited to geographical boundaries. Policy makers do not only look to emulate from countries or cities close to their geographical boundaries but also from those within social political boundaries. This therefore emphasises the assumption that political socialisation takes place within city networks and the learning process has the potential to influence the adoption of new programmes. There are increased opportunities for city officials to learn from each other whilst engaging in local government networks and sister-city partnerships.

Literature on climate change and cities seems to emphasise that participation in transnational city networks has been a major motivator for city governments to adopt a climate change adaptation policy. Transnational Municipal Networks (TMN) such as the International Council for Local Environmental Initiatives (ICLEI), C40, United Council for Local Governments (UCLG) have been perceived by some scholars as primarily networks mechanisms for their members on the global platform in promoting action on issues for which these networks were formed (Kern and Bulkeley, 2009). Admittedly, the increasing global attention to climate change in urban areas may also be attributed to the influence of transnational networks especially the ICLEI, UCLG, C40, and World Council of

Mayors. Numerous interventions and submissions have been made by Local Government and Municipal Authorities Constituency-LGMA (i.e. ICLEI and UCLG) to the Ad Hoc Working Groups (AWG) of the UNFCCC which seems to have achieved results.

One example of a transnational city government initiative is the ICLEI Cities for Climate Protection (CCP). The ICLEI-CCP was initiated in 1993 under the urban CO_2 reduction project and implemented in 14 cities across US, Europe and Canada. Under the five milestone process cities are required to measure their emissions, commit to reduction of their emission targets, plan their action, implement their local action climate plan and monitor. As at 2009, 1000 cities had joined the CCP campaign to reduce emissions and integrate climate change mitigation action in their city plans. Also adaptation tool kits have been developed by the ICLEI-CCP for local governments to aid in developing climate resilient policies. However, eleven African city governments, out of a total of 546 worldwide, are participants from Africa, all from South Africa. In examining responses from urban governments in Ghana, an opportunity presents to identify to what extent engaging (or not) in these networks promoted adopting climate change policies.

Figure 3.3 indicates that ICLEI generally is a heterogeneous local government network organisation. However, membership is skewed towards city governments in the global north, mostly from North

America, Australia/New Zealand and Europe. African region local government's membership represents about 5% of ICLEI worldwide whilst North America constitutes 49%.

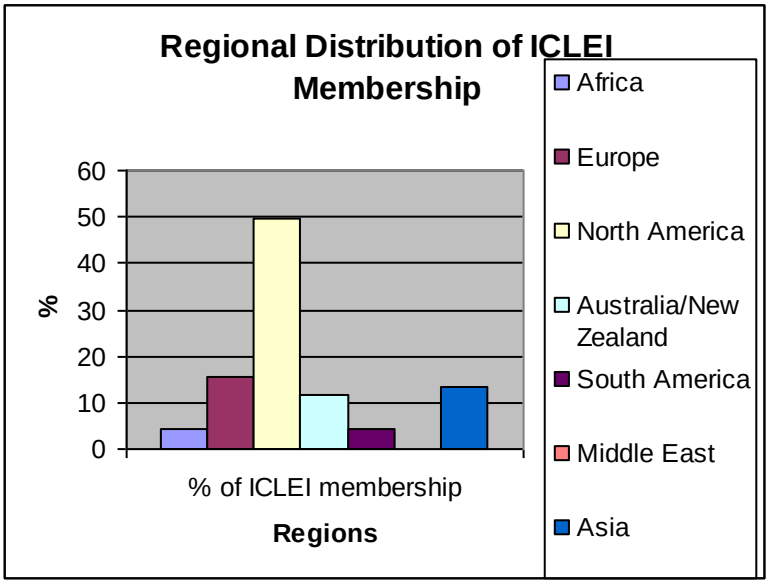


Figure 3.1 Regional distribution of ICLEI members
Source: Derived from ICLEI membership online database, (2013)

The heterogeneity of such networks tends to create possible conditions for fragmentation of the universal group into subgroups. Hogg (1996) suggested that such group fragmentation could be caused by the pursuit of optimal distinctiveness. What happens to group dynamics when these nested sub groups created are reinforced by already existing categorisation and behavioural roles? This obviously leads to hierarchy in the group, uneven power distribution and concentration of resources, knowledge within some subgroups, creating what Dovido et al. (2009) refer to as 'high status' 'low

status' or 'advantaged' and 'disadvantaged' members. By virtue of this position, the knowledge, experience and resources in responding to climate change some members tend to occupy key roles as leaders in these networks and are therefore looked up to by 'lower status' members in the group for examples of good practice. On the other hand such heterogeneity and fragmentation into subgroups within a universal group may also create a situation of disjunction between goals and institutional means to attain them. In view of the limited participation of African cities in climate change networks of local governments, this study explores how participation (or lack of it) has the potential to influence adoption of climate change policies, by investigating the responses of Ghanaian urban local governments.

Moreover the mixed motivations for engaging and remaining in climate change transnational municipal networks questions the policy learning argument. There are various possible motivations for cities interacting in the city networks as has been identified. Capello (2000) utilizing city network theory suggests that some cities engage in networks for the political legitimating of local policies, others to explore the network. Others may also join to gather information for achieving economic efficiency in their respective cities. The last cluster of cities joins the network to obtain know-how, acquisition of new knowledge. It stands to reason that these goals cannot be easily distinguished and in most cases probably overlap. For instance during a survey of 125 members of USMCPA

in 2007, City solidarity came up as tops (28%) for engaging in the network followed closely by environmental protection (26.4%) and green capital (Warden, 2009). City solidarity in this context is interpreted as 'city and mayors working together, cities have a collective strength and share information, draw strength from unity'. In exploring these, what is usually left out is the rationale for limited or absent participation in these networks, which this study would explore.

3.6 Conclusion: A comprehensive approach

From the above discussion there is sufficient evidence that focussing on the domestic context is not sufficient to provide a rationale for adoption of climate change policies. this chapter concludes that including the international and regional influences seems to provide a more comprehensive approach (Weyland, 2005), one which considers both endogenous and exogenous factors. Climate change policy adoption seems to underscore reconsidering of the international context and giving further thought to political networking in diffusion theory. Firstly urban governments in managing of cities are engaged in relations directly or indirectly with international financial institutions which have ownership of financial and technical resources. Access to these resources tends to be governed by conditionalities, which may take the form of introducing new policy ideas for recipient governments to adopt. Therefore the propensity for urban governments to adopt would be

determined by dependence on those who own or control the resources. There appears to be some level of international attention to addressing climate change in sub-Saharan Africa cities, though in the initial stages. Conditionalities attached to development policy funding have not yet featured in the climate change policy literature as a motivating factor for states to adopt climate resilient adaptation in cities. Though conditionalities have been employed to introduce policy innovations such as economic liberalisation in the past, climate change adaptation currently receives less attention. In addition, the resistance to imposition and intrusion may render the direct coercion argument limited in its role as a motivator for adoption of policies innovation.

There is substantial indication that when an issue attains normative status there is the propensity for adoption as a policy. Governments engaged in social groups are expected to adhere to norms and rules. Keeping to norms legitimizes their place in the relation. Consequently policy ideas which are considered norms in a social group would be adopted so that governments would not appear deviant However for policy adoption and institutional change to occur at the local or sub national level the policy innovation needs to have exhausted the norm life cycle and reached a point of internalisation whereby there are institutional and legal frameworks to ensure conformity. Also the expected social, economic and environmental benefits from adopting climate change development

policies appear to have been a significant motivating factor for city governments cited in this research. On the other hand the political incentives associated with adopting climate change have not been highlighted in the discourse on climate change policy. There is therefore inadequate knowledge on how urban policy makers' preference and ideology act as determinants for adoption of climate change policies. The uncertainty attached to an issue renders the rational utility argument limited in its explaining of policy adoption and would therefore require that 'irrational' arguments are considered as well.

Finally, the cognitive heuristic argument presents not only geographical but 'social' proximity through networking as a factor inducing adoption of policy. Therefore climate change – urban agenda may not adopted since neighbouring governments, within or across borders, have not adopted climate change polices with an urban perspective. In addition it is assumed that there is a positive correlation between engaging in climate change related political socialisation and the propensity to adopt climate change urban polices.

Each of the four concepts described are not isolated concepts, but interrelated and constitute the conceptual framework for investigating Accra, Kumasi and Tamale metropolitan governments in Ghana. It was also realised from the cases mentioned in sections

3.1 to 3.4, that the determinants of adopting new policy ideas vary with the context and specific policy idea. Therefore this research adopts an exploratory approach whereby all concepts are utilised as sensitizing tools (Bowen, 2006; Kleining and Witt, 2000) to identify which of these adequately provides an explanation for metropolitan governments adopting climate change policies in Ghana, as well as the content.

4 Investigating Policy Adoption: Tools, Analysis and Reflections

This chapter sets out the approach for collecting empirical data, employing the conceptual framework for adoption of climate change policies presented in the previous chapter. The research was conducted with the aim of examining the content of metropolitan responses to climate change. Secondly it attempts an explanation of factors that have shaped the level of adoption in metropolitan development plans, utilising Ghana as a case study. The first section justifies the philosophical and methodological approach utilised for this study. The research is aimed at uncovering and interpreting realities, in this case, that of climate change policy adoption. Therefore arguing from a critical realist's perspective, it will attempt to draw out the underlying structures and mechanisms that interplay to generate the content and level of adoption of climate change policies. The second section considers the methods used for data collection. A discussion of the framework employed for data collection considers the concepts, means of verification and collection tools. Subsequently, the results of the reflexive study undertaken are presented. It identifies the challenges and ethical contradictions encountered during the fieldwork data collection process. The methods of collecting data and reflection of fieldwork

experiences provide a background for the empirical and discussion chapters to follow.

4.1 Climate change policy studies: a critical realist philosophical approach

Critical realism argues that there is a reality independent of what we perceive and experience which needs to be uncovered (Sayer, 2010; Williams and Tim, 1996). In uncovering this reality 'Science, then is the systematic attempt to express in thought the structures and ways of acting of things that exist and act independently of thought. The world is structured and complex and not made for men'(Bhaskar, 1978: 242). There is the need to clarify that to the realist there are different ontological levels of reality, namely empirical, actual, and real/deep (Smith, 1989). The empirical level considers that reality could be experienced through perceptions, sensations and impressions. To the empiricist, what is observable is reality. The second level of reality is termed actual. At this level, reality is manifested as events and states of affairs. The last level is deep or real reality which, critical realism argues, could be interpreted through an understanding of structures, mechanisms and powers. It is this level of reality to which critical realists mostly adhere. This deeper level realist approach to research contrasts with the empirical and actual levels of reality. Whereas the empirical and actual stance stipulates that there is no deeper reality than the observable

experience, the critical realist approach to research emphasises unobserved (and sometimes observed) mechanisms and structures underlining social reality.

Secondly, to the empiricist, causal mechanisms may be established by correlating observable empirical data. What we observe and experience is the event or state of affairs which prompts further enquiry into the determinant mechanisms and structures. On the other hand, the critical realist attributes events to the interaction of structures, mechanisms or powers (Patomaki and Wight, 2000). Thirdly, to the critical realist, structures are operating irrespective of the events or empirical data that are generated as a result; even without the resultant state of affairs or events, the structures and mechanisms would still in be in operation. Bhaskar (1978), however, disagrees and asserts that structure and the phenomena they create cannot be said to be independent of each other even when the structural processes cannot be observed. The motivation for adopting the critical realist approach for this research is due to its potential to uncover underlying structures, mechanisms and power that interplay to create the events and state of affairs, in adopting climate change policies.

Explaining the adoption (or not) of climate change policies for urban areas in Ghana would imply conducting an investigation that goes beyond perceptions and state of affairs to exploring underlying

structures and mechanisms. This would involve a study of the relationship between the abstract (structure and mechanisms) and the concrete (events generated or not generated) (Sayer, 2010). For the purpose of this research the deeper level of realism is adopted. This will allow for investigating beyond the observable in explaining the level of policy attention to climate change in urban areas by national and metropolitan governments and uncovering underlying mechanisms in operation. It would seem that the general perception in the literature explaining climate change non-responsiveness has been that financial, research and governance factors have constrained the adoption of climate change adaptation policies (Satterthwaite *et al.*, 2007b). This approach highlights observed concepts which have been generated as a result of other deeper mechanisms and structures. For instance when financial limitations are cited as explaining limited attention to climate change in cities, it raises further questions for the researcher, specifically the explanations for limited finance. Posing this additional question would therefore require an investigation into the mechanisms for financing adaptation and the structural conditions for allocating funds for development in. From a critical realist perspective, the underlying structural and power dimensions which generate the mechanisms tend to be overlooked.

Despite the potential of a critical realist approach to research it has been criticised by positivists, empiricists and idealists. Positivists' counter argument for the realist approach primarily lies with its metaphysical attribute. To the positivists only phenomena and knowledge confirmed by the senses can genuinely be warranted as true knowledge (Bryman, 2001:12). Therefore what is not seen may not be classified as contributing to knowledge. In addition, empiricists argue that any attempt to think beyond experience is just speculation (Smith, 1989:298). Idealists also refute the claim that there is a deeper reality besides what we experience. Inadvertently, critical realism has also been accused of exhibiting similarities with crude positivism's tendency at stigmatisation of certain social groups (Jupp, 2006:257). There is also the tendency for the researcher using this approach to discover true knowledge to adopt a naive stance in this quest (Sayer, 2000).

Considering the potentials and deficiencies in critical realism and, on the other hand, a pragmatic approach to research on climate change policies, there is a need for an integrated methodology. This methodology has been appropriately termed 'critical pragmatism' (Bracken, 2007; Forester, 1993) which aims to reconcile the two diverging methods of pragmatism and critical realism. This research combines the study of underlying structures and mechanisms with the aim to influence policy responses based not entirely on the

superficial and empirical. This has implications for research design and data collection tools, to determine the factors that shape adopting climate change policies for urban areas by national and metropolitan governments in Ghana.

4.2 Research design: investigating climate change policy adoption

The critical realist philosophical approach to this research required that data collection tools extended beyond collecting empirical data to capturing underlying policy and decision making processes which in most cases remain unobservable. Such methods would involve direct involvement with policy makers and the decision making process as well as a direct contact with the subjects of the study (Bracken, 2007). In addition the research question and the philosophical approach taken require that the investigation takes an in-depth look at the decision making process, actors, action arena and the powers at play. This therefore calls for utilising a combination of three different qualitative research methods - multiple case studies, interviews and document analysis.

4.2.1 Case Study Approach

A case study approach has been employed in policy analysis due to its capacity to examine policy processes comprehensively and to allow for theorising beyond a single event (Bracken, 2007). Yin

(2009) presents a typology that aids in justifying the case study approach. The research question denotes an explanatory form of research which is meant to explain policy responses to climate change in urban areas with reference to Ghana. Secondly, the research does not require a control of behavioural events, which is unfeasible with policy analysis. Furthermore, the question requires a focus on contemporary events. Inadvertently, there will be a historical element to understanding this phenomenon which will augment the data collection methods, to be addressed later. The utilisation of a case study method is seen in its potential to 'incorporate both material and ideational variables'(George *et al.*, 2005: 9), variables reflected in the conceptual framework. From a policy analysis perspective, the case study approach is being adopted for this research due to its potential to 'unfold the pathology of a situation from the assembly and study of a suitable number of cases' (Bracken, 2007:267).

The 'assembly' here may refer to a universal group of study which in this case is all urban governments in Ghana. Though the definition of urban may vary across the world, the Ghana Statistical Service (GSS) defines an urban area as a settlement with population more than 5000. However, not all urban settlements in Ghana have the status as administrative and planning centres. There are 216 government administrative centres, consisting of 6 Metropolitan

areas, 49 Municipal authorities and 161 District assemblies which have different institutional setup (Fig 4.1). Bearing in mind the technical and financial limitations of conducting studies in all 216 centres, the unit of analysis in this study would select a number of metropolitan assemblies.

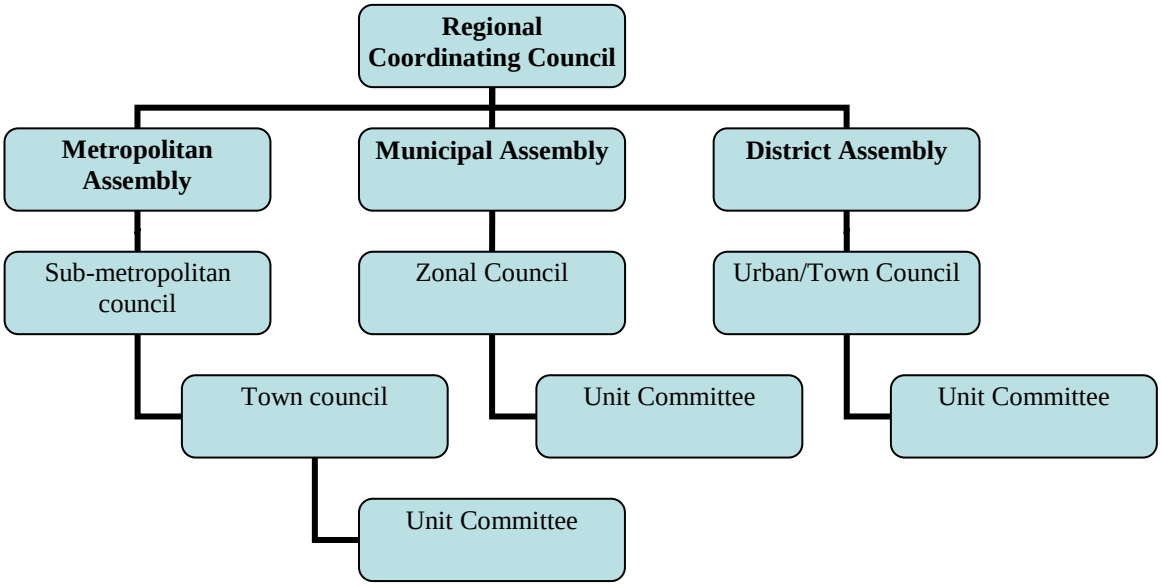


Figure 4.1 Metropolitan, municipal and district assembly government structure

Source: Adapted from Local Government Act 462 (Ghana, 1993)

Besides the primary units of analysis (Metropolitan Areas), input from sub-units of government such as the unit committee was also considered for this study. This is justified due to the nature of governance in urban areas, which has been based on fiscal and administrative decentralisation (World Bank, 2003). Under the Ghanaian Local Government Act 462, some powers of decision

making has devolved from the Metropolitan level to sub-metro council and Town councils, whereby there is an input from sub metros in the Metropolitan/Municipal/District Assembly (MMDA) development plans. These multi-levels of government in metropolitan assembly planning could not be ignored when investigating decision making at the metropolitan assembly.

Single or multiple case study approach

The case study method takes two forms: single case and multi-case approach. Yin (2009) presents five rationales for adopting a single case study approach, namely when the case represents a critical, extreme, typical, revelatory and longitudinal case. A single case allows for an in-depth study. Nonetheless for effective policy analysis there needs to be a combination of comparative analysis and case study. Utilising a single case approach would create draw-backs for comprehensively investigating the conceptual framework for determining the adoption of climate change policies. The multiple-case approach will be adopted for this study due to its potential to convey comparative structured analytical benefits (George *et al.*, 2005). By studying two or more cases, the analytical conclusions drawn are likely to be stronger than that of a single case. Similarly the multiple case approach allows for 'a comparative analysis which only can lead to theorising beyond the single unique event'

(Bracken, 2007:259) and generalisation which may not be achieved when studying a single case.

Also, there is the result of a literal or theoretical replication. The replication logic is asserted by Yin (2009) to be an appropriate technique employed in selecting cases for multiple case analysis. The essence of this logic is that after the first case study additional cases need to be studied either to predict similar results or contrasting results. Only then would the results be considered to be vigorous and indicate a general phenomenon. Therefore in selecting the number of cases (Metropolitan, Municipal, and District Assemblies) to study and investigate the conceptual framework, the replication design is to be applied. Consequently, the cases have to exhibit a number of similar as well as contrasting characteristics. There are six urban areas in Ghana classified as metropolitan areas, and have similar organisational structures as metropolitan assemblies. All experience climate change effects, based on various climate change scenarios developed. However they differ in population sizes and are located in different ecological zones.

Table 4.1 Case study selection criteria

Metropolitan Assembly	Pop. size Percentage urban	Agro-ecological Zones[11]		
		Rain Forest	Guinea Savannah	Coastal Savannah
Accra[12]	1,848,614 **(100%)**			✔
Kumasi	2,035,064 **(100%)**	✔		
Sekondi-Takoradi	559,548 **(96.1%)**			✔
Tamale	419,110 **(65.1%)**		✔	
Cape Coast	169,894 **(76.7%)**			✔
Tema	392,044 **(97.4%)**			✔

Source: Ghana Statistical Services Population and Housing Census, 2010

All the metropolitan areas listed in the Table 4.1 above were possible cases for study. There was the need to have representation from the different ecological zones, which experience different climatic conditions, and hence varied impacts of a changing climate. In addition, majority of the metropolitan areas are coastal towns (Accra, Sekondi-Takoradi, Tema and Cape Coast) whilst Kumasi is located midland and Tamale further in land.

Three areas were selected from different ecological zones, Kumasi Metropolitan area (Forest zone), Tamale metropolitan (Guinea

[11] The agro-ecological zones in Ghana: Sudan Savannah Zone, Guinea Savannah Zone, Transition Zone, Semi-deciduous Forest zone, Rain Forest Zone and the Coastal Savannah Zone

[12] It is important to state that Accra Metropolitan Assembly is a part of the Greater Accra Metropolitan Area, which consists of other districts such as Ledzekuku-Krowor

Savannah) and Accra metropolitan (Coastal zone). This would provide a basis to examine the geographical context and resultant impacts of climate change in different ecological zones, and how the similarities and differences in context determine adopting such policies. Table 4.1 shows that, though all three case study areas are classified as metropolitan areas, population sizes vary. Tamale metropolitan area's population is approximately 20% of the population of Kumasi and 23% of that of Accra metropolis, and presents an intriguing case for researching smaller cities. Further descriptions of the metropolitan areas are presented in the subsequent section.

Map 1 Location of case study areas
Source: Nations Online Project[13]

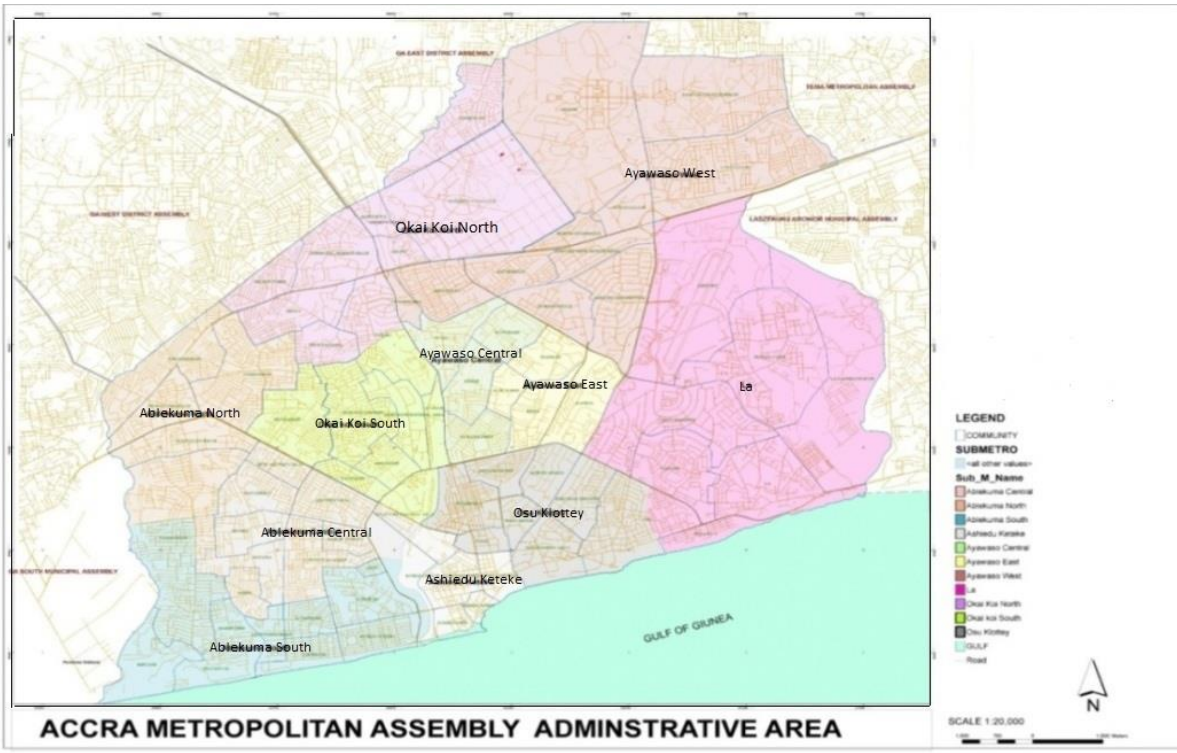
LEGEND

● Study Area

[13] http://www.nationsonline.org/oneworld/map/ghana_map.htm

4.2.2 Description of the case study areas

Accra Metropolitan Assembly (AMA)

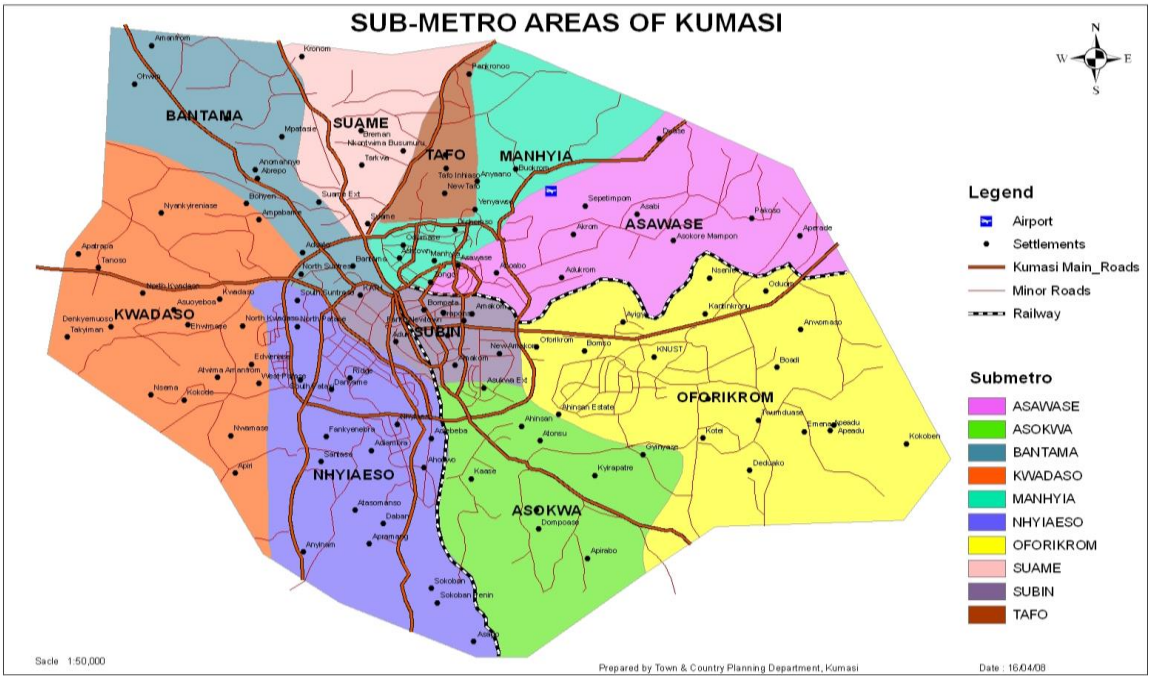


Map 2. Accra Metropolitan Assembly administrative area
Source: AMA, 2011

Accra Metropolitan Assembly (AMA) is one of the administrative districts in the Greater Accra region with Accra, the capital city of Ghana, as the administrative centre. Accra metropolis is located about 180 meters above sea level , in some areas and at sea level in others, and covers an area of 176 sq. Km. According to Population and Housing Census 2010 (GSS, 2012) Accra metropolis population is 1,848,614 and a population density estimated at 24645 persons per sq.km. Growth rates were estimated at an average of 4.3% per annum between 2000 and 2010. In addition a floating population of

one million people is expected in the city every day. Map 2 shows the extent of administrative boundaries of AMA and the various sub-metropolitan areas.

Kumasi Metropolitan Assembly (KMA)



Map 3 Kumasi Metropolitan Assembly administrative areas

Source: KMA Town and Country Planning Department (KMA, 2010)

Kumasi Metropolitan Assembly (KMA) is located in the Ashanti region, and the regional administrative centre. Kumasi metropolis is located on the south west plateau, 250m-300m above sea level. The topography of the city is undulating with about seven major streams.

The metropolitan area experiences an average minimum temperature of about 21.5ºC and a maximum average temperature of 30ºC. With a population of 2,035,064, Kumasi is the most populous area in the Ashanti region and accounts for about a third of the region's population (Ghana Statistical Services, 2013b). The city's population had been growing at an annual average rate of 5.4%, higher than the regional average of 3.4% and national rate of 2.7%.

Tamale Metropolitan Assembly (TaMA)

TAMA is located in the Northern region of Ghana and has Tamale as the administrative capital. TAMA lies within the Savannah woodland and covers a total area of 750 sq. km. According to the 2010 population and housing census, the population of the metropolis was 419,110. Although TAMA is considered a metropolitan area, growing at an average of 3.7% per annum, only 65.4% of the total population is urban (Ghana Statistical Services,2013a).

4.3 Data Collection Tools

Three case study areas provide an opportunity to conduct a comparative study of the responses and determine whether the concepts explaining adoption in these metropolitan areas vary or otherwise. In order to uncover underlying structures, mechanisms

and power in operation in formulating the development plans, there was the need to use applicable collection tools that would achieve the objectives. For the purposes of this study two different data collection methods were utilised, namely semi-structured interviews and documented evidence.

4.3.1 Semi-structured interviews

There are a number of reasons for utilising interviews as data collecting tool, which are discussed below. Bracken (2007:269) asserts that 'For reasons of wanting to avoid criticism or blame or simply to leave room for later manoeuvre or bargaining, policy makers may prefer to leave certain aspects as covert or implicit.' Bearing this in mind investigating decision-making processes and their outcome would require reliance on verbal information from policy makers but at the same time allowing for flexibility in the interviewing. As such, the interviews would be conducted by asking semi structured questions. Another advantage of the semi-structured form of interviewing is its flexible nature, which has the ability to assist in discovering previously undisclosed elements of the topic in question (Bryman, 2001). Moreover, the structured edge of semi-structured interviews also permits 'analysis in terms of commonality in cases' (Gillham, 2009:72) or 'cross case comparability' (Bryman, 2001:315) and is an appropriate method of data collection in multiple case study. The investigation of in-depth, not easily

apparent structures and mechanisms makes the semi- structured interview approach appropriate for this study.

Interviews were carried out with the decision making units at the Metropolitan/Municipal/District planning level. Further interviews were carried out with sub- units of analysis which are the selected sub-metros councils and town councils. In addition to the urban government decision making unit, international development partners have exerted considerable influence on urban development and environmental programs, as described in Chapter 3. As such, interviews were carried out with multilateral, bilateral and United Nations agencies. It was envisaged that interviews would be conducted with 35 respondents. However some respondents declined to participate in the interview whilst other potential informants were not available throughout the data collection period. Measures were taken to possibly establish contact with such potential informants for emails or telephone interviews after research visits to Ghana. By the end of the data collection, 31 interviews had been conducted. Despite the benefits of semi-structured interviews there is the tendency for reflexivity (Bracken, 2007; Bryman, 2001; Yin, 2009) where the interviewee gives what the interviewer wants to hear. The subject of reflexivity may be more evident when discussing an environmental issue like climate change which seems to have a degree of acceptability. Therefore there was the possibility

for informants to distort information. As such there was the need to utilise other data collection methods to support and validate the interview data.

4.3.2 Focus groups

Focus group discussion was another potential tool used for data collection from officials who were actively involved at the metropolitan/municipal and district assembly planning unit which coordinates and verifies development plans for the urban area. Bryman (2001) states that conducting focus group discussions allows for additional perspectives to the data generated by one-to-one interviews. Focus group discussions permit the views of participants to be questioned by other interviewees. Challenging views and the arguing process which occurs in focus group discussions allows the researcher to obtain more valid data. However government officials were unwilling or unable to participate in the focus group discussion. Two focus group discussions were therefore held with urban development professionals to obtain their perception on climate resilience building in Ghana.

4.3.3 Documentation sources

State documents were an important source of data to corroborate (contradict or expose biased) information from interviewees. State documents from Ghana include among others

Metropolitan Development Plans, National Constitution 1992, Local Government Act 462, National Development Planning Committee Regulations and Guidelines, National Democratic Party-Political Manifesto, Parliament Hansard, Minutes of MMDA Planning committee meetings and Ghana National Urban Policy. Electronic, broadsheet newspapers and opinion polls were also an additional source of data to explore the attention given to climate change in media reports.

Bearing in mind the regional context in addressing the research question, state documents from a few other sub-Saharan African countries would be essential for this research. National Communications (NC), National Adaptation Plans of Action (required under the UNFCCC) and local government policy responses from Nigeria and South Africa were sourced. South Africa was selected based on the country's recognised metropolitan leadership in climate change policy and their participation in climate change networks, ICLEI and C40. In 2009 South Africa hosted the UNFCCC Conference of Parties in Durban. Nigeria is located in West Africa, and a neighbouring country to Ghana. Exploring Nigeria's policy response would to determine whether there are similarities or differences on climate change policy. Some of these documents are available on UNFCCC websites whilst others were available on government websites. The challenge was in obtaining

current documents which are not yet available on specified internet sites and not available for public viewing. Also the multilingual nature of the countries within the West Africa region and Africa in general made some documents in French difficult to access without expensive translation services. Despite these likely drawbacks in using documentation as a source of data, an advantage of this method is the 'obtrusive' characteristic of this method (Yin, 2009), the reason being that these documents would not likely have been prepared for the purpose of this research.

The media is influential in raising public opinion on climate change and placing the issue on the policymaking agenda (UNDP, 2007). As such, media reports, particularly newspapers, were scanned to identify key topical issues and whether climate change has been a subject of interest in these spaces. 100 days of media coverage spanning June –August 2011 would be conducted. As Table 4.3 shows there are over 40 different weekly and daily newspapers (national and local), 130 FM. radio stations, and10 different televisions in Ghana, however only a few have nationwide coverage. Therefore four nationwide published newspapers, four online newspapers, two television stations and three radio stations were selected for investigation.

Table 4.2 Media sources of information

Type of Media Coverage	**Source**
Nationwide Newspapers' coverage on climate change	The Daily Graphic, The Ghanaian Times, Daily Guide, Business and Financial Times
Online News coverage on Climate Change	Ghana News Agency, Ghana web, All Africa.com
Television	Ghana Television(GTV), Metro TV
Radio	Peace Fm, Joy Fm, GBC 1

Source: Fieldwork data (July-September, 2011)

Using a combination of interviews, focus group discussions and state documents, a large amount of data was generated which required analysis to make sense of all the information obtained and finding 'analytical paths' in the vast amount of data (Miles, 1979) . Essentially the research question addresses how climate change policies have diffused to urban context, its content and the drivers

and determinants for adoption by metropolitan government, with particular reference to Ghana.

4.3.4 Analysing the data

The data generated from interviews, focus groups and document analysis was analysed utilising tools of grounded theory - coding, theoretical saturation and constant comparison (Bryman, 2001). The first step and key element in analysing the data was to code the data generated based on the indicators and concepts established in the conceptual framework. 'Coding' here refers to merely allocating passages to categories or topics (Richards, 2005) or 'data broken down into component parts which are given names' (Bryman, 2001:390). The breaking down of the vast data into components permits the indicators and concepts in the conceptual framework to be established and categorised. Through a comprehensive comparison, connection between the individual concepts and indicators would be determined.

To facilitate the process of coding the use of computer software, NVIVO, was explored as an additional tool to manual coding. Though computer assisted qualitative analysis is beneficial for coding large amounts of data it requires training and skills development to be used effectively. In addition the automated coding procedure is not a substitute for interpreting the data - coding is only the first step. Following the coding and determination of

connections between concepts and indicators, the data was then interpreted to find meaning for the research questions and which seeks to explain climate change policy responses for urban areas in Ghana. Furthermore, the interpretation of data sought to uncover any existing connections between coded categories, and provide an explanation for metropolitan governments adopting climate change policies. This will establish which concepts, external pressure, normative imitation, utility and emulation determine adoption of climate change policy by local government in Ghana.

4.4 Researching climate change: ethical considerations

The researcher set out to collect empirical data on climate change policy formulation for metropolitan areas in Ghana utilising interviews and documented evidence. Expectations were that the end product would be a set of transcribed interviews and policy documents which would then be analysed. However, the research encountered ethical and administrative issues in the process of collecting data. These fieldwork encounters reiterate Burawoy's (1991:8) point that the discovery and justification process, the intellectual product and process of production be regarded as a single entity. Ignoring or failing to present the micro/macro political, social and economic processes already in operation whilst conducting such research tends to render the knowledge produced as

partial (Rose, 1997). As a result the challenge for this research was to consider the underlying social, political and organisational processes operating within the context of the subject matter whilst retaining the research content and ensuring validity of the data generated.

Drawing on personal reflections from interviews with policy makers and collecting policy documents on development planning in Ghana, the knowledge production processes and how these influence the outcome of the research are presented in the subsequent sections. Three main issues emerged: presenting the research subject of climate change, reciprocity between the interviewer and interviewee, and administrative bureaucracy encounters, which needed to be highlighted. Firstly there were issues of utilising the appropriate 'language' in communicating climate change to respondents. Secondly the research encountered situations of reciprocity and social exchange whilst relating with the respondents. Finally the researcher faced administrative challenges from respondent organisations. This was demonstrated in recruiting respondents and how gatekeepers and bureaucrats used information as a bargaining tool with the researcher. It is obvious that the research field in developing countries is replete with challenges (Bulmer and Warwick, 1993). More so, this research presented an opportunity to investigate how respondents interacted with a dominant policy idea and the researcher. Taking both the intellectual process and product

into consideration as an interconnected entity justified adopting a reflective stance for this study.

4.4.1 Communicating climate change to informants: informed consent

The threat of climate change to development and managing cities in Sub-Saharan Africa is well noted (UN-Habitat, 2011) and the government of Ghana has initiated policies to mainstream climate change in development plans. To assist the government in such initiatives, the UNDP-African Adaptation Programme trained all 170 districts on mainstreaming climate change adaptation and disaster risk reduction in development plans[14] . One would assume that among policy makers in Ghana, there was general knowledge on climate change. So prior to setting up the interviews it was presumed that communicating the research would be met with ease. Yet the initial attempts to introduce the research subject 'climate change' to potential respondents resulted in being referred to the Environmental Protection Agency (EPA). This could be attributed to the centralised nature of managing climate change information and institutional setup by the Environment and Climate Change team in the Ministry of Environment Science and Technology (MEST). It could also possibly be that when referring to climate change, local government informants associated the research with the international dimensions of the subject, which is beyond their domain of operation. Despite all

[14] Key Informant 6, 5th August 2011

these assumptions the researcher realised that there was the need to adopt a different approach to communicate the purpose of the research.

This required utilising more familiar terms of ‘flooding’ and ‘drought’ in the research description and relating these to specific issues of development planning. This approach confirmed a BBC report on climate change knowledge in Ghana which states that there is usually no clear distinction between the interpretation of climate change and environmental degradation, the concepts are used interchangeably (BBC, 2010). Whether this approach provided a comprehensive understanding of the research subject and adequate for informed consent from informants was an issue of concern. However the technical nature of the concept of climate change mitigation and adaptation required this approach of framing the subject matter in terms which was familiar for participants. The rationale was that communicating the research to informants in a familiar ‘language’ was also essential in obtaining consent for the interviews. However in focussing on climate change adaptation and disaster risk reduction strategies, the subject of greenhouse gas emissions tended to be missing in the description. In order to balance the investigation efforts were made to examine the carbon emissions dimension through analysing policy documents and interviews with experts in the EPA.

4.4.2 Managing risks: disclosing information and bureaucratic powers

The University Research Ethics Form (UREC) E2U, which sought ethical approval before this research commenced, stipulates that the responsibility of identifying ' as far as possible all potential risks to participants' lies with the researcher (UREC, 2011:3.2). In essence the researcher by virtue of this provision is granted the moral obligation to determine what may be considered 'harm' to participants. Two major themes could be drawn from the ethical guidelines for this research in particular. Firstly that scientific research has the potential to create and cause harm to participants. Secondly the research must aim to providing benefits to the participants. The responsibility therefore rested primarily with the researcher intending to carry out the study to identify the potential risks, harms and intended benefits of the study to the participants.

As prescribed by these essential principles, the duty therefore lies with the researcher in identifying and placing all measure to prevent 'harmful practices' as well as ensuring that benefits accrue to the participants and to society as a whole (Orb *et al.*, 2000). Though such guidelines present researchers with an overview of different concepts of harm, it sometimes masks the subjective meanings and interpretations participants ascribe to the subject of inquiry and the potential for creating harm. This research demonstrates that the

framing of climate change policy research creating harm or benefit (or both) to participants was varied.

The primary respondents for this research were policy actors engaged in urban development policy formulation. Before the research commenced, there were no expected physical, psychological harm or risks to the interest of participants, but possibly an insignificant level of risk to their careers as a result of the divulging of sensitive information. This conclusion was based on the assumption that climate change policy research has the potential to benefit participants in policy deliberations and possibly contribute to urban development policy formulation in Ghana. Climate change is widely considered a threat to humanity with expected adverse consequences for developing countries in particular (APF, 2007; Parry *et al.*, 2007; Toulmin, 2009). In response to identified climate threats, Ghana ratified the Kyoto protocol in 1995 and has submitted two national communications (EPA, 2001; EPA, 2008) as part of the nation's obligation under the United Nations Framework Convention on Climate Change (UNFCCC). Subsequently the government, through the Ministry of Environment, Science and Technology, has developed a policy framework for reducing greenhouse gases emissions and adapting to the impacts of climate change (NCCC, 2010). Similarly sub- national government and sector ministries are obligation to identify climate threats and

indicate measures to address them in the medium term development plans (NDPC, 2011).

The researcher assumed that the result of this research has the potential to inform policy making and implementation regarding climate change resilient development and therefore beneficial to the participants. However the complex situation presented for this context was participants had different perceptions regarding harm not related to the subject matter per se, climate change urban development of its own accord was considered a 'good' initiative. The risk and benefit of the research to the participants became apparent and were subjectively defined when climate change policy research confronted interests and power dimensions existing in the fieldwork setting. One could say there were occasional clashes of ethical guidelines.

Professional ethics of public service in Ghana requires that civil servants are duty bound not to disclose sensitive information. Breaking the code may arise which in some cases may discredit the government and public servants are at risk of facing sanctions (Jay, 1985). The risk element of the research identified by public officers considered information regarding climate change policy formulation classified and therefore the disclosure of certain information has the potential to jeopardize their careers. The code of conduct of the

Ghana Civil Service (GSC) stipulates that civil servants are required not to disclose classified information and material (GCS, 1999:16(3)). For some participants GCS professional code of conduct was cited as the reason for restricted access to certain information and documentary evidence whilst others were ready to provide the requested information. For instance, during an interview session with key informant 3[15]from a government ministry the request for documentary evidence was declined. The sensitive nature of the document was cited as the reason for this refusal. However, when the same document was requested from key informant 4[16] it was readily made available. Incidentally it transpired that the requested document was also publicly available online on the government's portal. What accounts for this varied response? One may suggest ignorance on the part of key informant 3 about the nature of the document in question. This suggestion is questioned since the informant held a key position in the preparation of the document itself. The desire to exercise bureaucratic power by public official could be a likely explanation for this manifestation.

Jay (1985) asserts that the civil servant is first and foremost a human being. Under certain circumstances, his/her duty as a human being with interests overrides his professional duty and loyalty. This does not however imply a higher level of loyalty is ascribed to

[15] Key informant interview 3, 5th August 2011
[16] 18th August 2011

participants who restricted access to documentation. On the other hand, information restriction could also be interpreted as interplay of power dimensions, with the bureaucratic seeking to demonstrate power over the researcher. One of the sources of power of civil servants rests on two concepts, information and secrecy. For instance Weber (1978:1417-1418) notes that the power of bureaucrats lies in access to and control of official information (which may be obtained through administrative channels) as well as their expert and specialised knowledge attained through training. Consequently, bureaucrats by virtue of control of knowledge achieve a sense of power and tend to exercise this by limiting or withholding the supply of information to researcher (Aldred, 2008).

Similarly secrecy and restriction to information by bureaucrats is another means of entrenching and advancing their superiority of bureaucrats whilst 'hide its knowledge and action from criticism' (Weber, 1978:992). It also ensures that 'bureaucracies carry more weight' (Dowding, 1996:63). Secondly the tendency for change in management structures due to integrating climate change concerns in policy making creates the perception of a threat to the careers of civil servants in this case. Conventional management skills are no longer enough to address climate change adaptation in decision making (Brewer, 1995). Therefore as Doherty and Horne (2002) would suggest in times of organisational change a threat to careers

may be imminent and could create such responses. These responses could be the perception that climate change is a 'threat' to their careers because of negative consequences of the change in public administration models. Therefore public officers stating that disclosure of climate change policy information would risk careers are insufficient in explaining withholding publicly available information. Though invoking the code of secrecy and classified information may be motivated by administrative procedures and constraints there are underlying power interests.

Of particular interest were the politicians and other actors' demands and influence in the policy process, which participants mentioned. These are well known occurrences which have been noted but hardly included in the output of policy documents. The exchanges with metropolitan government informants brought to fore these political interests and development actors preferences which tend to determine what themes or areas eventually feature in the development plans. In order to prevent the research creating environment and situations of risks for informants and their careers, the identity of the participants had to be protected. Some narratives of informants, considered by the researcher to be politically sensitive or difficult to substantiate with corroborating evidence, were not quoted. However to ensure that these complexities of preparing the development plan are presented in the thesis, some narratives are

overtly included in the researcher's interpretations of the findings in Chapters 7 and 8.

4.4.3 Interviewer-interviewee relations: reciprocity and exchange of information

This research carried no direct monetary rewards (UREC, 2011). However the benefits of engaging in the interview could be considered inherent in both the subject of climate change as well as the attributes of the researcher. Particularly interesting to the interviewee and interviewer were the assumed benefits derived from exchange of information. Information assumed a status of a currency, a means of exchange (Robertson, 2011). This information seeking by participants usually took place after the scheduled interview was complete, a post interview period where the roles were reversed and the researcher then became the potential informant. For instance key informant 21[17] expressed interest in obtaining more information on available climate change research grants and ways of accessing these funds since a previous grant application had not been successful. Also one key informant[18] was interested in finding out more about the rationale for the research and opportunities for enriching policy discussions on the then formulation of Ghana national climate change policy. In addition whilst conducting an interview with the climate change team, a

[17] 22nd August, 2011
[18] Key informant 7, 9th August, 2011

specific urban context was realised by the key informant[19] to be missing in the formation of national climate change policies and a note was made to forward the idea to subsequent discussions. The extent to which this would influence the policy is yet to be known. Interestingly additional information on the interview questions was provided during these post interview sessions.

It appears that the basis of attraction for this exchange was inherent in the positionality of the researcher as an insider-outsider, inherent and ascribed characteristics that define the researcher. Though a Ghanaian national, the researcher was also perceived as an 'outsider' from a developed country which had been primarily held responsible for climate change (Parry *et al.*, 2007). One of such characteristics, among others, was the researcher's educational association with Oxford, perceived as prestigious. The insider-outsider position created an ambiguous space for the researcher to manoeuvre (Cheng, 2005) but also has advantages since it necessitated the collection of data. Similarly the IPCC reports which set the policy framework for policy responses are produced and vetted by experts 'trained and privileged by larger structures of globalization'(De Lucia, 2009b). By virtue of intellectual association in such a perceived 'global' environment and associated with what Peet (2007) describes as intellectual and ideological hegemony, there appeared to be a sense

[19] Key informant 3, 5th August, 2011

of power ascribed to the researcher. Consequently a section of informants, particularly those working in urban development[20], were interested in obtaining information on career development and research opportunities in Europe, consistent with Constant and Tien (2009).

Other than the benefits of engaging in discussions on the subject of 'climate change', the participants recognised other potential rewards which are usually not captured in general literature on interviewer-interviewee relation, but have the capacity to emerge during the interview sessions. One such case was in the ability of research to inform policy. For instance, requests were made for the researcher's input into the National climate change policy framework which was at its formulation stage[21]. The research was perceived to be able to bring to the attention of international organisations the challenges that the Ministry of Finance and Economic Planning, Ghana faces in meeting criteria for selection as a National Implementation Entity under the UNFCCC[22]. In a way the researcher acted as a 'bridge' for transmitting information.

The interviewer-interviewee relations and exchange of information meant that the data collection process in this context, in most cases, was mutually beneficial. Lake and Harper (1987:35) assert that the

[20] Key informant 8, 10th August, 2011 and Key informant 17, 19th August, 2011
[21] Key informant 3, 5th August, 2011
[22] Key informant 30, 1st September, 2011

interview process is a social interaction process subjective to the goals and expectations of both the respondent and the interviewer, a two person or dyadic interaction. Going by this assertion the interview process adopts an instrumental dimension not only for the researcher but for the participants as well. In some instances interview is perceived as a social interaction process which has intrinsic and extrinsic benefits and is therefore socially attractive to engage in (Blau, 1964). One of the processes of social interaction is social exchange characterized by reciprocity which is described simply as

'persons that give much to other try to get much from them and persons that get much from others are under pressure to give much to them' (Homans, 1958:606). A prerequisite for this exchange is the possession of certain characteristics which have the potential to attract the other party.

Bureaucracy and compartmentalisation: The researcher as a bridge

The bureaucratic nature of government civil service and compartmentalisation into departments as well as different jurisdictions and objectives means that certain information is siloed within these circles (Hunt, 2005). Granovetter (1973) explains that when individuals maintain strong close knit associates, with fewer interrelations with people in other groups, they tend to be deprived of information from other groups, which can disadvantage them and

distance them from innovations and job openings. The ability of the researcher, within time and space, to transcend these barriers and engage with different departments tends to create momentarily an opportune bridge or link to gain access to information, innovations in other departments. In addition, participants perceived the research as an opportunity, a conduit, to pass on information from one department to the other, to national and international platforms. For instance a participant expressed frustration with the process of attaining a status as National Implementing Entity (NIE) under the UNFCCC[23]. Suggestions were made to use this research as a platform to relay information to the UNFCCC on the cumbersome nature of the accreditation process for developing countries such as Ghana. Similarly another participant saw this as an opportunity to send a message to the national government on the state of implementing a national policy, 'I speak my mind and everyone knows that... You can quote me anywhere' [24]

This presents ethical dilemmas in that as a researcher much precaution has to be taken in protecting identity of informants even though the centralised nature of climate change and urban policy making in Ghana makes it more of an immense challenge. Similarly such social exchanges tend to create possible mental biases and preconceived notions of other organisations, particularly when a

[23] Key informant 28, 1st September, 2011
[24] Key informant 27, 1st September, 2011

representative of these organisations is yet to be interviewed. Although the interviews highlighted in the preceding sections show that the interaction between the researcher and the participants was permeated by exchange of information, the research itself was not being governed by social exchange processes of rewards and reciprocity. Moreover the assumption of voluntary participation and rational utilitarianism of participants totally disregards the altruistic and normative and structural obligations of humans. Secondly emphasising the micro level interactions between the researcher and informants sees them as occurring in isolation, thereby ignoring the macro structural processes within which these interaction takes place (Zafirovski, 2005). Similarly, Aldred (2008: 894) reemphasises a consideration beyond the dyadic interaction between the researcher and the researched to incorporate wider social and organisational structures.

4.4.4 Gate keeping, recruiting informants and bureaucratic power

One significant observation is that in spite of the tendency of self-interests and altruism of public servants driving decisions to participate (or not) in the research, 'hierarchical office authority' (Weber, 1978: 957) was also instrumental. In organisational structures the expectation of hierarchical order and adherence to norms, to a large extent, shape the behaviour of bureaucrats (Weber, 1978). Despite the pursuit of self-interest there seems to be an

expected adherence to the norms and procedures of an organisation. Bailey (1964:236) appropriately describes this complexity in ethical and moral dilemmas of public servants: 'Man's feet may wallow in the bog of self-interest but his ears and eyes are strangely attuned to the mountain top'. The initial strategy at the beginning of fieldwork was to adopt a top-down approach in recruiting participants, recognising persons higher up in the hierarchy of the organisation as gatekeepers. Literature on gatekeepers has widely focused on persons high up in the hierarchy of an organisation or society (Burgess, 1982; Heath *et al.*, 2004; Sixsmith *et al.*, 2003).

Gate keeping from within

Jupp (2006: 126) defines gatekeepers as those who control research access and states that in formal organisations this power is concentrated in the hands of seniors in the organisational hierarchy. However this definition loses sight of the fact that under certain conditions power in public organisations can also be pluralistic and therefore diffused to staff in other administrative levels, into the hands of staff lower in the organisational hierarchical ranks. Mechanic (1962) argues that lower level staff may exert substantial power in a complex organisational set up, and such power is not defined by their formal position in the organisational hierarchy. Complexity here refers to organisations with multiple dimensions, actors and interests. Such complexity in organisational structure

presents constraints in communication within the organisation as well as opportunities for the creation of 'informal organisational structure' (Ibarra, 1993) or 'emergent network structures'(Monge and Contractor, 1999) co-existing with the formal structure. This tends to generate an 'informal power' structure as described by Mechanic (1962) and presents as the considerable control of access to information, persons and instrumentalities as a result of their position in relation to access to these resources not entirely through the formal structure but based on their position in these informal structural networks .

Therefore in setting up interviews for this research, secretaries, receptionists and personal assistants, though considered lower in organisational hierarchy within the Ghana Civil Service, had an influential role in granting access to public research participants and releasing relevant documentation for this study. By virtue of their longevity in departments, dependence of senior staff on them for mundane duties and front desk roles, they occupied a central place in a communication network and exert significant power on accessibility to persons and other resources within the organisation. For instance, though secretaries, receptionists or personal assistants had little or no knowledge about climate change, they wielded

immense power in granting access to key informant 7 [25] and key informant 28[26] .

It is essential to note that the structure in such political organisations is not essentially top-down but presents as nodes and networks with power of access to information in different networks. For instance, on a request for a policy document from a government official, though the official was aware of the existence of this document, gaining access and retrieving the document was in the hands of the secretary/ office clerk[27]. It is important to note that the informal structure does not render the formal structure invalid but complements it. Moreover the informal structure based on networking, communication and other personal relations was not confined to the limits of the institutions: it extends beyond the boundaries of the institution. Gatekeepers were not necessarily restricted to the organisations but were external to the formal structure of the political institution in question. This required restructuring the initial approach of emails, telephone calls and by post stated for recruiting participants.

Utilising professional and educational networks for recruiting participants

[25] 9th August, 2011
[26] 1st September, 2011
[27] Key informant 29, 2nd September, 2011

In some instances when it was difficult to access potential participants through the formal institutional structure, networks outside the institutions to which both the researcher and potential participant belonged to were utilised to gain access. A key informant after the initial contact to set up interview postponed on numerous occasions[28]. Despite the initial setback, another attempt was made to set up an appointment for the interview, through a former colleague of the researcher and an associate of the potential participant, who happened to be in the office, and then the participant agreed to the interview. Utilising social networks as means of accessing participants has been employed particularly for situations described as 'researching sensitive topics' and 'hard to reach' participants (Browne, 2005). The significance of networks to accessing research participants derive from the perceived position and relation of the researcher to the participant within a group, either as an outsider or insider. Researchers have been considered as 'outsiders' in relation to their objects of enquiry (Denzin and Lincoln, 2003; Sixsmith *et al.*, 2003) and therefore occasionally subject to hostile responses.

As stated earlier research, clearly, does not occur in a vacuum, it takes place within a social order and structure with existing norms. From a social identity perspective some scholars agree that social

[28] Key informant 29, 2nd September, 2011

categorisation and group formations create 'intra-group homogenisation' and 'intergroup differentiation' (Hogg, 1996:71). In response Brewer (2000) asserts that social identity theory is limited in providing an explanation to the in-group out-group distinctions and therefore draws on an evolutionary perspective to present two possible explanations. Firstly, one possibility is that obligatory interdependence with others is necessary in order to survive and the associated outcomes drive in-group trust and biases. Secondly, out-group hostility is driven by a competitive orientation. Though this explanation provides an insight and contributes to the in group- out-group debate, it simultaneously fails to consider that there are opportunities for inter-group dependence and intra group differentiations (Hogg, 1996; Turner and Bourhis, 1996). Particularly in an era of globalisation, communication and division of labour simultaneously permits interdependence and competition across and within social groups. However, when the researcher shares commonalities as well as differences with the participants of the study, this tends to blur the clear cut distinction between insider and outsider (Merriam *et al.*, 2001).

Consequently the researcher had to negotiate the associated murky water which also presents opportunities to access difficult to reach participants. It is this blurred identity of the researcher which therefore necessitated the use of social networks as a means of

accessing research participants in the formal organisation sector, in a sense employing the informal to access formal structures. Also Harries-Jones (1969) in a discussion of 'home-boyism' describes that members in a network defined by association based on for instance kinship, tribal or political party tend to be 'obliged to render mutual services' to each other. It was this obligation to the networks that permitted the recruitment of some participants for this research.

This research has demonstrated that both conventional and 'informal' means could be employed in recruiting participants for research purposes. However being open to this dual approach may raise ethical concerns which the researcher needs to be aware of and address to ensure that participants are not exposed to any risks. Secondly in adopting this approach one needs to bear in mind that the consent of participants is sought. Determining consent can be problematic especially if the participants are duty-bound by hierarchy, obligations to a network or have limited knowledge of the subject matter to make an informed decision.

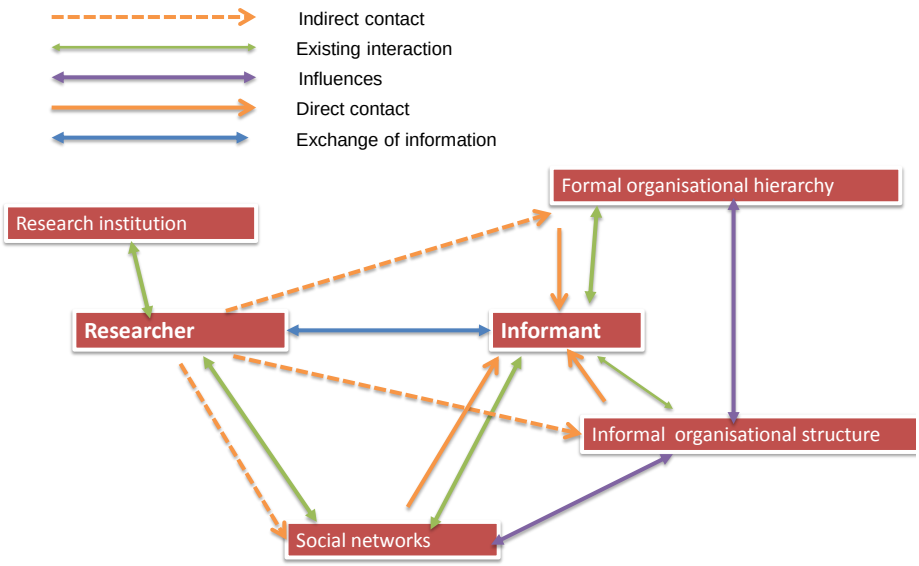


Figure 4.2 Pathways of recruiting participants for this research

Source: Developed by the researcher from fieldwork data

4.5 Conclusions: The role of reflexivity and relations in knowledge production

This section has highlighted that the fieldwork in this context was characterised by manifestations of contradiction in the following concepts: objectivity and subjectivity in meaning and representation of the subject of inquiry, formality and informality organisational hierarchical power. Complexity in conceptualisation presents when the research encounters social forces and consequently these tend to challenge research ethical procedures and guidelines. To identify and understand these social encounters requires that the researcher adopts a reflexive stance, by which the researcher is then aware and

equipped to appreciate and manoeuvre the field whilst taking into account ethical principles of beneficence and maleficence.

Adopting a reflective stance for this research permitted a 'self-critical sympathetic introspection and self-conscious analytical scrutiny of the self as a researcher' (England, 1994: 244). It also allowed for the researcher to engage in 'personal introspection' and 'personal accounting' (Hertz, 1996: 5). The 'self', being the centre of the reflexive, process has been the basis of most criticisms. Possibilities are that in the process of reflexivity there could be a shift in focus from the phenomenon under study or the 'researcher's voice may overshadow the participants' or 'researchers get lost in endless narcissistic personal emoting or interminable deconstructions of deconstructions where all meanings get lost' (Finlay, 2002: 226). Other scholars also describe it as 'mere navel gazing' (Okley, 1992) or 'self-adoration' (Babcock, 1980). These criticisms have justification particularly where the reflexive process ends in self-indulgence or self-obsession.

However the reflexive approach in this study did not end with just a self-analysis narrative but also attained significance since it 'connected to a wider purpose or agenda about how the world should be and how the world needs to change' (Hopkins, 2007: 387) . Therefore a 'double reflexive gaze' approach looking both inward to the identity of the researcher and outward to her relation to the

researched, (what Rose (1997: 309) described as the wider world) was adopted in this process. This research which draws on fieldwork experience in Ghana argues that a combination of self-reflexivity and positionality of the researcher/researched is essential in striving towards an inclusive and ethical production of knowledge. Moreover adopting a reflexive positionality stance in this research provided an opportunity to identify issues which may induce personal biases (Padgett, 1998) and hinder an approach to the research which may ensure validity of data and methodology.

As observations in this study emphasize, informality tends to be also manifested in research interaction with participant actors in formal national and urban political institutions. Inflexible adherence to formality and institutional structures in setting up and conducting studies in such settings has the tendency to produce limited information from participants and in some cases hinder the research process. The tendency towards informality in structure and interaction by actors in these institutions needs to be recognized by researchers and steps taken to accommodate these tendencies in preparing and conducting research. However the integration of formality and informality in political institutions creates an ambiguous space, which may at times be daunting to manoeuvre even for the researcher familiar with such an environment. This ambiguity is presented not only structurally in the organisational

structure and interaction but also as subjective meanings of ‘climate change’. Though climate change resilience as an idea has a generally accepted definition, what the idea means to the participants is also dependent on their experience, expectations and individual tastes (Hulme, 2009).

Consequently, the researcher in investigating a socially constructed phenomenon such as climate change need not be oblivious to the coexisting social processes and the subjective interpretations and meanings defined within social settings (Pettenger, 2007) that tend to be interacting with the research subject and researcher. This is particularly so when the research method requires interacting with the participants within a social environment characterised by dynamism, contradictions and complexities (Unruh, 1980).This makes it more impractical to adopt a conventional impersonal and neutral approach to climate policy research. The social world and its complexities, contradictions and dynamism inhibit the applicability of the subject-object dichotomy and a detached approach by the subject or researcher inherent in positivist research. The discovery and justification process, and the intellectual product and process of production may be regarded as a single entity. Ignoring or failing to present the micro/macro political, social and economic processes already in operation whilst conducting climate change policy research tends to render such knowledge produced as partial. The

challenge for climate change policy research therefore remained to consider the underlying socio political processes operating within the context of the subject matter whilst retaining the research content and ensuring validity of the data generated.

5 A Review of Ghana's National Climate Change and Urban Policies

Chapters One and Two observed that the urban context appears to be marginalised in national climate change policies by the majority of African governments (Satterthwaite *et al.*, 2007b; Simon, 2006; UN-Habitat, 2012). In view of this, this chapter draws from desk reviews of available literature and policy documents to evaluate the extent to which the urban context is reflected in climate change policies and vice versa, in Ghana. Using content analysis, this chapter draws on Government of Ghana climate change strategies, National Communications (EPA, 2001; EPA, 2011), National Climate Change Adaptation Strategies (EPA, 2009) and Draft National Urban Policy (MEST, 2012a) for evaluation. Secondly, the Draft Ghana National urban policy (MLGRD, 2010a) is assessed for climate change components. Firstly the international and national institutional contexts are defined to provide a background for the Government of Ghana policy responses and strategies. Following this descriptive narration, Ghana national urban and climate change policies are evaluated and rationales suggested for the extent to which urban contexts are reflected in climate change policies, and vice versa.

5.1 The international context of national climate change policies

It appears, perhaps for countries in the global south, that the political impetus for addressing climate change adaptation and resilience has its origins within international relations conventions. National policy response to the adverse effects of climate change rests on an institutional architecture which incorporates frameworks adopted under obligations to international conventions, as well as requirements under national regulations. During the Rio Earth Summit in 1992, 192 countries signed and adopted the United Nations Framework Convention on Climate Change, UNFCCC, which came into force in 1994. The primary objective of the UNFCCC was to guide parties with the common aim of achieving a 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system' (UN, 1992: Article 2). Though parties signed the UNFCCC in 1992, it came into force against the backdrop of other recognised earlier conferences, conventions and a number of UN General Assembly resolutions as well as research by organisations such as the World Meteorological Organisation (WMO) and UNEP. By September 2011, 194 countries have signed the convention and 192 had ratified the Kyoto Protocol on climate change, setting binding targets for developed countries under the UNFCCCC, which came into force in 2005. As a result signatory

parties are expected to fulfil their obligations under the UNFCCC and the Kyoto protocol.

One of the obligations which assumes particular relevance for this study has been Article 3(3) (UN, 1992) of the Convention which highlights that 'The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects'. Earlier Conferences of Parties (COP) recognised and highlighted the highly vulnerable situation of developing countries, particularly Least Developed Countries (LDCs), to the adverse effects of climate change. However a recent COP 16 report highlights that adverse effects of climate change have increasingly been recognised as a challenge for all countries, both developing and developed (UN, 2011a:11). Nevertheless, the adverse impacts are obviously disproportionately towards developing countries, particularly LDCs, where the capacity to respond is weak. Consequently parties are invited to develop and promote action on adaptation, by enhancing 'climate-related disaster risk reduction strategies' and 'building resilience' among other approaches (UN, 2011a:14) taking into account the Hyogo Framework for Action.

A decade after the UNFCCC came into force, a UN resolution was passed on disaster reduction (UN, 2004) which then culminated in the World Conference on Natural Disasters in 2005 and the Hyogo

Framework for Action (HFA) on building the resilience of nations and communities to disasters (UN, 2005) including those related to climate change. The HFA, a non-binding and action oriented framework, has been adopted by 162 states of the UN. Fig. 5.1 shows that central to achieving the expected outcomes of the HFA are an overarching aim and three strategic goals.

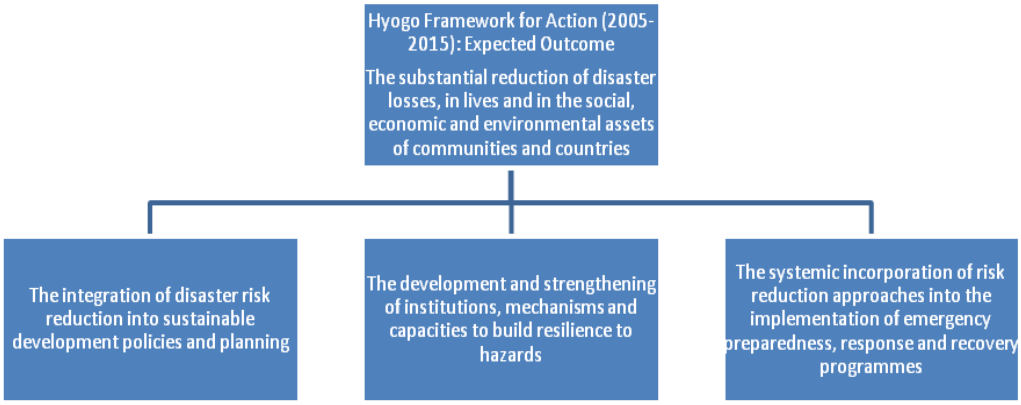


Figure 5.1 Strategic expected outcomes of the Hyogo Framework Action

Source: Adapted from UN (2005)

Though the objectives of climate change adaptation (under the UNFCCC) and climate-related disaster risk reduction (under the HFA) seem to be pursued along parallel international institutional trajectories, they appear to work towards a common goal, of building resilience and adaptation to climate-related to climate change. A preferred approach advocated by scholars from both climate change adaptation and disaster management disciplines would be an

integration of climate change adaptation and climate risk reduction (Mercer, 2010; Schipper and Pelling, 2006; Westgate, 2010). With the international context background in mind, this chapter explores how far Ghana appears to be adopting a seemingly multifaceted strategy, which intends to integrate natural disaster risk reduction and climate change adaptation in national development plans, and eventually into local plans.

Ghana is classified under the UNFCCC as a Non-Annex 1 country, a group of developing country parties who are considered vulnerable to the adverse impacts of climate change. These countries, in contrast to Annex 1, are not under treaty obligation to reduce their emission targets from 1990 levels by the year 2000 and are eligible to host parties for Clean Development Mechanism (CDM) projects. In September 1992 Ghana, a UN member state since 1957, signed the UNFCCC. It ratified the convention in December 1995 and subsequently the Kyoto Protocol a decade later in May 2005. Though the sovereignty of party states is reaffirmed, by assigning to the UNFCCC the Government of Ghana is subject to obligations under the convention. Particularly relevant for climate change adaptation are Articles 3(3), 4(1e) and 12(1) (UN, 1992) of the UNFCCC which stresses the call for parties to commit to mitigating the adverse effects of climate change. The Government of Ghana adopted the Hyogo Declaration, following the World conference on

disaster reduction in 2005. From the foregoing, international obligations could be seen as critical in initiating and driving the integration of climate change Adaptation and disaster risk reduction in development planning. A question one may ask is that, prior to UNFCCC and HFA, what considerations, if any, existed for climate change development planning in urban areas in Ghana. Secondly to be considered are how these obligations have been translated into practical programmes of mitigation and adaptation at the urban context.

For Ghana, national development planning institutional frameworks contain inherent requirements and directives which are intended to ensure development is resilient to adverse weather conditions. It is essential to point out that prior to the establishment of international obligations on climate change; institutional frameworks held provisions which sought to ensure that development planning in urban areas considers the prevention and managing the impact of climate-related national disasters. For instance the Ghana National Building Regulations (MOWH, 1996 Article 13 (2)) state that 'No site liable to flooding shall be built upon without adequate provision for flood control'. Regulations are also provided for thermal insulation of building and allocation of green urban space in the Town and Country Planning Ordinance (MOWH, 1996; NADMO, 1996). In view of the impacts of climate change on urban

infrastructure, recommendations have been made for the review of urban planning regulations (AAP-EPA, 2012). However reduction of greenhouse gas emissions is a novel policy for these institutional frameworks, although guidelines had been provided at reducing air pollutants[29].

The 1992 constitution of the Republic of Ghana spells out that 'The State shall take appropriate measures needed to protect and safeguard the national environment for posterity'... and 'safeguard the health and safety of all persons'(Ghana, 1992 Article 6:9, 10). By implication the state assumes a significant protective role towards its citizens. Similarly, Act 517 of Ghana Parliament, which established the National Disaster Management Organisation (NADMO), provides an institutional framework for addressing the adverse effects of natural as well as manmade disasters. Since the establishment of NADMO in 1996, the organisation has been a key actor at the forefront of managing and preventing disasters particularly related to flooding in cities like Kumasi and Accra[30]. The Local Government Act 1993 stipulates that the district assembly has the responsibility for the development, improvement and management of human settlements and the environment' as well as

[29] The Environmental Protection Act 1994, Act 490, Article 2(h) states that The EPA shall 'prescribe standards and guidelines relating to the pollution of air, water, land and any other forms of environmental pollution including the discharge of waste and the control of toxic substances'

[30] Key informant 14, 15th August 2011

'maintaining security and public safety' (Ghana, 1993: 10(3)). The National Development Planning Commission Act 479 also states that one of its obligations is to 'make proposals for the protection of the natural and physical environment' (Ghana, 1994a:2(2e)).

To an extent it seems the impact of climate-related disasters on development in urban areas has been addressed by or is anticipated by these institutions prior to the introduction of the subject 'climate change' policy initiatives. However these institutions have been considered less effective at averting the adverse effects of climate-related events such as flooding and droughts in urban areas as required by the provisions of the mandate[31]. Moreover climate change and the adoption of the UNFCCC present new challenges as well as opportunities towards change for the existing national institutional frameworks enumerated above. This raises the question of whether and to what extent the National Development Planning Commission and NADMO are effective at addressing climate-related disaster impacts on urban development in Ghana. The international obligation to address climate change presents an opportunity as well as national and international legitimacy for the national institutions to further address climate change development. There is an ascribed legitimacy to national institutions, actions in dealing with climate change by invoking international obligations.

[31] Key informant 8, 10th August 2011, and Key informant 14 , 15th August 2011

Since these state institutions carry mandates for the protection and sustainability of the physical environment, they are evidently existing frameworks for the integration of CCA and DRR in development planning. By the establishment of a globally recognised institutional architecture for climate change the concerned national institutions are directly accountable or contribute to reporting to international agencies such as the UNFCCC and the Hyogo Framework of Action. As such NADMO and NDPC have additional responsibility to report to international frameworks in addition to national and local obligations.

Within its schedule of commitments to the UNFCCC the national focal team, which is the Environmental Protection Agency, is required to produce national reports (UN, 1992:4,12). Currently two national reports (National Communications) have been submitted to the UNFCCC (EPA, 2001; EPA, 2011) highlighting Ghana's attempts in areas of mitigating climate change and adaptation to the impacts. With the integration of climate change adaptation concerns in development planning, the NDPC, through the annual reports on development plan implementation, indirectly contributes to reporting scheme on Ghana's progress on addressing climate change. Also, since signing the HFA, NADMO has been reporting to the -United Nations International Strategy for Disaster Reduction (UNISDR) and

also accounts to the National Security Council, the governing body within the ministry of Interior (NADMO, 1996). The responsibility of DRR and CCA lies within different departments, NADMO and Climate Change. This underscores that though there is need for disciplinary integration the strategies in Ghana continue to be pursued along different pathways. Consistent with Mercer's (2010) conclusion on a study in Papua New Guinea, Ghana's approach to CCA is largely top-down, whilst DRR is both top-down and bottom-up.

The UNFCCC and HFA institutional framework has established that national governments are required to formulate climate change policies. This is expected to be done in addition to mainstreaming in development plans and existing state institutional frameworks for addressing disasters in Ghanaian cities. In Chapter 3 it was established that international obligations to conventions and treaties have been influential in diffusing climate change policy ideas. This is confirmed in Ghana where the international obligation is mentioned by the National Climate Change Focal team[32] as a contributing factor in driving the initiation of climate change policies. Ghana's response has been to formulate national policies and prepare National Communications to the UNFCCC. The Government of Ghana (GOG) has formulated the National Climate

[32] Key informant 5, 5th August 2011

Change Adaptation Strategy and is in the process of consolidating a National Climate Change Policy (MEST-Ghana, 2012). Also with regards to urbanisation, the government through the Ministry of Local Government and Rural development has formulated the Draft National Urban Policy Framework (MLGRD, 2010b).

5.2 National agenda on climate change and urbanisation in Ghana

National level climate change policy and strategies have been initiated by the government of Ghana in response to the threat of climate change and the challenges of urbanisation. The subsequent sections present the National Climate Change Policy, Ghana National Adaptation Strategy and the National Urban Policy.

5.2.1 National Climate Change policies

The National Climate Change Policy (NCCP) was initiated through the National Climate change committee (NCCC), under the Ministry of Environment Science and Technology. The aim was to ensure 'a climate change and climate compatible economy while achieving sustainable development and equitable low carbon economic growth for Ghana' (MEST NCCC, 2010:16). The NCCPF (MEST NCCC, 2010:16-20) highlights vulnerability to the impacts of past climate-related disasters for addressing climate change in Ghana. Significant economic, development and infrastructural benefits are emphasized as motivating the pursuit of a low carbon growth economy. Possible

business opportunities and access to international funds are mentioned in the policy framework as incentives for pursing a low carbon growth economy. The NCCPF seeks to pursue this aim through three objectives - low carbon growth, effective adaptation to climate change and social development. To achieve this, the climate change policy intends to focus on five thematic areas and ten policy areas. A predominantly sectoral approach is adopted in allocating resources and the urban-rural spatial dimension is underrepresented in the national climate change policy[33].

The NCCPF seeks to address the physical impacts of climate change with an emphasis on four selected areas, namely, infrastructure, natural resources, agriculture and food security, as well as preparedness and responsive to disasters. Studies indicate that these sectors are considered highly vulnerable to climate change and require methods for effective adaptation (EPA, 2001; EPA, 2008; EPA, 2011). In addition to the physical impacts, the third objective of the NCCPF states that climate change is likely to affect the social dimension of the Ghanaian populace. In order to achieve these three objectives the policy framework rests on seven operational pillars through which the objectives of the NCCPF are expected to be achieved (as shown in Fig 5.3).

[33] Key informant 3, 5th August 2011

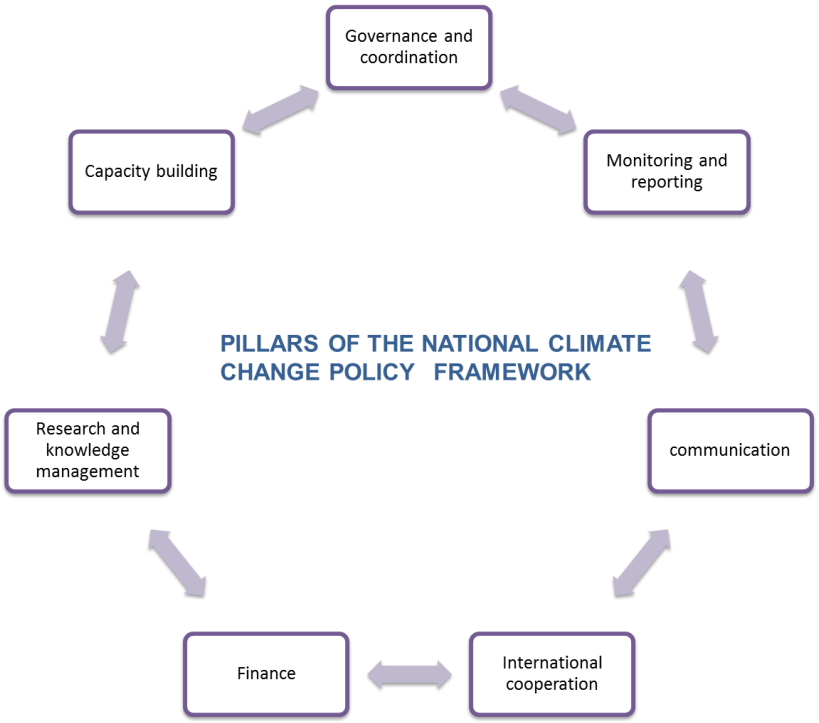


Figure 5.2 Seven pillars of the Ghana National Climate Change Policy

Source: Adapted from National Climate Change Policy Framework, 2010

An Assessment of the National climate change policy framework pillars

As at 2012 the NCCPF was in the later stages of consultation and consolidation. The document provides an opportunity to assess the policy framework and the potential for delivering climate resilient development. The assessment which is addressed in this section is based on the seven pillars of the policy framework - governance and

coordination, capacity building, research and knowledge management, finance, international cooperation, communication and monitoring and report.

Governance and coordination have been mentioned in the NCCPF as critical to the efficient operation of the climate change policy framework. Initial initiatives have been directed at national level coordination in the form of the national climate change team within the Ministry of Environment Science and Technology. Preparation of national adaptation strategies and communications presented opportunities for the formation of national level cross sectoral committees on climate change and disaster risk reduction. The framework argued that effective governance will ensure coherence and coordination in the various agencies and responses on climate change as well as addressing local level responses. In addition the policy framework intends to recognise the active contribution of development stakeholders such as NGOs, the private sector in the governance of climate change. Though the top down approach to governance and coordination in the policy framework is regarded as necessary, it is not sufficient to ensure achieving set objectives of the framework. Sub-national governance structures, at the regional and district levels, would need to be in place to ensure coordination of climate change action at all levels of government. In the face of limited expertise on climate change, such an approach would require

building the capacity of related governance structure to address the new challenges climate change presents for policy decision making.

The NCCPF reiterates the need for capacity building particularly 'skilled climate science' and for 'district level to implement local initiatives' as well as that for international negotiation skills (MEST NCCC, 2010:31). Recognition is given to extending building capacity beyond those already engaged in current climate debates to include the private sector and local community. However attempts at capacity building for climate change would be faced with constraints in availability and accessibility of climate change information and data. This deficiency in climate change data is intended to be addressed by the NCCPF. Particular mention in the policy is made of promoting research development in climatology and meteorology for building models which would then be utilised in informing climate change policy decision making. Furthermore the research development objective seeks to develop a science-end users' nexus so as to make climate science understandable and relevant. In this sense communication of the climate change agenda is regarded as essential to achieving the objectives of adaptation and green economy. Processes of communication hence seek to go beyond informing and public awareness creation on climate change to 'encourage real engagement on the issue' (MEST NCCC, 2010:35). Although the climate science aspect of research is considered

relevant, attention needs to be granted to research the policy making dimension of climate change.

The NCCPF highlights that critical to achieving the objectives and maintaining the pillars are the sustained availability of climate change finances. The World Bank puts the cost of adaptation in Ghana at between $158 million-$765 million per annum up to 2020 [34] (World Bank, 2010c). Not surprisingly there is acknowledgement in the NCCPF that international donor financial resources are vital in supporting adaptation and meeting the associated costs, citing limited state funds as a constraint on addressing climate change in Ghana. For instance oil and non-oil revenue for 2011 fiscal year budget was estimated at GHS 10,017.8 million. Cost of climate change adaptation would then take up a substantial amount, between 3%-14%, of the total revenue generated from crude oil. International funding is therefore considered a vital source of supporting programmes addressing climate change in Ghana.

Monitoring and reporting is mentioned in the NCCPF as essential for effective operation of the policy framework. Three aspects are mentioned arguing for the relevance of monitoring and reporting. Firstly monitoring and evaluation constitutes a significant component of the policy process. Climate change policy making and

[34] Approximately GHS 304.4 million-GHS 1,473.8 million.

implementation would therefore involve monitoring and evaluation as enshrined in the medium term plan policy framework, Ghana Shared Growth and Development Agenda (GSGDA) for efficient use of resources. The second component would involve monitoring change in climate patterns and the consequent impacts to provide a basis for effective planning and interventions. Thirdly, in line with Ghana's reporting requirements under the UNFCCC, particularly the Measurement, Reporting and Verification (MRV) system, the NCCPF would consider reporting schedules on assessing climate change and the effectiveness of planned interventions at mitigation and adaptation. The reporting schedules to the UNFCCC are also mentioned in the NCCPF as relevant for receiving international technical and financial support. Not only is accessing international funding regarded as essential for climate change planning, but international cooperation is intended also to 'preserve Ghana's strong relationship with donors'

Ghana National climate change adaptation strategy (2010-2020)

The National Climate Change Adaptation Strategy (2010-2020) is the flagship strategy document developed by the government of Ghana in collaboration with and supported by a joint UNEP/UNDP programme with funding from the Danish Ministry of Foreign Affairs. The Natural Resources and Environmental Governance Programme being carried out through the World Bank has been

mentioned in the climate change adaptation strategy as a trigger for developing the NCCAS (EPA, 2009: 6). NCCAS recognises that measures targeted at addressing building resilience and reducing vulnerability to climate-related risks have been reactive, relatively costly and consequently less effective.

This claim was shared by participants in this research who acknowledged that responses to climate-related disasters such as floods across the country have been more reactive and not proactive. 'Responses to disasters are tied in with the cycle of weather events, therefore are post disaster and reactive'[35]. Though attempts have been made by the NADMO to be more proactive there are institutional and legislative constraints which tend to limit the capacity of the organisation.

> 'NADMO cannot perform a lot of other functions because of the lack of legal backing. As an organisation we do not have the legal authority to enforce but only advise'[36]

Recommendations have been made to grant greater legislative powers to NADMO following the 2010-2011 constitutional review process (CRC, 2011). The NCCAS has the potential to create an enabling environment, legislative and policy framework for climate change adaptation planning.

[35] Key informant 8 , 10th August 2011
[36] Key Informant 13, 15th August 2011

The goal of the NCCAS is to 'enhance Ghana's current and future development to climate change impacts by strengthening its adaptive capacity and building resilience of the society and ecosystem'. As a result three key factors are mentioned in the policy document as critical in achieving this objective: building infrastructural capacity for resilience, knowledge base in addressing the impacts of climate change and reducing vulnerability in key sectors, ecosystems districts and regions. Through a series of sectoral studies a preliminary proposal of seventy five adaptation initiatives were selected. The multiplicity of sectoral programmes required a review through an application of the Akropong approach to multi sectoral project planning (Kemp-Benedict and Agyemang-Bonsu, 2008) which resulted in ten programmes being adopted for implementation. Particularly relevant in this approach was the assessment and prioritisation process which sought to identify the interrelations, conflicts and synergies between the different sectors and evaluation of the options through a multi criteria analysis (MCA). The MCA involved stakeholder participation in the evaluation and prioritisation process. The prioritised areas and adaptation programmes are presented in Figure 5.3

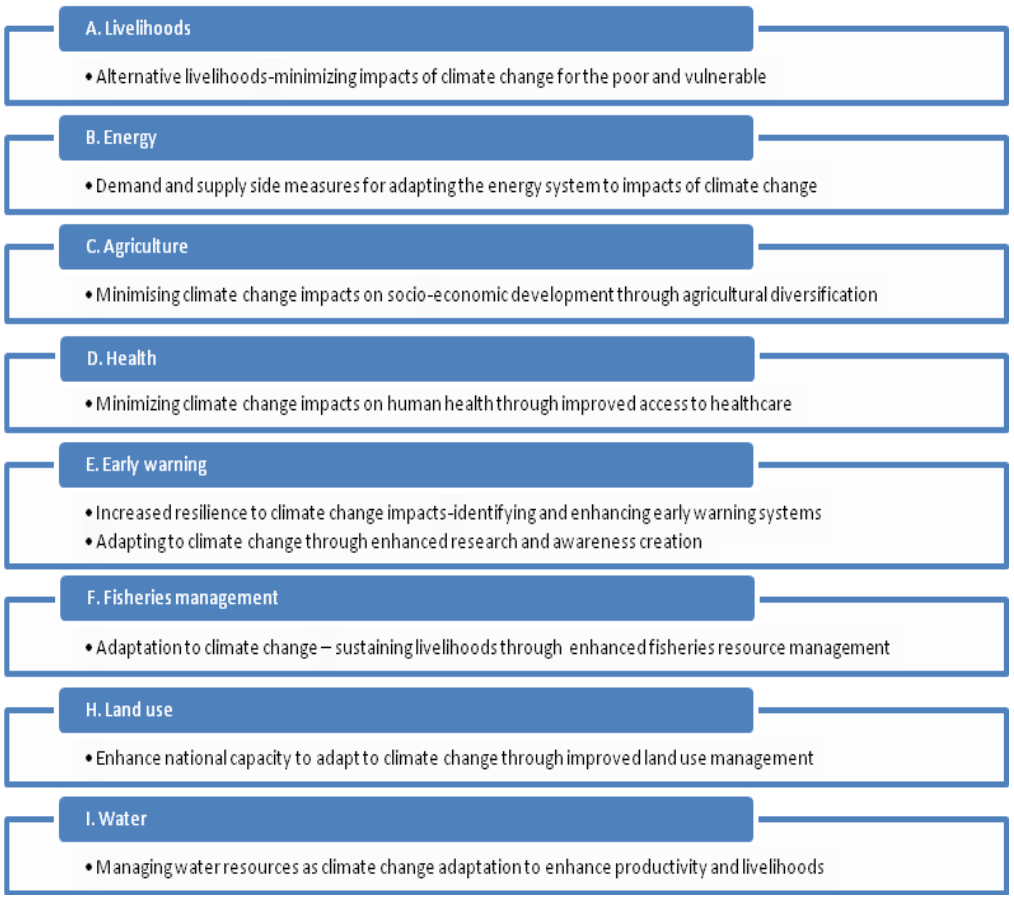


Figure 5.3 Ghana National Climate Change Adaptation Strategy focus areas

Source: Derived from data in the Ghana National Climate Change Adapation Strategy (EPA, 2009)

Critical for the efficient operation of the NCCAS are the implementation arrangements and availability of resource funds. Local as well as national agencies form part of the implementation structure. At the national level the lead institution for implementing the NCCAS is the Ministry of Environment Science and Technology supported and assisted by the National Climate Change Committee.

The National Development Planning Commission (NDPC) is also enlisted as a liaison in mainstreaming adaptation in development planning. At the regional level the NCCAS proposes a climate change adaptation monitoring committee to supervise, and act as a link between NCCC and the MDA. At the sub-national level the district level is regarded as the most crucial level for implementation. The existence of the Metropolitan/District assembly environmental committee is mentioned in the adaptation strategy document as an appropriate channel for the development and implementation of the local climate change adaptation strategy (EPA, 2009: 23). However the MDA would need to work in collaboration with NGOs, Community Based Organisations, traditional authorities and the private sector.

As a result the sub-district level communities would be required to prepare community based adaptation programmes which will then feed into the district adaptation plan and budgeting process. With regards to funding the Ministry of Finance and Economic Planning (MOFEP) would be designated as the National Implementation Entity (NIE), and charged with disbursement of adaptation funds. Funds for the adaptation strategy are to be drawn from international as well as state finances. These include the UNFCCC Adaptation Fund, multilateral, bilateral climate change related funding mechanisms, and contributions from the Government of Ghana.

Metropolitan/District assemblies are required to address climate change adaptation concerns in the development plans as stated in the National development planning guidelines for MDAs.

The National Climate Change Adaptation Strategy recognises the key role of metropolitan and district assemblies for achieving effective national outcomes in integrating climate change concerns in development planning. The extent to which local governments have responded to the NCCAS directives will be explored further in Chapter 6. Beforehand, it is necessary to consider how climate change mitigation and adaptation are reflected in the Ghana National Urban Policy.

5.2.2 Ghana National Urban Policy-Integrating climate change policy ideas

In March 2013, the government of Ghana launched the Ghana National Urban Policy (GNUP) which is set to pilot in Accra Metropolitan Assembly, and then subsequently rolled across all urban areas in the country (GNA, 2013). The National Urban Policy seeks to 'promote a sustainable, spatially integrated and orderly development of urban settlements with adequate housing and services, efficient institutions, sound living and working environment for all people to support rapid socio-economic development of Ghana' (MLGRD, 2011: xi). One of the ten objectives of the GNUP is to promote the adoption of climate change

adaptation and mitigation mechanisms by metropolitan governments, as shown in Figure 5.4. The GNUP, a state intervention, explicitly mentions promoting strategies for addressing climate change adaptation and mitigation for urban areas in Ghana. However during the study period, metropolitan governments' activities to initiate policy response to climate change in the medium term plans was in response to the directive in the NDPC guidelines for planning period 2010-2013. Though the GNUP is worth mentioning, it was vital for this study to explore development planning guidelines metropolitan governments were familiar with.

Agriculture and food security	Develop climate resilient agriculture and food systems
Disaster preparedness and response	Building climate resilient infrastructure
	Increase resilience of vulnerable communities to climate related risks
Natural resources management	Increase carbon sinks
	Improve management and resilience of terrestrial and aquatic ecosystems
Equitable social development	Addressing impacts of climate change on human health
	Minimise impacts of climate change on access to water and sanitation
	Address climate change and migration
Energy, industrial and infrastructural development	Minimise Greenhouse gas emissions

Figure 5.4 Ghana National Urban Policy focus areas

Source: Prepared with data from EPA, 2012.

National development planning framework

The National Development Planning Commission (NDPC) is mandated with the task of preparing long and medium term policy guidelines, to guide development planning by the various ministerial sectors and at the district level. Since the long term plan titled Ghana: Vision 2020 was drawn in 1995, four medium term development plan frameworks have been developed. The First Medium Term Plan (1997-2000) was developed based on the long term development plan, Vision 2020. On the other hand the second and third medium term plans, Ghana Poverty Reduction Strategy I (2003-2005) and Growth and Poverty Reduction Strategy II (2006-2009), were initiated as a conditional requirement for meeting IMF Highly Indebted Poor Country (HIPC) initiative. The fourth and current medium term policy framework, termed Ghana Shared Growth Development Agenda (GSGDA), was adopted with the expectations of accommodating the economic implications of oil discoveries, and attainment of middle income status. The objectives of the GSGDA were based on the Ghana Better Agenda and Coordinated Programme of Economic and Social Policies 2010-2016 (Ghana, 2010).

As part of its obligations, the NDPC is constitutionally required to prepare broad national development plans. In this pursuit the NDPC produces national policy guidance framework for sector ministries and district assemblies to prepare medium term development plans. District assemblies (DA), the administrative authorities for local government, have been granted political, administrative and financial authority under the 1992 constitution of the Republic of Ghana, article 34:5(d). Similarly the DAs' designation as a planning authority under the Local Government Act 1993 article 12(1) grants it the authority to prepare local development plans, which then culminate into a regional plan, and finally a national development plan. Notably local development planning takes place within a national framework, in this case the Ghana Shared Growth Development Agenda (GSGDA), and therefore all district and sector ministry medium term plans are expected to conform to nationally set objectives.

For the purposes of this research the GSGDA (2010-2013) was the medium term national development policy framework under investigation. The GSGDA policy framework was the based on seven (7) thematic areas, as shown in Figure 5.5. These thematic areas were established through consultation with a Cross Sectoral Planning Group (CSPG), consisting of development partners, civil society groups, selected research institutions and government

ministries. Two thematic areas of the GSGDA are essential for the purposes of this research on climate change development planning for urban areas.

Figure 5.5 GSGDA Key thematic areas

Source: Prepared with data from GSGDA (NDPC, 2010)

Addressing natural disasters, risk and vulnerability as well as climate variability and change is to be addressed under thematic area title 'accelerated agricultural modernisation and sustainable natural

resource management' (NDPC, 2011:49-51). Secondly 'settlement disaster prevention' is a sub-theme under 'Infrastructure and human settlements' (NDPC, 2011:69,70). As a result the MDA were expected to present strategies for addressing climate change in their development plans for 2010-2013. How the guidelines were responded to by local governments in the MTDP will be addressed in the Chapter 6.

The Ministry of Finance and Economic Planning in a memo to MMDA and sector ministries on budget guidelines for the preparation of the 2012-2014 budget for the medium term plan 2010-2013 stipulates that 'MDA are to ensure that climate change issues are given consideration in the preparation of their budget' (MOFEP, 2011: 5.5). National budget statements from 2009 to 2012 fiscal years to parliament also reiterate the impact of climate change on development. Funding streams from donor partners were mentioned by state officials[37] as an important source of finance for climate change projects in Ghana. This is obvious considering that multilateral and bilateral agencies and international NGOs, though scattered and uncoordinated, have been influential in driving action on climate change in Ghana (Cameron, 2011: 7). The then chairman of the parliamentary select committee on Environment, Science and Technology is reported to have that sector ministries had no planned

[37] Key informant 3, 5th August 2011 and Key informant 5, 5th August 2011

statements and budget plans allocation had been made for climate change in the 2012 fiscal year budget (Times, 2011). This obviously questions Ghana's commitments to addressing climate change despite directives for mainstreaming climate change in development planning. Despite the financial constraints and a heavy reliance on international funds for climate change mitigation and adaptation initiatives in Ghana, the government has instituted policies and directives for addressing urban development and climate change.

5.2.3 Compatibility of climate change policies and urban development strategies

The government of Ghana has been making efforts at institutionalising policies to address climate change and manage urban development in Ghana. These policies are being formulated under different institutional frameworks and coordinated by ministries with varying mandates. However for effective climate change policies cross ministerial integration would be essential. The National Climate Change Committee (NCCC) is comprised of twenty organisations comprising ministries, agencies, civil society organisations and donor partners.

The National Climate Change Adaptation Strategy (NCCAS) and National Climate Change Policy (NCCP) are explored in this section to identify the extent to which reference is made to addressing sub national level and consider a spatial dimension. As previously

stated, the NCCAS adopts a sectoral approach focusing on nine key sector areas and the spatial dimension appears to be missing in focus areas. A situational analysis highlights the key areas vulnerable to the impact of climate change[38] which then form the basis for implementation strategies and programmes. Studies initiated by the government of Ghana under the Netherlands Climate Change Assistance Program (NCCAP) formed the basis to launch the NCCAS specified focus areas. Despite the missing urban spatial dimension in the studies the sub national context is mentioned as the 'most crucial level for the strategy implementation' (EPA, 2009:16) .

Implementation arrangements under the NCCAS consider that regional coordinating councils and district assemblies as implementing agencies would enhance a decentralised and participatory approach to addressing climate change in Ghana. Metropolitan and district assemblies through the Environmental sub-committee are required to prepare and coordinate district/metropolitan adaptation plans. Sub-committees of the MDA executive governing committee are established to 'collating and deliberating on issues relevant to it as the district may direct for the purpose of assisting the district in its deliberative, legislative and executive duties'(Ghana, 1993:25(I)). The environment sub-committee is set up at the discretion of the MDA, not explicitly

[38] These key areas are mentioned as a) Economic Impacts: water, agriculture, natural resources and energy; b) Social Impacts c) Impacts on infrastructure

mentioned in the mandatory list of subcommittees (Ghana, 1993:24(I)). The sub-committees are deliberative and submit recommendations to the executive committee which passes these on to the General Assembly for approval. The sub-metropolitan areas are also requested in the National climate change adaptation strategy to prepare community adaptation programmes and projects which are expected to feed into the MDA adaptation strategy. The NCCAS implementation strategy recognises the critical role of the sub-national governance dimension in achieving a successful national strategy.

However for a holistic approach, which considers climate change as an environmental and developmental concern, adaptation strategies would have to be mainstreamed into all departmental and sub-committee deliberations not only as stand-alone projects or programmes. The Ghana NCCAS falls short in providing a comprehensive approach to address the urban context of climate change. Other West African countries make provision for the urban context in the national adaptation strategy. For instance the National Adaptation strategy and plan of Action on Climate Change for Nigeria (NASPA-CCN) identifies the crucial sub-national dimension. The NASPA-CCN explicitly grants a significant level of autonomy to state ministries to initiate climate change programmes for urban areas as well as develop risk maps and revise land use plans. ‘State ministries of Environment should not wait for Federal

Government action, but should take the lead in developing and implementing climate change adaptation action for large urban areas'(FME, 2011:52). This is probably due to the federal system of government which grants greater autonomy to Nigerian state governments.

The Ghana National Climate Change Policy (NCCP) mentions that the policy intends to promote measures implicitly addressing the urban context under Focus area 2: 'Building climate resilient infrastructure' and Focus 3: 'Increase resilience of vulnerable communities to climate-related risks'. References are made to the 'urban' context in the National Climate Change Policy (NCCP) with regards to drainage systems, agriculture and building resilience into building codes and regulations as well as road infrastructure. Specifically, the NCCP states that specific actions to be taken to address the threat of climate change to urban areas are ensuring climate change considerations are included in infrastructural design, building codes and spatial planning. In addition capacity building for construction and building stakeholders in integrating climate change and disaster reduction measures is also to be considered in the NCCP. Lastly, support intends to be provided for research into infrastructural design to withstand adverse weather conditions (MEST, 2012b:2.1). With regards to macro level processes for urban planning, the policy intends to include and enforce climate resilient in urban planning as well as building capacity of local government

authorities. Other detailed programmes of action are stated as climate proofing infrastructure and flood prevention. The NCCP spells out detailed description of climate change investment programme activities and planning for urban areas. Considering that national development planning usually adopts a sectoral approach, the introduction of a spatial context policy could be considered a significant step.

A climate change component is captured in the Ghana National Urban Policy. As stated earlier the goal of the Ghana National Urban Policy is to 'promote a sustainable, spatially integrated and orderly development of urban settlements with adequate housing, infrastructure and services, efficient institutions and a sound living and working environment for all people to support the rapid socio-economic development of Ghana'. In order to achieve this goal one objective is to 'promote climate change adaptation and mitigation mechanisms' and the NUP spells out strategies for climate change adaptation and mitigation action. Table 5.1 shows that the Ghana NUP proposes to work in collaboration with other agencies to promote climate action in specific areas.

Table 5.1 Ghana National Urban Policy implementing agencies

Activity under NUP	**Implementing agency**
Environmental standards	MEST, EPA, MWRWH / Water Resources Commission, MMDAs, MLGRD
Coastal zone and wetland management	MMDAs ,DGW, MWRWH/Hydro Section, DGW, EPA,
Managing water bodies and other natural resources	MWRWH/Water Commission, MMDAs, CSOs, RCC, Private sector, MLGRD, MEST (TCPD), RCCs, NDPC, LGS
Settlement structures and plans	MMDAs, (PPD)MEST, MOTI, EPA
Reduction hazardous substance by industry	EPA, Ministry of Energy, MEST, MOTI, AG's Department
Public awareness on energy conservation and climate change	NCCE, MoI, Ministry of Energy/Energy Commission, MMDAs, MDAs, Private sector, MOE/GES, MEST

Source: Derived with data from MLGRD (2011)

Organisational compatibility of urban and climate change policies

Climate change policy making in Ghana presents a plethora of agencies and actors at different governmental scales. The coordination and institutional responsibility for the three policies mentioned (National Climate Change Policy, National Climate Change Adaptation Strategy and the National Urban Policy) were assigned to two different ministries under separate mandates. The Ministry of Local Government and Rural Development (MLGRD) is the coordinating unit for the NUP whilst the NCCAS and NCCP would be coordinated under the Energy and Climate change department in the Ministry of Environment Science and Technology (MEST). Though under different sectoral ministries, the climate change and urban policies consider working in collaboration with other related ministries and state departments as key to achieving the goals and objectives.

The NUP has identified various ministries and departments/agencies as implementing agencies in promoting climate change adaptation and mitigation mechanisms for urban areas (MLGRD, 2011). In line with efforts directed at key areas of the National urban policy[39] the NUP mention agencies and ministerial departments with jurisdictional mandates as implementing agencies. Table 5.1

[39] Environmental standards, managing water bodies and natural resources, settlement structures and plans, awareness on energy conservation and climate change

indicates that implementation would require collaboration with other various departments. These agencies, as components of their organisational mandates, are already engaging in the assigned activities for addressing climate change adaptation through the NUP. It appears that the assigned tasks would seek to address climate change. However the organisations would also require a consideration of their programmes and factor in a climate change component to be compatible with the NUP. The cross sectoral activities of ministerial departments and agencies activities for climate change would be coordinated by the National climate change committee housed in the Energy and climate change team of the Ministry of Environment Science and Technology. However the MLGRD which is the coordinating ministry for the NUP seems to have played a limited role in drafting the National climate change policy framework[40].The National climate change policy provides an extensive description of collaborating agencies in ensuring climate resilience and disaster preparedness across sectors. The variety and complexity of organisational mandates engaged in integrating climate change policy ideas for reducing greenhouse gas emissions and building resilience in urban development planning and, vice versa, the urban context in climate change policies is a challenge that would need to be overcome for effective implementation.

[40] Key Informant 3, 5th August 2011

The process of integrating climate change in national urban policies and development frameworks and vice versa the urban context in climate change policies has received a degree of attention by the government of Ghana. The above discussions observed that the urban context is not always explicitly mentioned but tends to be more implied in the Ghana National Climate change adaptation strategy and the draft climate change policy. Development planning in Ghana has been sectoral and there have been hard line demarcations in sector ministry operations[41]. Urban planning requires a more integrated approach of different sectors. Moreover the spatial dimension has been generally missing in the NDPC approach to planning development[42]. The limited mention of the urban context in climate change policies in Ghana may seem to confirm scholars' assertion (Satterthwaite *et al.*, 2007b; Simon, 2010) that the urban context is missing in national policy. Yet the urban context seems to be implied in the national policies. However a further investigation of local government responses to national directives to integrate climate change will be presented in Chapter 6.

5.3 Drivers of national climate change policy initiatives in Ghana

Despite the limited overt urban context the Government of Ghana is making efforts at integrating climate change in national development

[41] Key Informant 7, 9th August 2011
[42] Key Informant 27, 1st September 2011

planning. Investigating the drivers of climate change policy initiatives has the potential to provide explanations for the limited specific urban context by national government. What drives state policy response to climate change? The response may seem obvious particularly when the threat to environment and socio economic activities have been identified as key in driving adaptation and mitigation policy initiatives (EPA, 2008; EPA, 2011). Two research questions directed at state policy makers provided insight into the drivers of climate change policy responses. First 'what prompted Ghana to respond to climate change?' was answered with main references to the climate sensitive nature of Ghana's economic base and the threat of climate change to the Ghanaian economy. The second question 'What would have been the consequences if Ghana had not adopted climate change initiatives?' highlighted the economic and reputational benefits. This study demonstrated that economic benefits and access to financial resources are factors that have contributed to triggering the initiatives for state policy responses to climate change. Secondly addressing climate change appears to be evolving as an international norm therefore Ghana not responding to climate concerns would probably dent the reputation of the nation[43]. In the next section the normative, conformity and rational choice drivers are discussed.

[43] Key informant 3, 5th August, 2011

5.3.1 Maintaining and enhancing international identity and status of Ghana

Climate change has gradually been consolidated as an international norm (Garcia, 2010), therefore non-responsiveness would probably be considered as 'deviant behaviour'. Among policymakers in Ghana, who were engaged in this study, addressing climate change appears to have been internalised and attained sufficient normative status. Membership of the United Nations and compliance with conventions and treaties has been a driving force for Ghana to adopt the UNFCCC in 1992 and ratifying the Kyoto Protocol in 1995. Commitments under the UNFCCC, Kyoto Protocol and the Hyogo Framework Action to address climate change through adaptation and mitigation initiatives are critical in influencing the preparation of the National climate change adaptation strategy. The cost of not responding to climate change is highlighted to explain further the impact on the reputation of the country: 'It would be negative publicity for Ghana not acceding to the convention, look at America.'[44]

The chair of the Environmental and Natural Resources Advisory Council implicitly highlights the threat of climate change to the reputation of Ghana:

[44] Key Informant 3, 5th August 2011

> ‘Ghana’s progress has been impressive, with our country outperforming many others to reduce hunger by the three quarters between 1990 and 2004. Our country is expected to achieve the first Millennium Development Goal on poverty and hunger-before the 2015 deadline. Ghana’s economy is in transition. We view climate change as a development challenge and we will give it the priority and urgency it deserves.’

The National Climate Change Policy framework reiterates ‘Ghana’s response to climate change is important given our good reputation in so many spheres from poverty reduction to health’ (MEST NCCC, 2010: 9). Likewise the NCCAS states that one intention of the adaptation strategy is to ‘strengthen international recognition to facilitate action’ (EPA, 2009: 1). Furthermore, the National climate change policy document states that ‘we (Ghana) have a respected role within the Africa group in climate negotiations and our track record on forest governance is linking us to global REDD+ processes’ (MEST NCCC, 2010: 14).

Assigning to the UNFCCC and the national communications addressing climate change concerns seems to indicate that this is widely accepted as normatively appropriate for member states of the United Nations. It appears therefore to have attained a status of modernity and it would be considered a dent on the image of Ghana if there is no concrete policy response. Policy measures regarding climate change can therefore be seen as a means of ‘keeping up’ the good reputation of Ghana at tackling development and

environmental concerns in the eyes of the regional and international community. Seeking to maintain the reputation of Ghana confirms Weyland's (2005) policy diffusion theory that normative imitation as a consequence of legitimacy seeking is a potential driver for adoption of a policy innovation.

The seeming quest for legitimacy and recognition within a global context is also in line with DiMaggio & Powell's (1983) assertion that policy makers adopt novel policies due to adherence to socially accepted norms of a recognised group so as not to be perceived as deviant. In the context of climate change the quest for legitimacy is directed towards recognition in a globalised political and environment. Normative imitations for seeking and maintaining status in a group, though contributory and a foundation, are not a sufficient driver to account for policy responses to climate change in Ghana, particularly when policy making involves a heterogeneity of actors with intrinsic preferences. From a rational choice view, this accounts for the limitation of the normative argument.

5.3.2 Economic benefits of addressing climate change

Rational choice arguments (Elster, 1986; Scott, 2000) would posit that policy makers in decision making processes consider expected utilities, rewards, benefits and costs of adopting a novel policy. In line with this, policy responses to climate change by the Government

of Ghana are perceived to carry benefits as well as costs. One of the five intentions of the NCCAS states that the adaptation strategy is to 'position Ghana to draw funding for meeting her national adaptation needs'(EPA, 2009: 5). The associated financial benefits of policy addressing climate change are also highlighted in the discussion with policy makers. For instance, a policy maker indicated that 'enshrined within the Kyoto protocol is a 2% funding from the Clean Development Mechanism (CDM) to promote and fund adaptation programmes which we could not have access to if we had not assigned to the convention'[45]. The EPA (2007:5) states that the

> 'Clean Development Mechanism under the Kyoto protocol holds great potential to promote technology development and transfer and can assist Ghana in attracting foreign direct investment in the energy, transport waste and land use change and forestry sectors where there are clear potentials to mitigate climate change by reducing greenhouse gases'.

This statement suggests there are recognised technological as well as investment benefits associated with engaging with climate change. The Kyoto Protocol specifies that developed countries assist in transferring technological know-how to developing nations (UN, 1992, Article 4.5). Generally key benefits of addressing climate change as described earlier in the Ghana national climate change policy and National Climate Change Adaptation Strategy emphasise reducing greenhouse gas emissions and increasing resilience to the

[45] Key Informant 3, 5th August 2011

adverse impacts of climate-related disaster. However policymakers' expected utilities extend to other developmental benefits. Consequently the Government of Ghana would, after considering the financial costs of policy responses to climate change, consider that the benefits far outweigh the envisaged costs. As this discussion has suggested, the normative and expected utilities argument are perceived from different perspective and disciplines yet are not mutually exclusive in policy decision making regarding climate change.

The policy documents prepared for addressing climate change in Ghana mention economic and development benefits as well as those to the nation's reputation. This shows that climate change was adopted as a policy initiative due to the recognition that it appears to have attained normative status (Garcia, 2010). The intended benefits and rewards of climate resilient policy and strategy are implicitly tied with maintaining and enhancing Ghana's reputation and consequently provide a significant motivation for responding to climate change.

In addition to the altruistic motivators of responding to climate change and the well-intended results of addressing climate change, such as reducing global greenhouse gases and reducing vulnerabilities and increasing resilience to adverse effects of climate

change, there are underlying perceived contextual and local related benefits. The global benefits need to resonate with the contextual. On the other hand the contextual identifies with the universal by drawing out associated benefits. The process of mediating the universal and contextual could also be evident in the national-local government scale. The directives in the medium term development policy framework, Ghana Shared Growth Development Agenda, require MDA to adopt measures to address climate change in the respective metropolitan and district assemblies. The national-local governance of climate change manifests in Ghana is considered to conceptualise the universal-contextual dimensions.

5.3.3 Limited international 'pressure' for an urban spatial context

Participants in this research were of the view that the drive for consideration of urban spatial contexts has been driven by donor pressure on national government.

> 'The focus on urban issues has arisen because there has been international pressure to address urban issues. Left to the government it would not have addressed specific urban development as a priority'[46]

Also international donor programmes have been influential in shaping development patterns in Ghana, yet donor programmes have

[46] Key informant interview 27, 1st September 2011

for considerable time been rural oriented and the urban dimension has received comparatively marginal attention[47].Therefore local development initiatives and interventions have followed suit in the direction of donor programme priority areas. The increasing attention by donors such as the World Bank to urbanisation in Ghana seems to have been necessitated by the population reaching 50.9% urbanised (GSS, 2012: 4).

Following a study on urbanisation in Ghana published by the World Bank urban development unit (Farvacque-Vitkovic *et al.*, 2008b) recommendations were made for a policy framework to guide urban development. Though Agence Francaise de Developpment (AFD) appears to have been interested in funding the consultative process and formulation of the NUP, eventually GTZ (GIZ) and MLGRD supported the project (Int. 7). The AFD has initiated the GUMP project. The role of multilateral and bilateral donor agencies appears to be critical in shaping national attention to urban development policies. The availability of donor funds to support urban development programmes (climate change or other development agendas) appears to be an incentive for national government, in this case Ghana, to pursue specific urban development agendas. Clearly donor agencies in Ghana are yet to actively promote the urban-climate change agenda at local levels. Despite international statements such as the World Bank's Cities and Climate change as

[47] Key informant interview 7, 9th August 2011

an urgent agenda, the urban context is yet to be reflected in Ghana's country programme activities on climate change. One may suggest that such manifestation is the result of promoting country ownership of development. Consequently, national development priorities may not align with donor priorities. Further discussions of donor activities with regards to climate change are addressed in Chapter 7.

5.4 Conclusion: Central government as agents of diffusing climate change policies

The above discussions indicate that establishing an institutional architecture for addressing climate change has received and continues to receive immense attention in the Government of Ghana responses to climate change. The formation of a National climate change committee, National climate change policy framework, national climate change adaptation strategy and the mainstreaming of climate change adaptation in development planning all demonstrate the intent towards institutional responses. From all indications these point to an underlying assumption that establishment of institutions for climate change matter and are crucial in shaping agency response regarding mitigation and adaptation initiatives. The national climate change institutional setup appears to be an extension of an international framework and though governments are urged to put measures in place to address climate concerns these measures ultimately link up with the UNFCCC framework and Hyogo Framework Action. Therefore Government of

Ghana in drawing up policy responses, in addition to considering national contexts, intends to meet obligations to global institutional framework. This demonstrates that national governments are not entirely autonomous in shaping their policy response to climate change since they need to be in tandem with international rules and norms regarding climate change policies.

This chapter has also demonstrated that central government could also play the role of agents in the diffusion of climate change policies to local urban governments. In engaging with the international institutional architecture on climate change the Government of Ghana, through the Ministry of Environment Science and Technology, could be said to be a 'carrier' of climate change polices. The relations between central government and local government create structural conditions for new policy ideas to travel to metropolitan governments in Ghana. How climate change policies ideas, transferred from central governments' institutions, were received by Accra, Kumasi and Tamale metropolitan governments are explored in the next chapter.

6 Metropolitan Policy Reponses to Climate Change in Ghana: The Case of Accra, Kumasi and Tamale

The urban spatial context appears to receive less focus in national policies on climate change in Ghana. However an investigation of the national institutions in the previous chapter demonstrated that sub-national governments are crucial in achieving national targets on reducing greenhouse gas emissions and increasing resilience to the impacts of a changing climate. As such the policy activities of the Government of Ghana are aimed at diffusing climate change policy ideas to metropolitan/ municipal and District Assemblies (MMDA) whilst ensuring climate change concerns are considered and adopted in development plans (NDPC, 2009). This chapter investigates the extent to which three metropolitan governments - Accra, Tamale and Kumasi metropolitan governments - have responded to these directives from the National Development Planning Commission. The rationale for selecting three metropolitan areas was highlighted in Chapter 4. This study presented an opportunity to observe the policy response of local government institutions and actors when policy ideas on climate change were introduced into development planning, the nature of the policy response at the metropolitan level and the rationale for adoption.

6.1 Local government responding to climate change theme in GSGDA

The process of policy making by local government in Ghana involves development planning in tandem with general guidelines and national objectives drawn by state institutions. The National Development Planning Commission (NDPC) is entrusted with the task of preparing long and medium term policy guidelines to guide development planning by the various ministerial sectors and at the district level. As part of its obligations, the NDPC is constitutionally mandated to prepare broad national development plans. In this pursuit the NDPC produces national policy guidance framework for sector ministries and district assemblies to prepare medium term development plans. District Assemblies (DA), the administrative authorities for local government, have administrative and financial authority under the 1992 constitution of the Republic of Ghana, article 34:5(d). Similarly the DAs are designated as a planning authority under the Local Government Act 1993 article 12(1) that grants the DA the authority to prepare local development plans which then culminate into a regional plan and finally national plan. Local development planning takes place within a national framework, in this case the Ghana Shared Growth Development Agenda (GSGDA), and therefore all district and sector ministry medium term plans are expected to conform to nationally set objectives.

The GSGDA (2010-2013) is the current medium term national development policy framework for preparing district/municipal and metropolitan development plans. The GSGDA policy framework is the foundation for preparing medium term plans for metropolitan assemblies within seven (7) thematic areas as seen in Fig 5.5. Thematic areas were established through consultation with a cross sectoral planning group (CSPG) consisting of development partners, civil society groups, selected research institutions and government ministries. Two core thematic areas of the GSGDA are crucial for the purposes of this research on climate resilient development planning in urban areas. Firstly the directive to address natural disasters risk and vulnerability as well as climate variability and change is a sub-theme of thematic area 'accelerated agricultural modernisation and sustainable natural resource management' (NDPC, 2011:49-51). Secondly 'settlement disaster prevention' is a subtheme of the thematic area 'Infrastructure and human settlements' (NDPC, 2011:69,70). There are indications of concerns and intentions of integrating climate change adaptation in MDA development planning through the GSGDA medium term policy framework and guidelines. As a result, the MDAs were expected to present strategies for addressing climate change in their development plans for 2010-2013. As a result of the decentralisation process and the Local Government Act 462, the Regional Coordinating Council

(RCC)[48] and Regional Coordinating Planning Unit (RCPU) are to facilitate the preparation of metropolitan medium term development plan. This would be achieved by providing relevant information and resources for preparing the metropolitan development plan, monitor the preparation of the plan as well as coordinating its harmonisation with the national policies, GSGDA (NDPC, 2009: 5). It would appear that the role of RCCs and RCPUs are administrative and the actual process of formulating the development plan rests with metropolitan assemblies. Yet the process of development planning requires regional and MDA planning units collaborate to ensure the plans are consistent with national priorities.

The extent to which national policy on climate change, in the GSGDA, were responded to by Accra, Kumasi and Tamale metropolitan governments in the MTDP will be addressed in the subsequent sections.

6.2 Accra Metropolitan Assembly (AMA)

Accra is the capital of the Accra Metropolitan Assembly (AMA), the regional capital of the Greater Accra region and national capital of Ghana. The position of Accra as a national capital implies it has political and economic significance, which extends beyond the region to include a national influence. Accra is the national capital of

[48] The Regional Coordinating Council is a regional body established by constitution (Ghana, 1992, Section 255). Regional Planning Coordinating Units in the various regions are to coordinate, monitor and evaluate planning activities and by the Metropolitan, Municipal and District Assemblies Act 480 (Ghana, 1994b: Section 8, 9).

Ghana and occupies a crucial position in the administration of the country, with the seat of government and majority of political institutions headquartered in Accra. The urban situation in Ghana reflects an existing overconcentration of public administrative activities in regional and the national capital despite intentions at decentralisation of governance. Accra contributes an estimated 10% to national GDP and is the seat of national government and sector ministries. With Accra's increasing population size[49], together with economic and political significance the threat of climate-related disasters such as flooding (AMA, 2001; UNEP/OCHA, 2011) and sea level rise (Appeaning Addo and Adeyemi, 2013) has been detrimental to development of the metropolis. A flood risk map of Accra (Map 4) show varying degrees of communities' vulnerability to flooding.

AMA's response to the NDPC directive in the GSGDA (2010-2013) medium term policy framework on mainstreaming climate change in development plans is presented in this section, with investigations of institutional structure and budgetary allocations for climate change.

6.2.1 Planning for climate change in AMA medium term plans

The AMA medium term development plan (2010-2013) states that special consideration would be given to promoting cross cutting issues, climate change inclusive. However there is no explicit

[49] 1,848,614 according to the 2010 population and housing census and increasing at an annual rate of 4.3% (GSS, 2012)

mention of measures to directly address the concerns expressed in the GSGDA related to mainstreaming climate concerns in development. Measures by AMA, directed at certain development priorities, indirectly contribute to making development resilient to the adverse effects of weather events. For instance, poor drainage systems and haphazard urban development, widely considered as a major contributor to flooding incidents in Accra and other cities in the Ghana, are to be remedied by 2013. To achieve this MTDP has proposed to 'improve and provide good drainage system within the metropolis by December 2013, by constructing and desilting metropolitan drains' (AMA, 2010:116).

AMA recognises the impacts of climate change, and consequently flooding as a major concern for Accra all year round but especially during the rainy season[50]. For instance following the October 2011 floods, NADMO recorded 14 lives lost, 40,000 people displaced and property worth millions of Ghana cedis damaged in the Greater Accra region (NADMO, 2011). This may be an unusual occurrence because the flooding incident occurred after the heavy rainy season (Fig. 6.6). A report by the AMA Town and Country Planning Department (TCPD) and the Works Department attributed poor drainage systems as one of the three major causes of the floods in Accra (AMA, 2001). As emphasised by key informants 8 and 29,

[50] The first rainy season begins in May and ends in mid-July and the second between mid-August and October

poor drainage is still considered a causal factor of floods in Accra[51]. Six communities in Accra have been designated as areas liable to flood.[52] As part of measures to address the GSGDA thematic area and MoFEP directive under 'environmental and climatic change', Accra Metropolitan Assembly states in the 2012 fiscal budget the plan to construct 13 major drains and 130 minor drains in selected areas in Accra (AMA, 2011b). Though AMA is concerned about the economic and social impacts of floods in Accra, it was observed that the metropolis is faced with other immediate pressing development needs. The development concerns are assessed by the Metropolitan development coordinating unit on compatibility with each of the seven GSGDA thematic areas and a score between -2 and 2[53] awarded. Based on the total scores for specific development concern, a ranking of prioritised problems was prepared by the MDPCU. 'Poor drainage and pavement systems' attained a ranking of 15th (out of 29) on the prioritised list of development problems.

[51] Key informant 8, 10th August 2011 and key informant 29, 2nd September 2011

[52] Panbros Salt Ponds, Dansoman - Mpoase - South Odorkor corridorDansoman - Sukura - Chorkor corridor Mataheko - Abossey Okai - Korle Lagoon corridor, Odaw - Dzorwulu - Awudome - Industrial Areas System, Darkuman - North Kaneshie (AMA, 2010)

[53] -2 being strongly compatible,1: weakly compatible, 0: not compatible, -1: weakly incompatible, -2: strongly incompatible (NDPC, 2011,p.16).

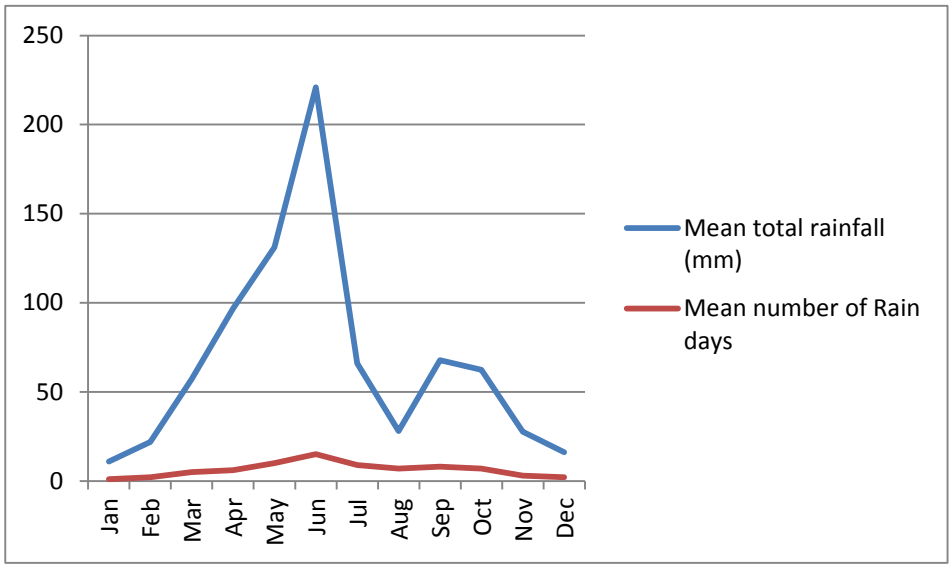
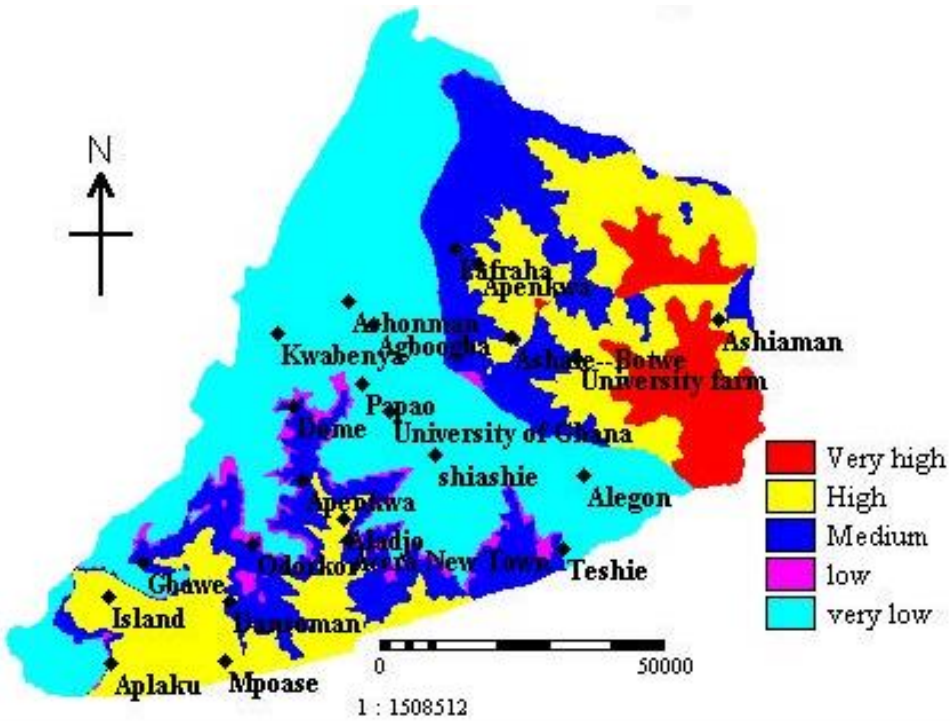


Figure 6.1 Rainfall pattern for Accra
Source: Derived from Ghana Meteorological Agency data

Map 4 Flood risk areas in Accra



Source: Nyarko (2000: 1047)

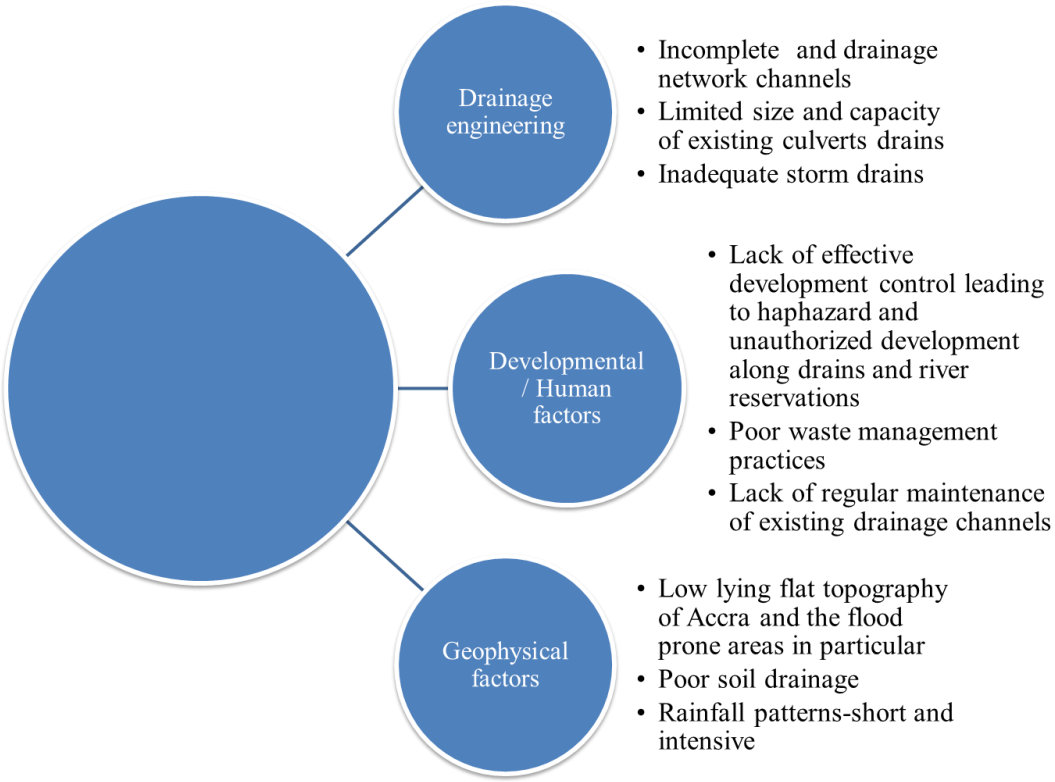


Figure 6.2 Causal factors of flooding in Accra

Source: Adapted from AMA (2001)

6.2.2 Potential mitigation project: waste management to gas

Another initiative mentioned in the AMA development plans, related to addressing the climate change component, is the reduction of greenhouse gases emanating from solid waste landfill sites. Planning officers highlighted that though waste management was ranked 9th on the development priority list (See Appendix 2), it is a 'major concern for the assembly'[54]. The metropolitan assembly states that

[54] Key interview 29, 2nd September 2011

2200 tonnes of solid waste is generated daily with 1800 tonnes collected leaving an excess of 400 tonnes uncollected. Also only 15% of the city is covered by the city sewerage system (AMA, 2010). Consequently since 2009, the assembly has been seeking proposals for the management and treatment of waste generated in Accra. Private sector companies have taken initiatives to address the waste problem with projects converting waste to compost. For instance, ZOOMLION Ghana Ltd has built the Accra Compost and Recycling plant. Blue Sphere Corporation has initiated the landfill gas extraction plant. This is an attempt to resolve the waste management situation in Accra and also recognition of the potential of these projects to reduce greenhouse gas emissions.

ZOOMLION Ghana has registered a project for composting municipal solid waste under the UNFCCC Clean Development Mechanism (CDM) whilst projects submitted by the Blue Sphere Corporation are under consideration by the CDM Executive Board. The management of waste is a key theme in the AMA fiscal budget for 2012. Approximately 23% of the total 2012 budget allocation was allocated to the waste management department of the metropolis. Waste management is granted additional attention particularly since 'Treatment, distribution, liquid waste processing and disposal mechanisms' is a key theme pursued under the Millennium Cities Initiative (MCI).

Accra was designated as Millennium city in January 2010 with a focus on promoting education, community upgrading and waste management (AMA, 2011a). The MCI is a programme initiated by the Earth Institute of Columbia University and funded by the Bill and Melinda Gates Foundation to assist selected developing cities to address urban poverty and attain the Millennium Development Goals. Participating cities contribute partner funding of 10% of the total project cost. Managing the waste problem in Accra is a major concern for the metropolis. This is a dent on the image of Accra the capital city of Ghana (Chronicle, 2011). Addressing waste management problems in Accra is more than ridding the city of filth. It is about restoring the city to the status of a Millennium City. This confirms literature that policy makers would be quick to adopt policy initiatives which would repair a dented image particularly when the policy makers receive the blame (Geoffman, 1963). Therefore for cities like Accra which are pursuing modernising agendas, one can conclude that climate change has to be linked to development issues that elevate the status of the city to be considered in development plans.

6.2.3 Modernisation and development: driven agenda of the AMA

The Mayor's vision was mentioned as influential in driving the development agenda of the metropolis since he took office in 2009.

> 'The vision of the mayor is to transform Accra into a millennium city… efforts at evictions are to make Accra beautiful. The mayor is not a desk mayor but is hands on and carries everyone with his vision for Accra.[55]

To confirm, minutes of a general assembly meeting in December 2009 recorded that the Mayor stated that the underpinning themes of the 2010 budget were modernisation and development (AMA, 2009, Item 8.2). The development agenda is in tandem with the Mayor's initiative started in 2009 titled the 'A New Accra for a Better Ghana' aimed at 'beautifying' and decongesting the city of unauthorised structures and trading activities to attract investment to the city (Asare, 2011). The 'Better Ghana - Investing in people, jobs and the economy' agenda is the theme of the manifesto of the ruling National Democratic Congress (NDC) government which came to power after national elections in 2008 and 2012. Said to be grounded in social democratic philosophy, the 'Better Ghana' is underpinned by four themes namely governance, economy, investing in people (education and youth) and infrastructure for growth. The modernisation and new image branding of Accra is hence within the framework of the NDC manifesto themes. This illustrated that

[55] Key informant 29, 2nd September 2011

political party agendas have the potential to shape the direction of policymaking at the local government level. Also solving the waste problem in Accra is a public need and politicians would be ready to push for policies that that would meet public needs and enhance their political career (Cohen, 2011: 4). The head of government of the Metropolitan Assembly is the Metropolitan Chief Executive (MCE), appointed by the president in line with the constitution of the fourth republic of Ghana and Local government 462. The appointee is then vetted and approved (or, in rare occasions, rejected) with consensus of not less than two-thirds of the assembly. The MCE serves for a period of up to 4 years equivalent to the political electoral period.

Though no official document exists outlining comprehensive detail of Accra beautification project as part of image branding , AMA draws on the assembly's by-laws (AMA, 1995) for enforcement. The vision of the assembly 'A new Accra, clean and environmentally sound where the city authority mobilizes sufficient resources, both internally and externally, and utilising these resources judiciously to benefit the people of the city' is reflected in key documentation of the assembly (AMA, 2010; AMA, 2011a). Documentary analysis of the vision and mission statements, as well as interviews suggests that infrastructural development and modernisation drive the metropolitan assembly development agenda for 2010-2013. This is

evidenced in the budgetary allocation for 2012 to various departments.

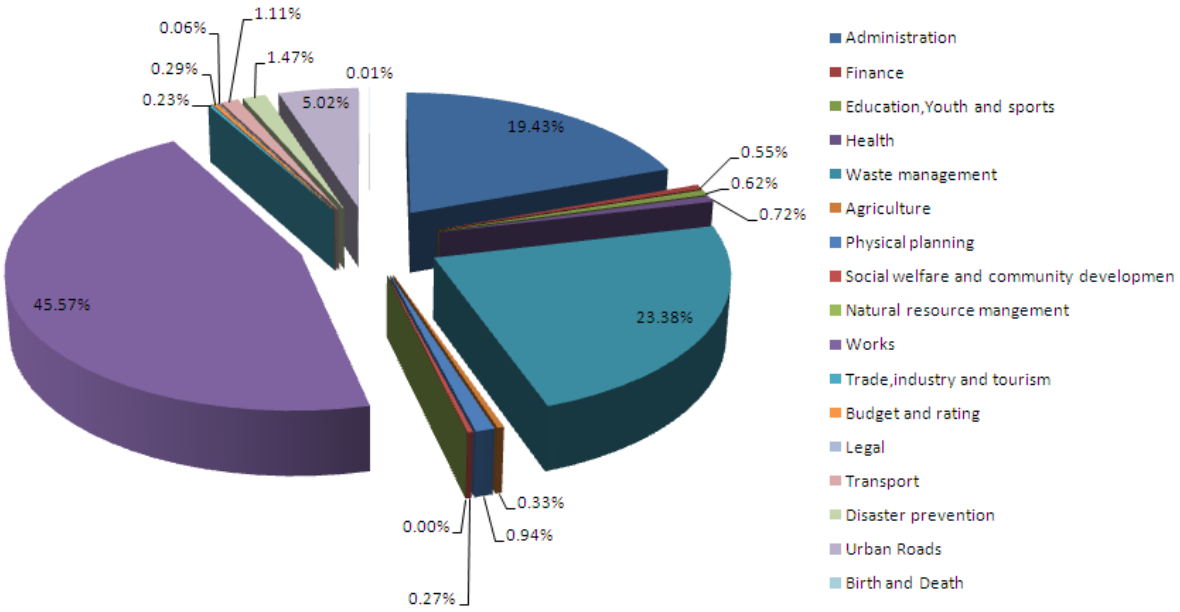


Figure 6.3 AMA Estimates of expenditure by departments

Source: Adapted from AMA 2012 fiscal budget

Works[56] and Waste Departments were allocated the two highest percentages of the total 2012 fiscal budget, 45.57% and 23.38% respectively. This reflects a primary emphasis by the AMA on building physical infrastructure and addressing waste challenges in Accra.

[56] Works Department is responsible for infrastructure and development control

Accra Metropolitan Assembly during the period of this research (2010-2013) had no designated department or personnel responsible for mainstreaming climate concerns in the city's development plan. An investigation of the AMA organogram indicates that within the assembly governance structure the responsibility of the 'environmental and climatic change' thematic area in the 2012 fiscal budget (constructing 13 major and minor drains) lies primarily with the department of urban roads. However the construction of drains would require collaboration between different departments within the AMA as assigned in the schedule of responsibilities. Moreover, the overall responsibility of preparing the metropolitan development plan and ensuring the compliance of the metropolitan development plan with NDPC guidelines, GSGDA, on mainstreaming climate change initiatives in development plans rests with the metropolitan development planning coordinating unit headed by the Metropolitan Coordinating Director (MCD).

AMA has thirteen sub-committees of the executive committee of all assembly members, five mandatory as specified in Local government Act 462 (Ghana, 1993) and eight initiated as determined by the assembly (see Table 6.4) . As the National climate change adaptation strategy proposed the responsibility of coordinating a climate change strategy for the metropolis is with the Environmental sub-committee yet mainstreaming climate change would require that all sub-committees. However one can notice that

the AMA has a disaster sub-committee, suggesting that there is oversight for addressing disasters, climate-related included, in the metropolis. The establishment of a disaster committee may suggest that disasters are a concern for the metropolis, and shows that disaster risk reduction is being translated at local levels. This supports assertions that already instituted DRR at the local level has the potential for introducing CCA (Mercer, 2010). How effective the sub-committee on disasters would be, largely depends on coordination with other sub-committees and departments in the metropolitan assembly and beyond.

Table 6.1 AMA Subcommittees

Mandatory Sub-committees (Act 462)	**Sub-committee (Assembly initiated)**
Finance and administration	Education
Development planning	Environmental management
Works	Revenue mobilisation
Social services	Agriculture
Security and justice	Disaster
	Youth and sports
	Women and children
	Health

The functions of the subcommittees are prescribed as deliberative by Local government Act 462 (Ghana, 1993, 25:1). The purpose is to inform deliberations and decision making of the Executive committee with regards to, in addition to other functions, 'the initiation and implementation of development programmes and projects at the district level' (Ghana, 1993, 21:f (iv)). Wide institutional gaps exist in the attempt to integrate climate change adaptation and disaster risk reduction in metropolitan development planning for 2010-2013. The policy initiatives of metropolitan governments studied with climate change could be considered, so far to be ad-hoc measures. However local government authorities in Ghana are not autonomous bodies but exist within a framework of other levels of governance as specified in Local Government Act 461. Therefore there is the need to adopt a multi-level investigative approach to conceptualise the policy decision making process in setting the development agenda for metropolitan areas in Ghana.

6.3 Kumasi Metropolitan Assembly (KMA)

Kumasi metropolis is the regional capital of the Ashanti region and the second most populous city[57] in Ghana with population increasing at a rate of 4.8% per annum (GSS, 2000). Kumasi is a major trading hub particularly due to its geographical location in the middle belt of

[57] 2,035,064 2010 Population and Housing Census (GSS, 2012). Though the population of Kumasi metropolis exceeds that of Accra Metropolitan area, as stated earlier, it is less than that of the Greater Accra Metropolis, which includes other surrounding municipalities in the Greater Accra region.

the country. Also trade/commerce/ service activities are a major economic activity, employing 72% of the population of the region (GSS 2000). Climate projections for Kumasi shown in Table 6.2 indicate that total annual rainfall is expected to decrease from 1402.1mm (1961-1990) to 1368.8mm by 2020. On the other hand, daily average solar radiation is projected to increase from 15.68Mj/m² (1961-1990) to 16.06Mj/m² (2020). Also, daily mean temperatures are projected to increase. The climate variations interact with already existing urban development challenges to produce adverse impacts such as flooding, which are a major concern for the metropolis.

Table 6.2 Climatic projections for Kumasi

Year	**Temperature(°C)**	**Daily Solar radiation Mj/m²**	**Total annual rainfall (mm)**
1961-1990	26.1	15.68	1402.1
2000	26.5	15.83	1388.6
2005	26.7	15.88	1384.2
2010	26.8	15.93	1379.7
2015	27.0	15.99	1374.5
2020	27.1	16.06	1368.8

Source: Computed from EPA (2001) Tables 3.7,3.9,3.4

In studying Kumasi metropolitan government the aim is to investigate the extent to which climate change component is reflected in the medium term plan for 2010-2013 and in the institutional setup.

6.3.1 Climate change policies in the KMA medium term development plan

KMA is required, by the Local Government Act 462, to prepare and submit development plans of the metropolitan area to the National Development Planning Commission (NDPC). The development plans for the district are to be guided by thematic areas in the medium term development policy framework prepared by the NDPC for the planning period 2010-2013. Following the prioritisation and district goals identification process during preparation of the medium term development plan, KMA identified five targeted areas - built environment, waste and sanitation management, increased revenue collection, job opportunities for unemployed and underemployed youth, local economic development and increased investment in small and medium term enterprises, women and vulnerable children (KMA, 2010: xvi).

In an attempt to capture the climate change component as specified under thematic area 'Accelerated agricultural modernisation and natural resource management' and in response to directives by the Ministry of Finance and Economic Planning (MOFEP) for preparing

MDA budgets for 2012-2014 (MOFEP, 2011 section 5.25) KMA specified environmental and climatic management issues as a focus area for allocation of two per cent of budget funds in the 2012 fiscal year (KMA, 2011). The budget allocation of two per cent was intended for two projects: development of three additional cells at the Oti landfill site and controlling of noise pollution.

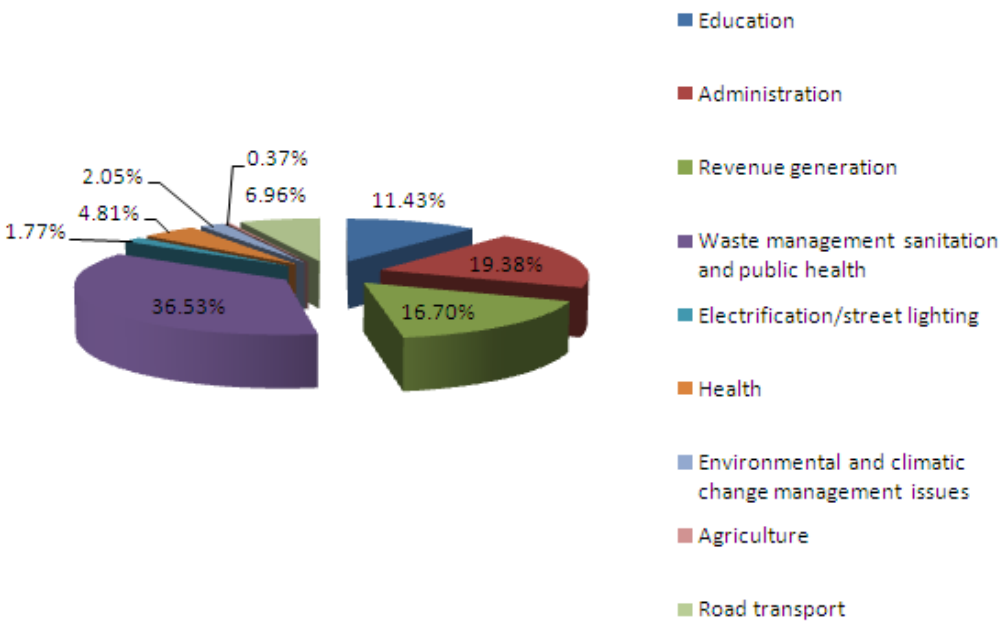


Figure 6.4 KMA Budgetary allocation by sector

Source: Derived with data from KMA 2012 fiscal budget

The Oti Landfill site is a landfill site covering an area of 16,960m² located in the Kumasi metropolis and has been operating since 2004. This project is being implemented under the Clean Development

Mechanism (CDM) 'Landfill gas capture, flaring and utilisation program in Africa' hosted in thirteen African countries (UNFCCC, 2012). Owned by KMA and managed by J. Stanley-Owusu & Co. Ltd, the Oti landfill site project intends to capture methane gases from decomposing waste and burn the landfill gas in the first phase. The second phase would entail utilising three more cells to increase volume of landfill gas for electricity generation. In December 2012, Blue Sphere Corporation, a waste to energy company based in Israel, was granted approval by the Government of Ghana to commence conversion of landfill gas to electricity for supply to the national grid (BlueSphere, 2012). Prior to the agreement between KMA and Blue Sphere Corporation, KMA had allocated funds in the fiscal budget for 2012 for developing the three additional cells. There are other objectives which are indirectly related to measures for addressing climate change. One objective of the MTDP is ' to increase the supply of LPG by 2013' (KMA, 2010:166) which could be regarded as an alternative clean source of energy and contribute to reducing greenhouse gas emissions from fossil fuels. Under settlement disaster prevention thematic area, KMA's expectations are that initiatives would be made 'to reduce destruction of private properties by perennial flooding to the barest minimum between 2010 and 2013'.

According to a planner at KMA,

> 'Other strategies *(with regards to climate change)* include promoting energy efficient use of power, example gas for cars against leaded fuel as well as promoting low carbon'[58]

An investigation of KMA's development plans indicated that the focus of climate change activities was directed at generating energy from solid waste. Mainstreaming climate resilient development was not explicitly mentioned in the KMA medium term plans (2010-2013) as a component focus area. As with Tamale (section 6.4), KMA made reference to allocating funds in the 2012 fiscal year budget to 'promote resilient urban infrastructure development, maintenance and provision of basic services' (KMA, 2011: 27).

Local government officers indicated that the development focus of Kumasi metropolis is largely shaped by local developmental needs, established and consolidated from various priority needs at sub-metro level[59]. Perennial flooding is considered a major concern for the metropolis, as stated in the medium term development plan (KMA, 2010: 31). The National Disaster Management Organisation (NADMO) in Kumasi has demarcated eight communities in the Kumasi Metropolis as flood prone areas KMA attributes this flooding to human factors- 'construction of buildings in waterways, dumping of refuse in gutters and drains and the inability of existing

[58] Key informant 19, 19th August 2011
[59] Key informant 10, 10th August 2011and key informant 19 , 19th August 2011

culverts to receive large volumes of water whenever there is a heavy down pour' (KMA, 2010: 28). Three other communities in the metropolis are noted to be affected by rainstorms due to absence of wind breaks. The surrounding areas have suffered deforestation as a result of tree cutting for wood fuel, agriculture and construction material. Interviews with planners also confirmed that poor enforcement of planning regulations and increased population rather than climate change were the cause of flooding in the metropolis.

> 'In some specific areas concerns are raised about floods but these are associated with drains and haphazard development'[60]

The cause of flooding in certain areas of Kumasi is attributed to poor urban planning practices, and the lack of political will power to enforce the regulations due to the potential of such action to lead to losing electoral votes[61]. In addition, funding for the two departments addressing climate-related disasters and urban planning appear to be comparatively limited. The 2012 KMA fiscal budgetary allocation for disaster prevention and physical planning department stand at 0.01% and 1.53% respectively.

[60] Key informant 10, 15th August 2011
[61] Key informant 20, 19th August 2011

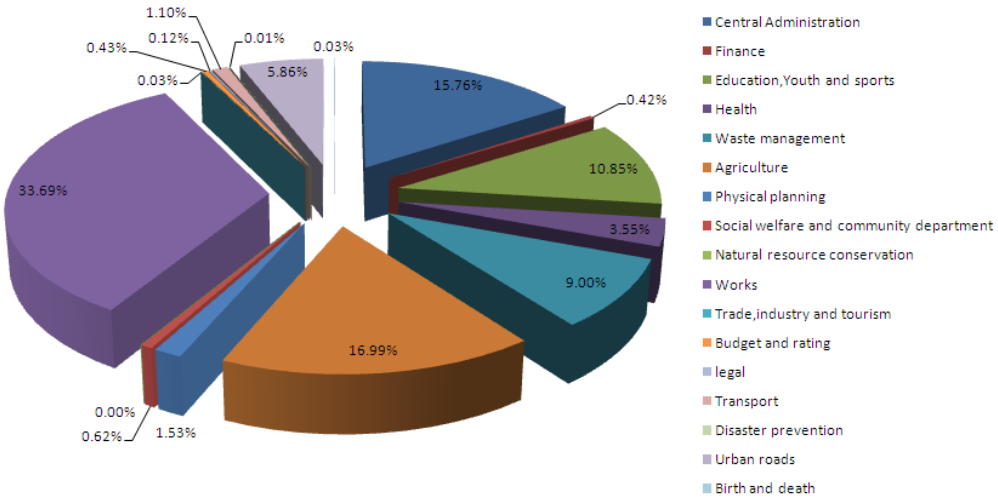


Figure 6.5 KMA Budgetary allocation by department

Source: Adapted with data from KMA fiscal Budget 2012

An investigation of the KMA budget for 2012 suggests that funding of 0.01% was allocated to address disaster prevention (Fig. 6.5). Follow up interviews and a review of official policy documents shows that allocation of district assembly funds intended for designated areas are also predetermined by NDPC and MoFEP funding ceiling for MMDA departments. Key informant 19 indicated that at the local government level, three main factors are crucial in determining metropolitan development focus areas and consequently shape the allocation of budgetary funding – namely section of the population affected, amount of resources to provide and the ripple effect of the programme to solving other development problems.

6.3.2 Institutionalising climate change concerns

Limited consideration has been given to institutionalising climate concerns in policy decision making processes for development planning of the metropolis. An investigation of the institutional setup of KMA indicates no specific department or committee to oversee the integration of climate change in the operations of the metropolis. Kumasi Metropolitan Chief Executive (MCE) governs with the Metropolitan Assembly, a council of 87 persons - 60 elected by the populace in the various 10 sub metropolitan areas, and the remaining 20 appointed by the state. This body is the governing council of the Metropolitan assembly. Supporting the governing council is the group of government bureaucrats and technical professionals. KMA recognises that knowledge on planning for climate change, specifically for Kumasi, is limited. The lack of technical expertise to assist in mainstreaming climate change in-house at the local government level is well noted.

> 'Since climate change is a sensitive area and we don't have the experts in this field we plan on recruiting experts from Accra for the implementation of this thematic area'[62]

However the lack of technical expertise was disputed by key informant 20[63] who considered that the absence of political will by

[62] Key informant 19, 19th August 2011
[63] 19th August, 2011

local politicians to advocate and lobby for climate-related concerns in development planning has contributed to the state of limited attention. This lack of political will to initiate a stronger institutional response by KMA towards climate change and promoting resilient development was attributed to inadequate pressure from development professionals[64] and the absence of climate change activism in cities[65].

Table 6.3 KMA sub-committees

Mandatory Sub-committee (Act 462)	**Sub-committee (Assembly initiated)**
Finance and administration	Education
Development planning	Environment
Works	Revenue mobilisation
Social services	Transport commission
Security and Justice	

The review of KMA development plans and key informant interviews have revealed facts about the extent to which climate concerns have reflected in development plans and factors that have determined these responses. In responding to national directives to include climate change in development plans, KMA initiated

[64] Key informant 13, 15th August 2011
[65] Key informant 5, 5th August 2011

projects in the form of landfill waste to gas. However this was a one-off project and no comprehensive city-wide project was in place, despite references by national climate change adaptation strategy to institute city adaptation strategies. Essentially it seems 'climate change' was utilised to leverage development and addressing the waste problem in the metropolis. Also existing was the perception that flooding is caused by socio-political factors than climate change. This draws attention to the diverse conceptual frames of flooding which then act as barriers or constraints to a formulating a comprehensive city strategy for Kumasi.

Also the study of Kumasi suggests that national directives to mainstream climate change are necessary but not sufficient to drive adoption in development plans. The utility of the policy idea to politicians and public support is essential in driving adoption. This confirms that with regards to climate change, public opinion and political pressure from constituents tends to be essential in driving political action on new policies (Gilardi *et al.*, 2009b).

6.4 Tamale Metropolitan Assembly (TaMA): Dealing with droughts

Tamale Metropolitan Assembly (TaMA) is classified as a metropolitan area under the Local Government Act 462 and located in the Northern region of Ghana. Tamale is considered one of the fastest growing urban areas in Africa, population grew by 48.8% in

the period between 1984 and 2000 and an average intercensal growth rate of 3.5% (TAMA, 2010). Tamale is the only metropolis classified as grade 1 in the northern part of the country. This places TaMA as central and attractive to the northern sector and a significant bread basket for the nation. This, however, does not rule out relatively smaller urban and rural areas as less significant particularly in view of the growth that is taking place in smaller towns across Africa. Therefore disasters, when they occur, have the propensity to have regional as well as national negative impacts.

The purpose of this section is to investigate the extent to which the Tamale Metropolitan assembly has responded to NDPC directives to include climate change policy initiatives in the medium term development plans for 2010-2013. It also explores the contextual drivers. Using 1961 as a baseline year, data shows that Tamale has been experiencing variable climatic conditions. Daily mean temperatures and solar radiation are projected to increase whilst total annual rainfall decreases between year 2000 and 2020 (EPA, 2001). Consequently the TaMA coordinating planning unit recognises the impact of weather related incidents such as droughts, excessive temperatures with associated inconsistencies in water supply on development in the metropolis.

Interviews with metropolitan planning officials established three areas of development concerns for the metropolitan area, education,

infrastructural development and waste and sanitation as well as the location of buildings along water ways[66]. Further investigation of the development aspirations in the TaMA medium term development plan (2010-2013) points to additional areas of concern such as health, low revenue mobilisation and local economic development. Climate change is not explicitly mentioned as an area of concern in the development plans for the assembly. Investigating planning and budgeting provisions in the development plan as well as the governance structure of TaMA indicates that economic development is the key focus.

6.4.1 Tamale's exposure to climate variability and change

Ghana meteorological data shows that the climate in Ghana, Tamale in particular, has changed between 1961 and 1990. Climate scenario models projections for 2000 to 2020 indicate that temperature, solar radiation and rainfall are expected to change. Tamale is located within the Guinea savannah eco-climate zone. Mean annual daily temperatures in the Guinea savannah eco-climatic zone have increased from 27.3°c in 1961 to 27.8°c in 2000 and projected to increase in Tamale from 28.1°c in 1990 to 29°c by 2020[67]. Daily solar radiation is expected to increase from 19.24 MJ/m² on average between 1961 and 1990 to 19.96 MJ/m² in 2020[68]. In contrast rainfall patterns are expected to decrease from an average annual

[66] Key informant interview 22 , 23rd August, 2011
[67] EPA, 2001: 59, Table 3.4
[68] EPA, 2001: 59, Table 3.7

rainfall of 1100.2mm in the 1961-1990 time periods to 1082.8mm in 2010 and 1074.8mm by 2020[69]. Coupled with this, the geological features present challenges to climatic conditions. Tamale is located within an ecological zone with a low water table which in addition to the high temperatures, diminishing rainfall patterns have had an impact on the water supply and health of Tamale. The low water table has contributed to the poor drainage system in Tamale with consequent inconsistencies in water supply from Ghana Water Company Limited (GWCL). This situation is expected to be exacerbated by increased temperatures and evapotranspiration.

Tamale is located in the region classified by World Health Organisation as the African meningitis belt. Though cerebral spinal meningitis (CSM) is not one of the top ten out-patient department diseases in TaMA, in the hotter season of the year (March-May) incidents of CSM are prevalent. As at week 12, beginning 21st March 2011, 11 cases of meningitis were reported by the Northern region directorate of the Ghana Health Service and three deaths had occurred (GHS, 2011). During this season, there tends to be intensive education on immunisation against the meningitis virus. The current impacts of high temperatures are considered a threat to health and water supply of residents in the metropolis. Further increases in temperatures and reduced rainfall are expected to exacerbate the current development conditions. It is essential to

[69] EPA, 2001: 60, Table 3.9

explore the policy measures TaMA has instituted to address future climatic events.

6.4.2 Planning and budgeting for climate change in medium term plans

The TaMA medium term development plan (2010-2013) states that the overall goal is directed at 'wealth creation, empowerment of the marginalised, promoting gender equity and strengthening the sub-metro structures' (TAMA, 2010: 94). Similar to the cases of KMA and AMA there is no explicit mention of mainstreaming climate change in all sectors captured in the development plans. The TaMA composite budget for 2012 fiscal year mentions that the following activities would be carried out to reduce vulnerability to climate variability: sensitization of communities, identifying lands and plant seedlings, monitor the tree planting and training the district capacity building team on climate change and the environment. A focus area of the TaMA composite budget for 2012 fiscal year is to 'promote resilient urban infrastructure development maintenance and provision of basic services (TaMA, 2011: 39). Ghs.[70] 51,000 (0.41% of the total budget) was allocated in 2012 for promoting resilient urban infrastructure development. The same amount is expected to be allocated in 2013 fiscal year further increasing to Ghs 51,600 in 2014 and 2015 fiscal year. The funding for urban resilience planning is expected from internally generated funds (IGF) of the metropolis

[70] Ghana currency: cedis -Ghs

and Government of Ghana allocations through the District Assembly Common Funds (DACF). Figure 6.1 shows the TaMA anticipated expenditure, and indicates that 1.47% of the budgetary funding was allocated for disaster prevention in the TaMA composite budget for 2012 fiscal year. The top three areas to which allocated are works (45.57%), waste management (23.38%) and administration (19.43%).

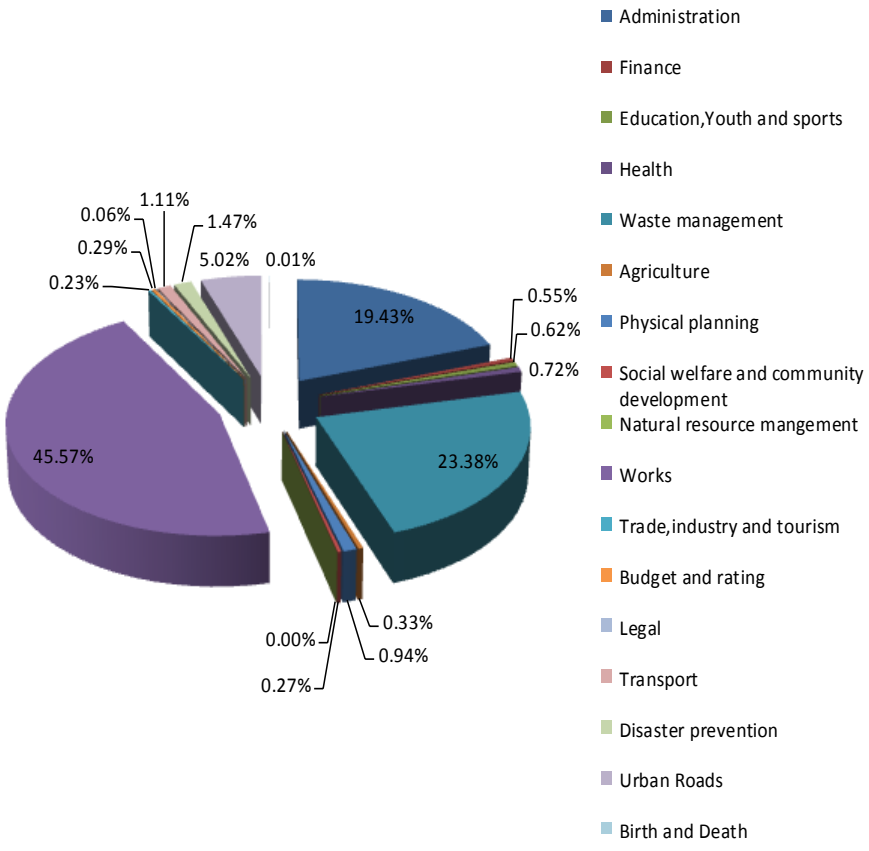


Figure 6.6 TaMA anticipated expenditure pattern
Source: TaMA composite budget 2012

The NDPC requires MDA to include a component of climate change in development planning. However for TaMA other development

priorities take precedence, waste management and reducing pollution, education and capacity building for good governance. These sector areas have readily available funding streams through DACF[71] and donor supported District Development Funds (DDF). These two streams of finance are the major sources of finance for development in the Tamale metropolitan assembly. Figure 6.2 presents the different sources of finance for the TaMA and shows a heavy dependency on external funds between 2009 and 2011, internally generated funds have been minimal. A look at TaMA revenue generated between 2006 and 2009 indicated that external funding from donors and district assembly common fund accounted for about 87%, the remaining being from internally generated funds. Therefore one can suggest that the purpose areas attached to these funds would ultimately determine development areas the metropolitan assembly would give priority to.

[71] DACF- District assembly common fund was established under District Assembly Common Fund Act 455, 1993 and is a development facility to assist districts to implement development programmes. In 2007 the fund increased from 5%-7.5% of all national tax revenue. This is then shared among district assemblies based on a criteria established by the DACF team and approved by parliament.

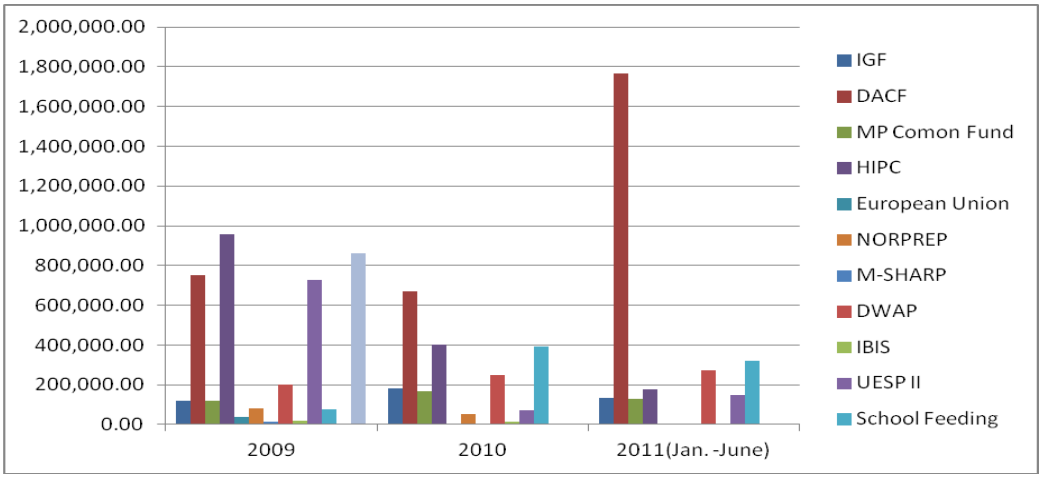


Figure 6.7 Revenue performance of TaMA (2009-2011)
Source: Derived with data from TaMA Medium term development plan and composite budget 2012

The DACF, which is a major source of revenue for TaMA, has specific purpose areas for funding allocation as shown in Fig. 6.3. However this list does not include an allocation for climate disaster risk reduction.

Figure 6.8 Purposes of the District Assembly Common Fund
Source: District Assembly Common Fund

A planning officer confirmed that

> ‘The common fund is allocated for certain projects which does not include an allocation for climate disaster risk reduction’[72]

Finance for mainstreaming climate concerns in development is not reflected in the TaMA 2012 fiscal budget and has been attributed to the reliance on DACF from national government which does not have climate resilient development as a focus area (Fig. 6.3). Limited internally generated funds (IGF) and prioritisation of development needs imply that future climate concerns compete with immediate local development concerns, immediate needs which could be addressed in the short term within the political time frame tend to be granted priority. However a key informant disagrees with the assertion that limited funds ‘We are looking into a big pot which is almost empty, if nothing comes out of it we wait. There is no entrepreneurial spirit within the assembly looking out for other sources of funds’[73]. Moreover to the local politician, ‘the concept is unattractive because it is not a subject which attracts electoral votes and therefore not of interest to the local politician’[74].

The development plan and budgetary allocation streams show that marginal aspects of climate change adaptation are mentioned. The mitigation component in reducing green-house gas emissions is not stated and there are absent funding allocated. In addition to

[72] Key informant interview 22, 23rd August 2011
[73] Key informant interview 21, 22nd August 2011
[74] Key informant interview 24, 24th August 2011

marginalised urban context in national climate change policies, the case of TaMA demonstrates that climate change concerns are to a large extent missing in urban development plans. The marginalised climate change component in TaMA development plan is also reflected in the governance structure of the metropolis.

6.4.3 Governance structure

Coupled with inadequate funds for climate resilient development planning TaMA institutional set up does not have a management structure for formulation and implementation of climate change initiatives. The general assembly of the metropolitan assembly consists of 83 members[75] and the executive committee comprising of not more than a third of the members of the assembly (Ghana, 1993; Article 19). From the executive committee of TaMA ,7 sub-committees have been formed 'for effective implementation of policies in the assembly'(TAMA, 2010). The function of the sub-committee as prescribed by Local Government Act 462 include being 'responsible for collating and deliberating on issues relevant to it as the District Assembly may direct, for the purpose of assisting the District Assembly in its deliberative, executive and legislative functions'(Ghana, 1993; Article 25(I)).

[75] 54 elected by public vote, 24 appointed by the general assembly, 3 members of parliament, the coordinating director who is the administrative head and the Metropolitan chief executive appointed by the President with approval by the assembly according to Article 243 of Constitution (Ghana, 1992)

Table 6.2 shows that in addition to 5 sub-committees[76] mandated under Act 462, two other sub-committees have been formed as determined by the Tamale metropolitan assembly. These are namely the Environment and Revenue mobilisation sub-committees and were set up when the executive committee identified a development need in the metropolis that it intended to address. The sub-committees work with relevant department heads to develop development plans for the sector for onward submission to executive committee for harmonisation. The absence of a sub-committee and metropolitan department for climate change may imply that climate resilient development concerns are not institutionalised in metropolitan development planning. The National Climate Change Adaptation Strategy (NCCAS) states that the responsibility of developing and implementing a district climate change adaptation strategy would rest on the environment committee (EPA, 2009: 23).

[76] Act 462 Section 24:1 (a) Development planning (b) Social services (c) Works (d) Justice and security (e) Finance and administration.

Table 6.4 TaMA sub-committees

Mandatory Sub-committee (Act 462)	**Sub-committee (Assembly initiated)**
Finance and administration Development planning Works Social services Justice and security	Environment Revenue mobilisation

The impacts of adverse weather conditions on the health and water supply in the metropolis are well noted by the metropolitan planning coordinating unit (MPCU). According to one key informant the flooding and water supply shortages experienced by the metropolis are considered more of a result of 'attitudinal problems than climate change related'[77]. For instance the water supply shortages are considered to be a result of illegally tapped points along the main water supply pipe from Dalun water works in Tolon District of the Northern region. Also incidents of flooding are perceived by the MPCU as a result of inadequate desiliting of storm drains by the Urban Roads Department. Despite national guidelines and potential donor funding for mainstreaming climate change policy ideas in development planning water supply shortage is framed as primarily caused by actors attitudinal than about a changing climate.

[77] Key informant interview 22, 23rd August 2011

TaMA demonstrated that despite the significance of mainstreaming climate change in the development plan of the Tamale metropolitan government has other concerns as priority on the development agenda. Planning resilient urban infrastructure has transitioned from the universal agenda to decision agenda level necessitated by government's development agenda (Birkland, 2010). On the other hand reducing greenhouse gas emissions remained on the systemic or universal agenda when the policy idea has not as yet resonated with metropolitan government priorities usually driven by meeting public needs. These drivers and challenges cannot be generalised for all metropolitan areas in Ghana. Further investigation of Cape Coast, Sekondi-Takoradi and Tema metropolitan plans would provide additional insight into how other metropolitan governments in Ghana have responded to climate change concerns.

6.5 Conclusion: metropolitan governments yet to mainstream climate change

This chapter sought to explore the extent to which climate change adaptation and mitigation policies have been adopted by metropolitan governments in development plan, in Ghana. Through a review of policy documents and interviews with key informants in Accra, Kumasi and Tamale metropolitan governments, it was established that climate change is yet to be mainstreamed in

development plans. The project-by-project approach is reflected in the development plans of metropolitan governments in Ghana. This is consistent with Satterthwaite *et al.'s* (2007b) assertions that climate change has received limited consideration by urban governments in developing countries. Climate change has been widely described as a global environmental and development challenge. However to the metropolitan governments, these projects are primarily linked to solving local development problems of managing waste and flooding than about solving global climate change. However the extent to which the problem has achieved significance as a concern at the local is questioned.

Addressing climate change presents planning challenges for AMA, KMA and TaMA local governments. This is particularly evident when a national directive seems not to resonate with the priorities of local residents and the prevailing development paradigm of participatory governance limits. Secondly a dilemma is encountered when planning requires considerations of future climatic models over extended periods outside the medium term planning framework. Local governments then tend to occupy a role of mediating between national directives and the priorities of urban citizens as well as engaging two different approaches to development planning. Metropolitan governments are required under NDPC guidelines to mainstream current and future climate change concerns in the

planning of medium term plans for 2010-2013. The impact of flooding, high temperatures and droughts on development of the metropolis is well noted in the plans plus the need to take measures directed at prevention and disaster reduction. On the other hand needs and development aspirations of AMA, KMA and TaMA indicate that climate change is currently not a recognised development priority for urban residents. The RCPU, located in the respective regions, may facilitate the development plan formulation process to align with national development priorities.

Two dilemmas of local government are presented - responding to the needs and priorities of the citizens and integrating national directives without compromising on either. Integrating these seemingly divergent agendas becomes problematic for local governments. This is pronounced when there has been limited public education on climate change and urban governments are technically and financially ill equipped to address climate change concerns. Metropolitan policy makers agreed that though climate resilience is vital for the development of the metropolis the priorities of the communities' take precedence when preparing the medium term plans. Secondly the task force, charged with aiding the community, identifies their needs and priorities and prepares spatial profiles of the district, was inadequately equipped with knowledge on climate resilient development planning. Therefore if demands for

development resilient to the effects of current and future floods did not appear on the list of priorities during public hearings the likelihood it would be included in the plan was minimal. Clearly, one key conclusion that can be drawn from metropolitan governments' activities and organisational structure is that there are missing institutional champions for climate change policies. For metropolitan planners either there was no adequate knowledge of climate change policies or it was considered too technical to engage with. Examples from South Africa all show that climate change, and for that matter every novel policy idea, requires institutional champions who will drive the change in development practices(Bulkeley and Bentsill, 2006; Bulkeley *et al.*, 2009 : 14) . With this in mind, the Metropolitan Chief Executives are considered key actors in driving development agendas, yet there appeared to be no Mayors championing for climate change policies. In as far as encouraging champions for climate change sounds promising, there is the possibility of encountering the perils of 'celebritization of climate change'(Boykoff and Goodman, 2009).

Another observation with regards to the metropolitan governments was the time frame for planning. The malleability of urban planning institutions to adopt novel policy ideas also has to be considered. The time-frame within which NDPC development policy frameworks for medium term covers a period of about four years and

usually tied to election periods. The current medium term planning time frame is restrictive for effective climate change planning which requires long term planning considerations. In addition the current development planning framework adopts a predominantly sectoral approach with a missing comprehensive urban spatial component. The medium term development planning time-frame create an institutional framework not conducive for a comprehensive long term climate change policy for metropolitan areas.

Therefore it would seem that the response of metropolitan governments to national directives to address climate change tend to be determined by the policy idea's relevance to local contextual needs. In essence the state of these development plans tends to be a consequence of limited demand for climate change policy initiatives by public, politicians and civil servants. The policy making arena is characterised by a plethora of actors and policy arenas which supply knowledge and financial incentives eventually shaping the state development plan of these cities. By limiting the state of metropolitan responses to demand constraints it under looks the significance of activism, incentives and supply constraints.

7 Adopting Climate Change Policies: Knowledge, Activism and Incentives

Policy making process on climate change for cities in Ghana is a highly contested arena. The policy landscape is characterised by a complex range of local and external actors. These actors, who are aided by globalisation forces and transnationalism, tend to influence and shape decision making at the local government level. This complex arena is consequently a challenge for local government officials in Ghana to negotiate whilst attempting to balance the different scales of governance and influences from actors within the local political scene, as well as national directives. The pluralistic and unequal distribution of power among actors is further entrenched by the knowledge concentrated of knowledge on climate change within certain institutions and agencies.

In this chapter, the various potential knowledge production centres, sources for activism and incentives for decision making for adopting climate change policies would be presented. The aim is to analyse the extent to which these have shaped the policy decision making process by the metropolitan governments in adopting a climate change related policy in the medium term development plan for 2010-2014. The first section explores the production of localised knowledge on climate change. This is done by investigating the

extent to which the urban context and climate change is reflected in research institutions' agendas. Following this the degree to which there is social activism for climate change and urban development in examined. Finally the climate change programmes of the World Bank and UNDP are examined to determine if they carry an urban component. This chapter would highlight the plural actors and the arenas within which metropolitan governments formulate plans, and the pressures (or absence of) to include climate change policies in development plans for 2010-2014.

7.1 Research institutes: supplying knowledge on climate change and cities

The current approach of climate change resilience research informing the formulation of policies to address adaptation in Ghana has been missing a spatial component. An explicit urban planning dimension has been underemphasised in nationally commissioned research on climate change in Ghana. For instance this is depicted in the Ghana climate change impacts, vulnerability and adaptation assessments, sponsored by the Netherlands Climate Assistance Programme (see fig 7.1). This formed the basis of the National Climate Change Adaptation Strategy (NCAAS). The NCAAS, based on past weather related disasters, recognises the likely impact of climate change on the built environment, particularly flooding in urban areas (EPA, 2008:11, 12).

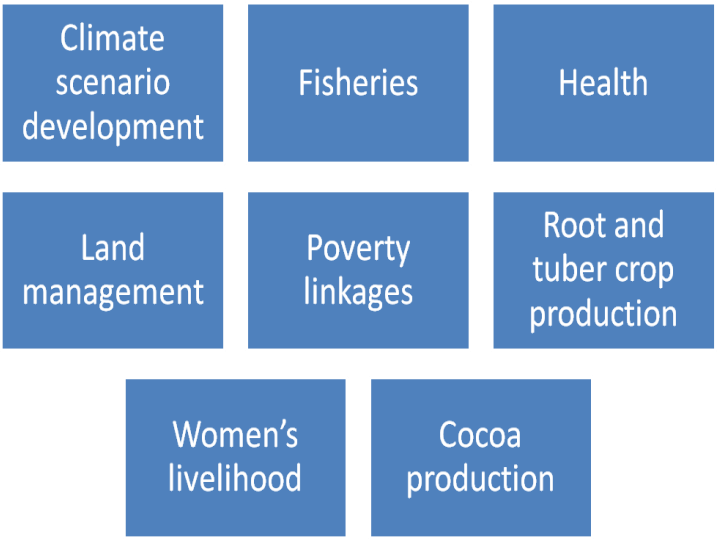


Figure 7.1 Thematic areas of the National Climate Change Adaptation Strategy
Source: Adapted from EPA (2008)

The next section explores the research activities of University of Ghana, Kwame Nkrumah University of Science and Technology, University for Development Studies, Centre for Scientific and Industrial Research. This investigation established that the policy dimensions of climate change have so far been understudied.

7.1.1 Building capacity to meet the climate change challenge (B4C)

Building Capacity to meet the Climate Change Challenge (B4C) is a project implemented by the University of Ghana through a collaboration of the Centre for African Wetlands, Zoology Department and Ghana Wildlife Society. The project is to cover a period of three years (2011-2014) with funding support from the Open Society Foundation for building climate change adaptation

capacity at African universities and has three main components aimed at building the capacity of the university, policy makers and the general public as well. Firstly the project seeks to strengthen teaching and training in climate change adaptation and incorporate adaptation into university wide courses. Secondly the B4C is aimed at enhancing climate change adaptation research in four general areas: food security, water resources, biodiversity and human health. The final component seeks to pursue outreach and policy advocacy intended for policy makers and the general public aimed at increasing capacity for policy formulation. The project core team consists of ten members including a representative of the department of Geography and Resource Development.

The Geography and Resource Development Department has introduced climate change adaptation and disaster risk reduction course contents in the fourth year undergraduate elective and post graduate MPhil curriculum. These elective courses are namely, GEOG 431: climate and society, GEOG 443 Theories and Analytical Methods for Integrated Environmental Health and Disaster Risk, GEOG: Climate change: Arid and semi-arid lands, GEOG 446: Policies and strategies for Integrated Environmental Health and Disaster Risk Reduction in Urban areas. The University of Ghana B4C and Geography Department may indicate that there are initial attempts to create a capacity building base and scientific evidence pool for decision makers. The impact of such programmes would

depend though on the demand from policy makers and the translation of scientific knowledge into a form accessible and relevant to policy and planning of urban areas in Ghana. Section 8.2.3 would provide further details on the knowledge production for decision making.

7.1.2 The Energy Centre: Renewable energy research

The Energy Centre (TEC) is a research institute in the Kwame Nkrumah University of Science and Technology which aims to provide training and advisory services on energy technology, policy and management. Established in 2006, TEC has organised seminars, short courses and training workshops on renewable energy in Ghana. Collaborative efforts have been established with other institutions and organisations such as the Institute for Water and Environmental Engineering, Burkina Faso and the University Of Leicester. In 2010, a World Bank sponsored project was carried out to identify the energy situation in slum areas such as Fadama (Accra) and Aboabo (Kumasi). UNDP collaborated with TEC to research energy use in peri-urban areas. Key informant 26[78] mentioned that energy supply is a critical point for politicians and elections in Ghana.

Ghana is largely dependent on hydro-electricity as a source of energy. According to the report Energy Outlook 2012 (EnergyCommision, 2012), about 67.5% of electricity supply

[78] 26th August, 2011

generated in 2011 was from Akosombo and Kpong hydro-electric dams and the remaining 32.5% from thermal generated energy. Climate variability, droughts and excessive rainfall, have been noted to affect the supply of electricity as well as the safety of the dams (EPA, 2011: 57). The activities of TEC are demand driven as such past adverse weather events and consequent energy supply crisis has been influential in driving the advocacy programmes of the TEC.

Also opportunity for initiating some training programmes and political debates have presented during past energy crisis and election campaigns.

> 'During periods of energy crisis, seminars and workshops were organised to discuss and find ways of solving the crisis. Presentations were made by the Ministry of Energy and the Energy Commission. Following the crisis a series of seminars were launched every semester. During the election year 2007, the presidential candidates were invited to debate their policies on energy if elected. This stimulated debate and another was scheduled for the 2012 elections. By the way seminars on the current LPG gas situation (*nationwide shortage of LPG*) are currently being organised.'[79]

TEC notes that involvement in research addressing 'real life challenges' of energy policy areas have been significant in driving the effective advocacy and training which has merited a place on the Ghana Energy Commission Board. Not only has The Energy Centre been initiating research on energy, the TEC has been influential in contributing to decision making at the national and sector ministerial

[79] Key informant 26, 26th August 2011

levels. The centre's place on the Energy Commission presents an opportunity to influence national level policies. TEC demonstrates the institute's active participation in building decision makers capacity for developing clean, renewable energy. The relevance of TEC short course programmes[80], such as the one supported by the World Bank Solar Capacity Upgrade Project in 2012/2013, highlight the potential for training local governments. However, the extent to which local governments participate in these programmes and the influence in development plans for metropolitan areas is yet to be explored.

7.1.3 University for Development Studies

The University for Development Studies (UDS) was established in 1992 under Act of Parliament, PNDC law 279, as a public university with a focus on studies in medical science, agricultural science and integrated development with an emphasis on the Northern regions of Ghana. PNDC Law 279 (*University for Development Studies*, 1992:Section 3(3)) states 'the University shall undertake research and provide practical training in the subjects taught, particularly subjects which relate to agriculture, social sciences, economics, health, environment and culture and shall in the training use and rely on material available in the north of Ghana in particular and the

[80] The short course programmes were run between September, 2012 and March, 2013 and covered topics such as Bio-gas technology, solar power and energy policy and planning. Places were limited to between 20 and 25, and fees ranged from Ghs 300 to Ghs 1000 per participant.

country in general'. In contributing to fulfilling this mandate, the UDS set up the Centre for Continuing Education and Interdisciplinary Research (CCEIR) to carry out research across different disciplines using evidence base to link research to socio-economic development.

Climate change is yet to appear as a thematic area of research for CCEIR. However, there has been some engagement with climate change studies. For instance, the centre facilitated a workshop by the Environmental Protection Agency on the impact of climate change on vulnerable communities. In addition CCEIR organises two sandwich programmes namely, NGO management and rural development and environmental security and livelihood change, which has a climate change adaptation component. Research on adapting to climate variations has been carried out as individually initiated studies, and at departmental level[81] . Notably the UDS has a Department of Climate change and Food security. Though climate change is a topic of interest for the UDS the focus of such research has been on agriculture and natural resource management. The urban built environment is yet to appear as a theme of UDS research on climate change.

[81] Key informant 21, 22nd August 2011

7.1.4 Building and Road Research Institute (CSIR-BRRI)

The Centre for Scientific and Industrial Research (CSIR) was founded in 1958 as the national research council. The CSIR was re-established and mandated by an Act of parliament, Act 521 in 1996 and is constituted by thirteen institutes. The CSIR is a member of the National Climate Change Committee which formulated the climate change policy framework. There is no specific designated state research institute for urban research. However for built environment research, has been the Building and Road Research Institute (BRRI) which has the mandate for conducting research into buildings and roads to ensure safety, efficiency and economy. Climate change and its effect on buildings and roads have not featured in the research and development activities between 2009 and 2011. During this period, commissioned consultancy and technical services carried out by the BRRI did not include climate change research. As a staff researcher commented 'There is no state investment in built environment research. The current research is driven by personal interests. Research on climate change has been done on personal basis'[82].

The statement of individual researchers' engagement with climate change is confirmed in the annual reports 2009, 2010 and 2011. In November 2010 a member of staff attended the scene setting workshop on prioritisation of Ghana's list of Nationally Appropriate

[82] Key informant 15, 15th August 2011

Mitigation Actions (NAMAs) organised in Kumasi by the Environment Protection Agency. A member of staff presented a paper in 2010 on Mitigating global climate change through the use of Green building materials' as part of internally organised seminars by the CSIR-BRRI. Also in 2011, a member of staff participated in an international training workshop organised in Beijing by the Commission on Science and Technology for Sustainable Development in the South (COMSATS) on regional climate change and its impacts assessment. Highlights of the CSIR-BRRI annual reports between 2009 and 2011 indicate no comprehensive institutionally commissioned research initiatives on climate change and the built environment. The CSIR-BRRI is a key research institute on matters of the built environment, but it appears to have been slow in initiating extensive research on the relation between elements of the built environment and climate change.

7.1.5 Institute of Local Government Studies

The Institute of Local Government Studies (ILGS) is a public management institution established under an Act of Parliament, 647 of 2003. The ILGS was commission in 1999 with a World Bank grant, as a project of the Ministry of Local Government and Rural Development as part of initiatives by the Government of Ghana to equip local government system to play a pivotal role in development and poverty reduction. The institutional development component supported by Dutch grant sought to focus on local governance and

participation in decision making through delivering short-term training courses and long-term masters programmes for local government. The ILGS provides research consultancy services for the government and donors as well as dissemination of information related to local governance. The areas covered by the training include management development, environmental and behaviour change and sanitation.

Climate change training courses for local governments are yet to be introduced by the ILGS. However there have been collaborative programmes with the URAdapt programme. URAdapt, under the International Water Management Institute (IWMI), seeks to 'reduce vulnerability to climate change in Accra and Addis Ababa through improved and integrated urban water management' (IWMI, 2010). The interaction of the ILGS with the URAdapt has created the opportunity to provide insight on how climate change impacts at the local level as well as the possibility to translate into a course module. However the ILGS states that preparation of medium term plans for 2010-2013 had held up initial programmes at introducing climate change courses for local governments.

This research established that there is a limited knowledge base for specific urban-climate change nexus in Ghana. National communications (EPA, 2001; EPA, 2011) submitted to the UNFCCC, highlighting greenhouse gas emissions, impacts and

strategies for addressing climate change in Ghana, have been sector focused and not spatially based. In addition, state initiated studies have understudied the spatial component on climate change. Data on the impact of past adverse weather conditions on infrastructure and lives in urban areas in Ghana, could be accessed through the National Disaster Management Organisation (NADMO). However, localised futuristic climate models have yet to be developed for urban areas in Ghana. In response to the localised data challenge, the national climate change team is preparing localised greenhouse inventory for Sekondi-Takoradi and Accra[83].

The above indicates that efforts are being taken by various educational and research institutes to build capacity for addressing the impacts of climate change in Ghana. These institutions seek to act as data bases of information for policy decision making on mainstreaming climate change in development. There was consensus among local government officials from Accra, Kumasi and Tamale Metropolitan Assemblies that when needed or required there is some engagement with research institutions to inform policy. On the other hand, key informants 9 and 21 suggested that there is limited interaction between policy making at the local government level and research institutions on climate change. Various reasons were suggested to explain this gap. Firstly this was ascribed to time lapse

[83] Key informant 31, 30th August, 2012

between policy-electoral time scales and research periods. Key informant 21's response was typical,

> 'There is a gap between research, practice and policy, between learning institutions and policy makers. Research is perceived by policy makers as 'book long', too theoretical and out of touch with reality and takes too long compared to the time taken to formulate policy'.

The interviews with research institutions suggested that demand for research to inform policy formulation tends to be determined by the public interest in a policy area. In contrast, another perspective highlighted other factors particularly the working experience of researchers in organisations as explained by key informant 9,

> 'Policy makers are more comfortable working researchers who have 'worked' and are familiar with the workings of such organisations. The assumption they have is that we know what they need'

Climate change is obviously a new area of interest for these research institutes and there is yet to be extensive engagement with the built environment aspect of climate change research. In addition to indications that the supply of climate change knowledge for cities is limited, there is minimal guarantee of demand from local government policy makers. Policy responds to public demands and pressure as well as available incentives. One obvious concern in the demand-supply nexus of climate

change knowledge has been the interaction between scientific knowledge and policy formulation. Pelling and Wisner (2009) argued that there is inadequate link between research in academia and government, due to the conservative nature of academia, mistrust of academic sector and professional elites by national government. This is likely to hinder the consideration and integration of scientific models, when available, into development planning frameworks.

7.2 Climate change activism in Ghana: Missing urban context

Since the early 1990s the ideal model of governance for cities in African highlighted in urban studies has been an inclusionary approach to governance. This model recognises that the power to determine the pattern of development as resting not only in the state but in the hands of various groups in society (Dahl, 2005; Mahadevia, 2002). The decentralisation of political and administrative aspects of governance in Ghana has seen intents to bring government decision making closer to the people. The decentralisation of governance was instituted by the Local Government Act 462 in 1988, which initiated the establishment of a four tier structure of governance-regional, district, local council, and town and village development committee. Following the political, administrative and fiscal decentralisation, decentralised development planning was instituted under the National Development Planning

System Act 480 (NDPC, 1994). The four tier governance creates an arena for participation at the smallest spatial scale as stated ‘sub-district and unit committee areas therefore provide the lowest possible level at which all persons within the country can play a part in decision making and development planning process which directly or indirectly affect them' (NDPC, 2009: 38). Therefore planning for development adopts an approach which considers participation from citizen as an effective tool for decision making and channels for engaging with the development needs and aspirations of the citizens. The recognition of the citizen rights to shape the pattern of development is enshrined in the tenets of the constitution of the Fourth republic of Ghana (Ghana, 1992). Consequently this channel of participation creates opportunity for individual as well group interest to be presented through formal political channels. Though opportunities may have been created for participation in the development planning process at the local government level, the effectiveness will depend on the extent of engagement in the decision making process. Therefore it was necessary to explore the activities of non-governmental organisations and built environment professional associations in Ghana, particularly the Ghana Institute of Planners, and determine the extent to which climate change is a theme for advocacy.

7.2.1 Non-Governmental Organisations

The activities of NGOs are considered crucial in the development process, particularly their role as advocates and partners in formulating national policies. Similarly a small number of NGOs in Ghana have carried out advocacy work on poverty reduction and slum upgrading with limited activities on climate change. Three NGOs were contacted to participate in this research- two noted urban NGOs: Global Communities (formerly Cooperative Housing Foundation–CHF International) and Peoples Dialogue on Human Settlements for urban development and CARE International for climate change. Apparently Global Communities Ghana and People's Dialogue on Human Settlements were mentioned by participants in this study as foremost influential NGOs promoting an urban agenda. The objectives of these organisations have centred on poverty reduction and job creation, provision of urban amenities and slum upgrading and seeking the protection of residents in slum communities. These projects are aimed at increasing the overall resilience of the urban poor. Observations of the themes suggest there is yet to be a specific climate change related project, though this is an area of interest for the People's Dialogue on Human Settlements[84]. One NGO actively engaged in programmes aimed at reducing vulnerability to climate change in Ghana has been CARE International.

[84] Email correspondence with Peoples Dialogue on Human Settlements, 3rd December, 2012.

CARE International

CARE international, an international NGO, has been operating in Ghana since 1994. Since its inception in Ghana the focus of CARE activities has been on poverty reduction, promoting participatory governance and fighting HIV/AIDS. However CARE International Ghana responded to the devastating floods of 2007 in the Northern regions of Ghana and since then added on climate change adaptation to its portfolio of activities through the introduction of the Adaptation Learning Programme (ALP) for Africa. The Adaptation Learning Programme for Africa (ALP) is a five-year programme commenced in 2010 supported by the United Kingdom's Department for International Development (DfID), The Ministry of Foreign Affairs of Denmark, The Ministry of Foreign Affairs of Finland and the Austrian Development Cooperation five year programme implemented in four African countries.

The programme employing the community-based adaptation framework seeks to assist vulnerable communities adapt to climate variability. As a part of the policy and advocacy component, CARE ALP seeks to promote the inclusion of community-based adaptation strategies in development planning strategies through engaging with

national and local policy makers. Currently CARE ALP activities are located in selected communities in the East Mamprusi and Bawku District Assembly. The focus of CARE's programme of activities in the Northern regions of Ghana has been on marginal and vulnerable communities; vulnerable communities refer to rural communities where incidence of poverty tends to be high. Urban areas were not considered a priority for the ongoing activities of CARE on climate change in Ghana[85], though urban areas, for instance, in Accra are noted to experience pockets of poverty (Maxwell *et al.*, 2000; Potts, 1995), probably not as significant as in rural settlements.

7.2.2 Professional associations: Ghana Institute of Planners (GIP)

Mitlin (2004) defines civil society to include NGOs as such as CARE International, and voluntary professional associations. However the study of urban professional bodies has been 'limited or selective' (Livingstone and Belshaw, 2002:138). Even when associations in urban Africa have been researched as in the study by Tostensen *et al.*(2001) the extent to which urban development professionals have engaged in addressing urban crisis has been given little or no attention. UN-Habitat Global report on human settlements (2009:51) recognises western professional associations as instrumental in transmitting planning ideas to developing cities.

[85] Key informant 25, 27th August 2011

This is carried out through publication of journals, engaging with international chapters and conferences.

For instance, the President of Commonwealth Association of Planners (CAP) highlights the role of such professional associations as conduits and agents of change (Platt, 2007:11):

> 'We need to now build and strengthen the planning function across the globe, to spread the message about the reforming of the global planning agenda, to highlight the critical urgency of addressing climate change as one of the three global priority issues confronting the planning system, and to empower planners to translate the global to the local in order to address these issues appropriate to their own context.'

The role of the planner as a broker for novel urban planning ideas is not a new phenomenon. Ward (2010) provides a historical account of the spread of planning models and recognises the key influence of transnational planners not only in former colonies but across to less developed countries and eastern Europe. Built environment professionals in Ghana, namely Ghana Institute of Architects, Ghana Institute of Engineers, Ghana Institute of Planners, have been quite vocal on the need for urban development, resilient to the adverse effects of weather events. This section considers the activities of the Ghana Institute of Planners.

The Ghana Institute of Planners (GIP) considers that the institution and individual members in practice have a key role to play in

ensuring urban development is planned to be climate resilient[86]. Much of the activities of planners are directed at drawing up urban plans as well as ensuring individual plot sizes are developed in line with the master plan and building regulations on plot development. However these regulations are regularly flouted by property developers and the master plans not always adhered to[87], and a major contribution to the flooding and loss of green vegetation in Ghana. Climate change presents additional challenges for the long term and is considered a novel area by the GIP. Consequently, as an institution, GIP is yet to have an intensive programme of climate change advocacy, aimed at policy decision makers to address long term concerns of flooding.

For the built environment professional, climate change is a novel subject area[88]. The existing knowledge is inadequate and quite technical for active participation in on-going discussions as well as workshops for the formulation of policies by government. GIP advocacy for proper urban planning is based on the Town and Country Planning regulations. These regulations, with further consideration and revision, have the potential for reducing greenhouse gas emissions and increasing climate resilience of urban areas. Another consideration is that the implications of poor and vice

[86] Key informant 31, 3rd December, 2012
[87] Key informant 20, 19th August, 2011
[88] Key informant 13, 15th August, 2011

versa proper urban planning tend to reach significant proportions in the long term. Unlike other built environment works, such as in engineering and architecture, impacts tend not be immediately noticeable. Consequently when government policy makers are confronted with the current campaign the perceived distance of the manifestations of the consequences does not generate urgency. The government however is more responsive to the GIP advocacy for proper urban planning when there is an emergency or urgent need for the services of the institution[89].

The GIP is yet to assume an active role as agents for the diffusion of climate change policy ideas for planning cities in Ghana. The limited knowledge base is a constraint for planners to act as agents for translating the global ideas like climate change to relevant for local contexts. This knowledge gap reinforces the statement by the Commonwealth Association of Planners (CAP) president for 'building and strengthening the planning function across the globe' (Platt, 2007: 11) to address planning challenges such as those brought on by climate change.

Research institutes have suggested a limited 'supply' of knowledge on climate change and cities. Also social activism by the public and planning professionals has been slow. It appears that global social movement activism for climate change has been missing at the

[89] Key informant 31, 30th August, 2012

national and local scales (Cohen, 2004). Climate change policies are recognised as good practice are recognised in international professional bodies such as Commonwealth Association of Planners (Platt, 2007), Royal Town Planning Institute (RTPI, 2009) and Global Planners Network. There has been limited participation of GIP members' active and continuous engagement with these international professional planners' associations, and the idea seems not to be reflected in activities of the GIP.

Social movements have been identified as a driving force for social and political change in Ghana (Langdon, 2010). Not only were these organised periods of agitation directed at a political change but also towards concerns of neoliberal excesses, urban water and poverty. The same cannot be said for climate change related urban initiatives. This study observed that there was limited organised community based social activism directed towards climate change adaptation and mitigation initiatives in Accra, Kumasi and Tamale. This does not imply however that the impacts of climate-related disasters have not been recognised by the public and discontent expressed at the level of response from urban government. For instance flooding understandably has been a major concern for affected communities in the Accra Metropolitan Assembly (AMA, 2010) and Kumasi Metropolitan Assembly (KMA, 2010). However initiatives for reducing greenhouse gas emissions do not appear as a concern for

attention by communities in the medium term development plans. However in spite of the apparent public discontent there has been an absence of organised movements targeted at metropolitan governments to address climate resilient development and greenhouse gas emission reductions.

A possible factor shaping the current state of non-emergence of social collective action for climate change policies seems to be the distant and intangible concept of climate change to everyday realities. This assertion resonates with responses by local government participants in the selected metropolitan areas about perceptions towards the concept of climate change. Climate change as a concept is not regarded as resonating with the felt needs of the people – the question being how addressing climate change meets basic needs of the city dwellers. The distant and intangible source of the risk of climate change is for most people is not a new phenomenon as explained by Hulme (2009: 196), who asserts that ‘no one can see climate change or feel it happening and the causes of the risk are diffuse and hard to situate' and therefore presents difficulty for individuals in ‘situating risks with their normal daily experience'.

This trend in prioritised needs is reminiscent of a society seeking to satisfy basic needs by pursuing other means such as education, infrastructure and private sector development. Therefore concerns

for climate change policies would probably be considered ‘a luxury good, an object purchased only after other more basic needs have been met' (Hulme, 2009: 181). This is indicative of a materialistic society which ‘tends to be preoccupied with satisfying immediate physiological needs' (Inglehart, 1981: 890). Inglehart (1981), writing on ‘post-materialism in an environment of insecurity', draws a distinction between materialists and post-materialist society and the propensity for each of these towards social action. Inglehart (1981) argues that post-materialists tend to feel relatively secure about their physiological needs and therefore have the capacity and energy to devote for social action towards environmental concerns. This could be a probable explanation for the prominence of social movements in developed countries that have secure physiological needs and the limited and non-emergence of social movements regarding climate change in urban areas in Ghana where most physiological needs are not met.

However a limitation to the explanation from Inglehart’s discourse on post-materialism is the assumption that both those considered materialists and post-materialists are exposed or have the same access to and understanding of information on the subject matter to shape their responses to environmental concerns. Exposure to new ideas and knowledge on a phenomenon has the propensity to grant legitimacy to individual discontent, based on experience, and create platforms for social interaction on the subject the matter (Byrne,

1997). Experiential knowledge tends to have played a significant role in shaping the discontent towards environmental and urban planning issues as captured in the needs and development aspiration of KMA town councils. The extent of public awareness has the potential to influence the emergence of social collective action on climate change policy initiatives.

The preceding discussion has established the framing of climate change as critical in shaping individual as well as social discontent. The framing of climate change appears to have created the non-emergence of social collective action towards climate change. Though these provide explanations they are limited for they concentrate on individual discontent and provide no explanation on how and when individual discontents turn into collective action. Moreover the causal mechanisms which trigger and transforms discontent into social action could be also viewed as opportunities and threats operating in the social structure to which participants belong.

7.3 Donors' agendas for cities and climate change planning in Ghana

Donor partner policy and programme lending conditions has been a significant channel through which novel policy ideas and research topics have been introduced in developing countries. Since the 1980s urban development themes in Sub-Saharan Africa has been shaped

by international agencies such as the World Bank and donor countries, therefore research topics are determined by the financing agency reflecting donor priorities (Myers, 2011; Stren, 1994; Stren, 1992). For instance, the budget guidelines specified by Ministry of Finance and Economic Planning (MoFEP) reflect the influence of donor targets and objectives in MDA plans, 'activities that will lead to the attainment of targets and triggers defined in the Multi Donor Budget Support PRSC/MDBS matrices should be budgeted for by all MDAs' (MoFEP 2011, 5.23). Multilateral and bilateral agencies in Ghana have been pursuing programmes with the purpose of supporting the government of Ghana to address climate change adaptation and mitigation as well as mainstreaming into development plans. Multilateral institutions have arguably been key conduits through which dominant development ideas propounded have diffused to various states and organisations (Escobar, 1995; Roy, 2010). International organisations are regarded as observers under the UNFCCC and not party to the convention and Kyoto protocol (UN, 1992, Article 7:6). However climate change strategies and policies have been developed by these international agencies for internal organisational operations as well as programmes for their clients or patrons.

In essence observer organisations, such as the UN agencies, may act as incubators and disseminators of climate change policy ideas.

Borrowing concepts in the spread of contagious diseases (Webber, 2009), the international agencies have become 'infective hosts' of climate change policy ideas. This could be as a result of their contact and complementing activities with scientific and policy knowledge in the IPCC reports and UNFCCC. Policy ideas for climate change are incubated by these organisations and spread through contact with national and subnational governments and enhanced by the susceptible position of most African governments to dominant development discourse (Escobar, 1995; Glennie, 2008). A cursory look at international financial and development agencies seems to suggest that efforts have been made to integrate climate change mitigation and adaptation in their organisational strategies for city development. The following sections examine country climate change programmes of the World Bank and United Nations Development Programme (UNDP) to reveal the component for cities in Ghana and determine whether there are incentives for adopting climate change policies for metropolitan areas.

7.3.1 World Bank-Ghana

The World Bank's Urban and local government strategy has a component to address climate change in its internal organisational activities. For instance Strategy 5: is aimed at 'Promoting a Safe and Sustainable Urban Environment'(World Bank, 2009b). In addition to this strategy the Bank initiated an Eco²Cities program 'to help cities

in developing countries achieve greater ecological and economic sustainability'(World Bank, 2010b). With the Climate Change conference in Cancun (COP 16) as a backdrop, the World Bank has published a report-Cities and Climate Change: An Urgent Agenda (World Bank, 2010a) which called for urgent action on climate change in cities especially developing and least developed countries. These are World Bank strategies aimed at shaping decision making for programmes and plans rolled out for urban development. How these international plans are reflected in national and metropolitan government plans in Ghana is explored in this section.

The World Bank (WB) seeks to provide support for the government of Ghana with initiatives on reducing GHG emissions and climate change mitigation and adaptation. The WB in a report on Cities and climate change (World Bank, 2010a) considers the crucial role cities play in mitigating the impacts of climate change. Since 1968, the World Bank has carried out over 60 urban related projects in Ghana. The range of projects has spanned sectors such as governance, water and sanitation, health, transport and land administration. Significant projects funded by the World Bank include Urban (I-V) with the Agencies Francaise Development (AFD). Since 2004, the AFD, the French bilateral agency has focussed on three key areas- agriculture and rural development, urban development and local government and energy. Between 2004 and 2011, 20.7% of the commitments of

AFD have been allocated to urban development and supporting local government. Not only are the funds being allocated for urban development essential but the programmes are considered significant in driving attention to urban issues. Previously initiated and on-going infrastructure programmes include urban transport, environment and sanitation and water. Similarly institutional capacity building programmes for metropolitan assemblies are being prepared under the District Development Facility (DDF).

World Bank programme for climate change in Ghana was yet to reflect a specific urban spatial component, in the current initiatives aimed at assisting the government of Ghana to respond to climate change[90]. The initiatives are focused on mitigating greenhouse gas emissions through programmes such as Reducing Emissions from Deforestation and Forest Degradation (REDD) and carbon partnerships for forestry. Other projects include GEF-EDAP alternative sources of energy for off the grid communities, Natural resources and environmental governance as well as supporting Ghana government's policy measures to mainstream climate change in different sectors and assist access to climate funds. A major component of donor support to Ghana's effort on climate change has been pursued through consolidated Multi-Donor Sector Budget Support (MDBS) and World Bank led Natural Resources and

[90] Key informant 4, 5th August 2011

Environmental Governance programme (NREG). The memorandum of understanding between donor partners (DfID, AFD, EKN, EU, World Bank) and the government of Ghana signed in April 2008, has seen the disbursement of $40 million under the first, second and third development policy operations (DPO) for NREG which were closed in 2010. The current programme of technical assistance for NREG is still in the pipeline. The objectives of the lending facility for the NREG programme (2008- 2010) did not include a prior action or a target bench mark on an urban development component. The first, second and third NREG DPO show three areas for prior action as stated in the legal agreement namely forestry, environmental protection and mining were achieved.

Clearly the current focus has been an approach targeted at agriculture and natural resources sector. However the urban spatial context and climate change are yet to be integrated in the multilateral donor programmes on climate change. The specific built environment component appears to be absent in the climate change adaptation programmes of donor agencies. As emphasised by key informant 4:

> 'Urban and city related strategies have not been considered in the strategies and programmes of the climate change team of the World Bank in Ghana. Currently no city and climate change projects are taking place'

Though the activities carried out by the WB may not have a direct urban component, the programmes may have indirect impact through national scale programmes such as the natural resource environmental governance programme (World Bank, 2011).

The size of urban population in Ghana is comparatively marginal on a global scale. In addition the absence of spatial based urban component has not featured prominently in donor programme on climate change due to levels of urbanisation in Ghana which are comparatively to attract substantial climate change investments by donor partners. Ghana's urbanisation level reached 51% of the total population in 2010 that is about 10 million people living in urban areas. Accra and Kumasi both constitute the largest percentage of the urban dwellers. Though the percentages provide a description of the relative spatial distribution of total population, the absolute numbers of the urban areas studied are on a global scale comparatively minimal. Coupled with the population size is the percentage exposed to climatic hazards. The World Bank estimated that in 2011, 178 million people globally were affected by floods, 90% of those affected live in Asia. The intersection of population size with exposure to climate hazards appears to determine the allocation of funding for cities and climate resilient programmes. Another observed factor of limited reflection of urban climate change initiatives in World Bank programmes for Ghana has been

the rationale for allocating climate funds; the for sectors perceived as constituting high national economic significance.

> 'The focus has been on the poorest in society, agriculture and natural resources due to their vulnerability and the share of employment by these sensitive sectors' [91]

7.3.2 UNDP-Ghana: African Adaptation Programme

The UNDP is one of the initial partners, as well as an implementation agency of the Global Environmental Facility (GEF), 'a financial mechanism to facilitate developing countries action on global environmental problems' (Fairman, 1996) climate change included . UNDP/GEF has been influential in supporting developing countries initiate and integrate climate change adaptation into development (UNDP, 2010). By 2013, 130 developing countries submitted National Adaptation Programmes of Action (NAPA) and National Communications from Non Annex 1 countries have been developed with significant assistance from the UNDP/UNEP/GEF National Communication Support Programme.

UNDP-Ghana has made significant contributions to initiatives by the government of Ghana at setting up programmes aimed at reducing GHG emissions and building resilience for climate change through the African Adaptation Programme. Initiatives have been sectoral approach and a spatial component is absent. The UNDP for instance

[91] Key informant 4, 5th August 2011

supports the building of institutional capacity to integrate disaster risk reduction in development plans, metropolitan plans included presumably though initial pilot schemes for the AAP are based in four districts. The UNDP country programme document for Ghana for 2012-2016 was aligned with the Ghana government's medium term policy framework GSGDA, focussing on sustainable human development, inclusive growth and democratic governance and consolidation of peace (UNDP, 2011). Relevant for this research is the alignment with national goal in the GSGDA of adapting the impacts of and reducing vulnerability to climate variability and change.

The UNDP programme seeks to 'scale up support for integrating adaptation and mitigation strategies and practices into development policies plans and programmes' and intends to address this in four areas (UNDP, 2011: 3). Firstly, the programme plans to strengthen the capacity of the Ghana climate change committee in policy development, coordination of sectorial strategies and participation in international negotiations. Secondly, the promotion of renewable and energy efficient sources of power as well as adaptation initiatives would be targeted. Also support will also be provided for relevant stakeholders in government and private sector to access international climate funds. Finally the Hyogo framework for action sets a basis for supporting a national strategy for creating public awareness and

development and implementation of disaster risk reduction particularly budget allocation.

Prior to the intended objectives, the UNDP, through the joint African Adaptation (AAP) programme, has been addressing concerns of disaster risks focussing on eight key sectors (Fig. 7.3). The UNDP-AAP initiated in 2008 is a joint collaboration with the United Nations Industrial Development Organisation (UNIDO), United nations Children's' Educational Fund (UNICEF) and World Food Programme (WFP) with financial support of $92.1 million from Government of Japan. With twenty developing countries participating, the programme adopts a strategic focus to strengthen capacity in five areas: data and information management, institution and leadership, analysis and implementation, knowledge management and innovative finance. UNDP-AAP Ghana annual report for 2011 indicates that some achievements have been made towards mainstreaming climate change in development plans through partnership with the NDPC. In 2011 workshops on integrating climate change in development planning was organised for representatives from the one hundred and seventy district assemblies and eight civil society organisations. The emphasis (preference for) on a sectoral approach is also evident in the targeted objectives of the UNDP-AAP which tends to miss an explicit spatial component.

Figure 7.2 UNDP African Adaptation Programme focus areas
Source: Adapted from UNDP-Africa Adaptation Programme for Ghana

7.3.3 CIDA and DfID

Considering that donor agencies have been influential in shaping the nature of urban development initiatives in Ghana their priorities are crucial in driving climate adaptation initiatives in urban areas. Training and capacity building for mainstreaming climate change in development plans has been ongoing. Though capacity building is critical for metropolitan governments specific financial incentives for city initiatives are minimal. From donor priority areas, it is more

likely to receive funding for agriculture or natural resource management than for urban programmes for climate change policies.

However the focus on sensitive sectors takes considerations beyond national concerns to involve components of donor priorities. For instance the Canadian International Development Agency (CIDA) indicated that climate change in urban areas is not a particular focus of CIDA's programming in Ghana. The focus areas for climate change are determined by the needs of the recipient country as well as alignment with donors' foreign policy and development assistance priorities. Also, the DfID operational plan for the period 2011-2015 (DfID, 2010) identifies climate change as one of the twelve pillars or areas of strategic priority with £3,700,000 (1%) funding allocation.

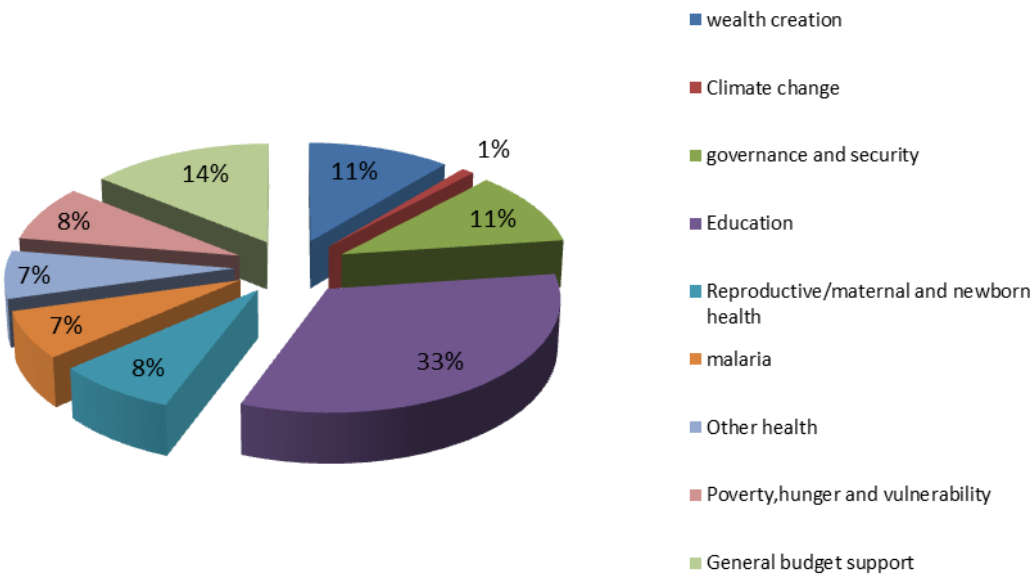


Figure 7.3 DfID Ghana operational plan strategic priority areas (2011-2015)
Source: Adapted by from DfID, 2010

The attention to climate change in the DfID operational plan for Ghana seeks to be aligned with the structural reform plan (2000-2015) which spells out the UK coalition government's objectives on international development based on four commitments; honouring international commitments, wealth creations, governance and gender equality. Interestingly, 'DFID Ghana has significantly rationalised its sector engagement, withdrawing from intensive engagement in transport, agriculture, land and water' (DfID, 2010: 4). Withdrawal from these areas determines the patterns of spending of the 1% allocated to climate change and a non-involvement in an already missing spatial development component by DFID.

Despite wide donor partner concern, climate change policies are yet to appear explicitly as conditionality or requirement for accessing development funding particularly when the concept of conditionality appears to be less palatable in development funding. The World Bank for instance indicated

> 'Climate change is not conditionality for accessing funding from the Bank. Conditionalities have been toned down and the ownership concept is being promoted in the Bank's lending activities' [92]

However safeguard policies issued by donor funding partners consider meeting environmental and social targets as a major

[92] Key informant 4, 5th August 2011

component for project and funding approval and crucial in preventing and mitigating undue harm to people and their environment in the development process. One can conclude that the current donor programmes generally miss the spatial component in the global scheme of climate change funding and reflected in donor priority funding.

7.4 Conclusion: Emerging policy environment for adopting climate change policies

This chapter examined the knowledge base, social activism and donor partner activities accessible for climate change policy making. First, it considered research institutes and climate change component of their research programmes. Climate change research is an emerging theme in most of these institutes. As a result knowledge produced for cities and climate change has been minimal and is yet to gain prominence. Based on interviews and analysis of policy documents the various development actors and policy action arenas for decision making on climate change and urban development have been presented above. There appears to be a number of initiatives by state actors, metropolitan governments, donor partners and civil society organisations to assist in planning for climate change at national and metropolitan levels of governance. Evidently the decision to adopt climate change initiatives in development plans would tends to be influenced by a variety of actors and affected by

policy decisions across different scales in various organisations. The three metropolitan governments studied do not have absolute autonomy to make decisions on climate change policies. In the process of formulating development plans metropolitan governments engage with research institutes, NGOs and donor partners. Since climate change appears to be a weak subject of interest for organisational engagement between urban local government and development actors, consequently there would be minimal reflection in the development plans. In summary local governments in Ghana are operating in a policy decision-making environment where there is limited activism, knowledge base and policy incentives for planning for climate change climate in Ghana's urban areas, and consequently shaped limited climate change adaptation and mitigation policies in the AMA, KMA and TaMA development plans for 2011-2013.

8 Determinants for Climate Change Policy Adoption: Structural Relations and Perceptions

This chapter draws on the policy responses of Government of Ghana, metropolitan governments and other actors in urban development, with regard to adopting climate change policies for urban areas in Ghana, and seeks to provide an explanatory framework for the adoption of climate change policies, with reference to the conceptual framework presented in Chapter 3. Metropolitan assemblies in Ghana have responded differently to policy directives on climate change in the GSGDA (2010-2013). To recap, the preceding Chapters 5 to 7 stressed the institutional, financial and expertise factors determining the extent to which climate change considerations have been included in metropolitan development plans and the policy environment metropolitan governments in Ghana operate within. The purpose of this chapter is to bring to the fore the underlying structures and power dimensions that shaped the adoption and content of climate change policies in metropolitan development plans. The complex processes of policy making, actors involved and action arenas engender metropolitan governments' engagement in various relations of production. Consequently metropolitan governments attempt to mediate the tensions in these relations brought on by dependence and the desire for autonomy.

This research has established that there is substantial evidence suggesting that climate change has received limited policy attention in the current urban development planning framework in Ghana. Secondly the study suggests that the current state of climate change development planning in Ghana's metropolises is a reflection of the tensions between the move towards universal and contextual factors when the drive for organisational and institutional change is introduced into a political system. The resultant contradictions and dialectical tensions are presented to show that the observed limited attention to climate change issues in urban areas in Ghana is a reflection of policy makers and other actors mediating the contradictory spaces, concepts and the associated tensions that accompany the impetus for organisational and institutional change.

8.1 Structural relations: metropolitan governments and actors in development

Metropolitan governments in Ghana, whilst in the process of managing cities, have entered into various relations with national, transnational and local actors. To ensure that the cities are managed effectively, alliances are formed and interests shaped. It is these relations, and sometimes varying interests of actors, that generate tensions. The following sections explain these relations, the associated tensions and how they have shaped the output of development plans for metropolitan areas in Ghana.

8.1.1 Central government -metropolitan relations: multilevel governance

Through NDPC prescriptions of development themes and budgetary directives by the MoFEP, metropolitan governments have introduced initiatives to address climate change in the medium development plans. The drive towards integrating climate change mitigation and adaptation policies in development plans in Ghana was not endogenously initiated by the metropolitan assembly. However the impacts of adverse weather events in the form of floods and droughts have been included in previous development plans. The directives, however, present a novel approach to development planning, namely that of climate risk management and reduction of greenhouse gas emissions. Though the policy responses of all three metropolitan assemblies are varied they could all be regarded as limited with regards to principles of mainstreaming climate change in development plans (La Trobe and Davis, 2005). The underlying hierarchical structure of government in Ghana has been influential in driving metropolitan governments' preliminary attempts to initiate climate change concerns. Also coercive mechanisms depicted in international-national relations (Simmons and Elkins, 2004) are manifested in national and local government relations. The central government–local government ties as a mechanism for the spread of novel policy ideas to metropolitan governments appears to be an

aspect that has been understudied in policy diffusion studies, and this research has contribution to.

Metropolitan governments occupy a position in the government hierarchy of Ghana which creates susceptibility to the influence of conditionalities and prescriptions of national governments. Though there have been initiatives to decentralise governance of subnational and grant a level of autonomy to local governments, central government continues to exert influence in determining development themes and budgetary allocations. This study contributes to wider research that there remains a substantial degree of power concentrated within central government over allocation of financial resources to local governments. This is not to portray metropolitan governments or local authorities in general as passive, as will be explained later in subsequent sections. This research has confirmed that metropolitan government tend to adopt a position of subservience to these directives and prescriptions for development plans, planning for climate change and disaster risk reduction inclusive.

As stated in section 6.1, the metropolitan development plans are modelled on the medium term development policy framework developed by the NDPC. For 2010-2013 year period the GSGDA provided thematic areas for development focus. Local governments are required to comply with these directives and prepare

development plans accordingly. Therefore metropolitan development plans indicate projects and activities outlining how the thematic areas would be addressed for the medium term. Since ‘climate change and disaster risk reduction' is a designated focus area, metropolitan assemblies would need to specify measures to address it. This does not imply that metropolitan assemblies are passive and have no plans for development prior to receiving NDPC policy framework guidelines. Furthermore the impacts of climate-related disasters are recognised as affecting development. However metropolitan visions are to be harmonised with the national development planning guidelines to ensure a coordinated national development plan. In addition to the metropolitan development plans, subject to national policy guidelines, the fiscal budget is also defined by guidelines from the Ministry of Finance and Economic Planning (MoFEP).

The MoFEP directives specify that district budgets should have a component for climate change and environmental concerns. Therefore metropolitan governments included a component of addressing flooding and waste management in the MMTDP. In Chapter 6, the financial dependency of metropolitan governments on external sources, district assembly common fund and donor funding was clearly spelt out. Development funds also tend to be tied to

specific projects and investment themes for the medium term period under study climate change appears not been tied to any of these funding streams. Moreover the internally generated funds[93] are inadequate to finance development projects in the metropolitan assemblies. The additional cost of ensuring climate resilient development in Ghana is noted in a World Bank report on the Economics of Climate Change Adaptation (World Bank, 2010c). Metropolitan governments are not entirely financially autonomous and heavily dependent on donor funds and DACF. Due to the financial and institutional requirements for development planning from external sources, metropolitan governments therefore may to be subject to their influence.

The restricted autonomy of metropolitan assemblies has been shaped by the centralised-local relations with state government. The hierarchical relation with central government is the means through which climate change policy initiatives have diffused to metropolitan governments. This is a variation from dominant cross-sectional governmental diffusion. Nonetheless other urban governments such as those in South Africa adopted climate change initiatives without national government directives, which granted these municipalities a degree of autonomy to initiate and fund

[93] The Internally Generated Funds are generated from taxes, rates and licences as detailed in the Ghana Local Government Act 462 (1993) Sixth Schedule.

projects. Literature has indicated that local government networks have been influential in driving action on climate change. This study challenges this assertion and shows that the top-down approach to development planning still presents channels for local governments engaging with climate change. As a result this mechanism has been influential in driving local governments to engage and initiate climate change projects.

In addition, coercive mechanisms have been noted as driving adoption of policy innovations. Studies on the external pressure to adopt a new policy have focused on a macro-scale investigating nation states and international financial institutions. Considering that urban governance models depict varying degrees of autonomy from federal/national government, the interaction between national government and local government could also mimic coercive mechanisms due to the position of local governments in the hierarchy of government structures in Ghana. The case of metropolitan governments in Ghana highlights the essence of multi-level governance as a mechanism for the transmission of climate change policies. Particularly hierarchical multi-level governance and how that influences the government below to adopt new policies. This resonates with (ref) assertion on the critical role multi-level governance

8.1.2 Metropolitan governments' insulated from city networks

When policymakers are faced with limited information and uncertainty regarding decision making, they often engage in a social learning about implementation of novel policy ideas with other policymakers either in geographical proximity or/and through political networks (Gilardi *et al.*, 2009b; Mintrom and Vergari, 1998). Due to uncertainty in decision making, policy makers draw lessons from already existing models prior to adopting new policies (DiMaggio and Powell, 1983). Of relevance here is the implication that new policy ideas spread and are sustained through interacting with other policy makers. Utilising network theory, Mark Granovetter (1983, 1973) argues that interpersonal interactions, which he terms ties, are critical mechanisms in determining the diffusion of policy innovation. The intensity of a 'tie' is dependent on four factors - amount of time, emotional intensity, intimacy and reciprocal services (Granovetter, 1973:1361) - and emerges in three different forms - weak, strong and absent ties. Studies mentioned earlier have focussed on conceptualising weak and strong ties however limited attention has been given to theorising absent ties.

Metropolitan government officials who participated in this research stated that there has been no substantial engagement with climate change policy networks, such as International Council for Local Environmental Initiatives (ICLEI), C40 and other sister city partnerships, on climate change to influence policy at the local level.

Despite the National Association of Local Authorities in Ghana's (NALAG) associate membership of ICLEI, Ghanaian metropolitan authorities have not engaged with the Climate Protection Programme or with other local governments signed up for the program . AMA, KMA and TaMA have engaged in sister-city partnerships, yet the focus has been on economic, social and cultural exchanges. Though climate-related concerns are appreciated they are yet to form the basis of political interactions with African cities. We can ask what accounts for the absent ties with climate city networks and why the quest for addressing disaster-related issues has not been a basis for interacting with other city governments within Ghana, regionally and worldwide. Drawing on Granovetter's (1983) and Ruef's (2002) exposition on ties, this section suggests that a global and national urban structure characterised by centrality and fragmentation has created absent and directed ties.

Climate change local government networks have been regarded as one of the key channels through which local governments have adopted climate change policy initiatives. For these organisations, addressing climate change attains normative status and membership with participation in these organisations tends to compel the adherence of such norms. When there are absent or restricted ties to these organisations two factors manifest: there is limited communication and access to network-based knowledge on climate initiatives, and secondly there is no compulsion for conformity.

ICLEI has been widely considered as at the forefront of promoting and coordinating local government action on climate change through the Cities and Climate Programme and Resilient Cities Initiative. Membership is exclusively open to local government and local government associations. Annual fees are levied on the basis of World Bank-calculated Gross national product (GNP), the population size and the type of organisation, association or local government. NALAG, the umbrella organisation of all local governments in Ghana, is an associate member of ICLEI and participated in the founding congress which resulted in the formation of the organisation. The associate membership is a subscription service that does not constitute an official category of membership with formal powers. The subscription provisions permit associate members limited powers for participation in programmes, and restricted access to information and available funding opportunities. Although NALAG is considered an associate member, there has been limited active participation in ICLEI activities. The nature of membership categories in the ICLEI network contributes to this manifestation of structural gaps restricting the transmission of policy innovation initiatives on climate change.

On the other hand there seems to be some initial involvement in climate activities by a few Ghanaian local governments. In the run up to the UNFCCC conference of parties (COP) 17 in Durban 2011, a conference was held in Durban titled Local Climate solutions for

Africa. A major outcome of this conference was the Mayors' declaration on climate change. Three Ghanaian local governments' mayors from Kumasi Metropolitan Assembly, Accra Metropolitan Assembly and Yendi Municipality, in addition to the NALAG, signed the declaration. Though it may appear there is wide consensus among African mayors on promoting climate solutions in urban areas, there is a wide disjuncture in the reflection of these initiatives in influencing the planning of development at the local level. Local governments in Ghana on their own are financially handicapped to engage directly with ICLEI activities. The budgetary pressures of local governments are considered a constraint on direct participation particularly when there is a heavy reliance on donor support and district assembly common fund from national government which have specific use allocations.

As a result of the indirect ties to ICLEI through the NALAG, local governments tend to be insulated from the organisation's activities on climate change unless through the association taking the initiative. KMA, AMA and TaMA have currently not engaged in sister city partnerships with other ICLEI- Africa member cities. On the other hand Accra is in a sister city partnership with Chicago, which is also a member of ICLEI-USA. However the environment has not featured strongly in the focus of the partnership since its inception in 1986. Worldwide networks of local governments such as ICLEI, United Cities and Local Governments have introduced

climate adaptation initiatives for members. Though strategies and manuals have been produced to assist members in preparing for resilient development of their cities there are no mandatory obligations to follow these regulations.

During the research it was identified that the three metropolitan governments considered the expected utility of the city partnership or network as a primary motivation for continuous engagement.

> 'Programmes are lined up focussing on education, health and culture. Reciprocal visits are scheduled between the two cities and cultural and educational exchange takes place. The assembly receives educational materials and donations. … The relationship with _____ was established based on trade relations, trading in cattle. They have the cattle and we have the market'. [94]

The expected utility of ties to a network or another sister city is a crucial consideration for the formation and active participation in networks. KMA is one of the south cities to benefit from the LOGOS South programme, initiated by the Netherlands government, with funds allocated through the Almere Municipality. Chicago has been in a sister city partnership with Accra since 1986 and as the agreement states exchange, sharing, mutual understanding and continued cooperation has been the underpinnings of the agreement between these two cities. Both cities expect to benefit from this partnership though there are no indications that benefits are mutual. However recognisable benefits have been experienced during

[94] Key informant 23, 23rd August 2011

flooding crisis situation. For instance in 1995, when Accra experienced devastating floods displacing many residents, emergency medical supplies and clothing were organised by Chicago for affected residents in Accra.

8.1.3 Societal, organisational and bureaucrats benefits of climate change policies

This study has demonstrated that the policy intent to adopt measures for addressing climate change are not entirely driven by the concern for impacts of adverse climate conditions on urban development. The ability of a policy innovation to resolve multiple development problems could be crucial in motivating policy makers to include on the agenda, even when there appears to be limited public support for the policy. Analysing development planning in Ghana may suggest that policy makers adopt a policy innovation through a calculative means, by assessing the expected utility and costs before adopting a policy innovation (Cook, 2010; Krause and Méndez, 2005). From an economic perspective, the limited resources to address numerous development needs require making rational choices. Policy makers therefore aim to limit the opportunity costs of adopting a policy by applying a multiplier effect assessment to development planning formulation and justifying adoption of a policy theme in the development plan.

For this context, the multiplier effect approach realises that the adoption of climate change as a policy initiative has the potential to address other development concerns to which solutions are being sought. An investigation of the metropolitan development plans in the previous chapter, demonstrated that climate change projects were included in the plan due to the possibility that they could address other development concerns. As a stand-alone project ‘climate change' initiatives have limited value until they are linked to existing concerns for the local context. Therefore climate change initiatives are tied to already existing concerns the metropolitan assembly to address. For instance, Tamale Metropolitan Assembly mentioned that tree planting would form a crucial part of its programmes to deal with the effect of climate variability. However, on a wider scale , ‘tree planting' is addressing more than contributing to reducing green-house gas emission, but also has the prospects of eradicating desertification creeping towards the city. Also the construction of urban drainage by the AMA is intended to combat flood waters as well as expand the drainage system which is inadequate for the increased population of Accra. From a rational-choice perspective climate change resilient initiatives assume multiple instrumental potentials for reducing greenhouse gas emissions and increasing resilience in addition to infrastructure development. The perceived instrumental value of CCI makes it an attractive concept to policy makers.

From this study it seems that bounded rationality of policy actors, limited available localised knowledge on climate change to inform decision making and the uncertainty that surrounds ‘climate change' contributed to the manifestation of limited policy initiatives by metropolitan governments. Consequently the policy initiatives are taken as small incremental steps not as comprehensive mainstreaming programmes. This appears to confirm Lindblom (1959) discourse on incrementalism in politics. Rather than taking drastic steps to integrate climate change concerns in aspects of development planning, the incremental approach seeks to take small initial steps. However one might contemplate whether these initiatives are suitable small steps towards a long term goal or in the case of the GSGDA a medium term goal.

The initiatives taken by local governments could be regarded as initial policy steps to meet thematic requirements under the medium term GSGDA in response to a number of factors -novelty of the idea; the limited access to technical expertise and lack of political interaction on the subject matter. The concept of mainstreaming climate change in development is a novel area for local government policy makers in Ghana. The possibility of flooding, drought and other adverse impacts of climate-related activities are clearly recognised by metropolitan governments as affecting development in

metropolitan areas considered in this study. However climate change presents a new dimension of policy making requiring a climate risk management approach. For metropolitan governments, the novelty of planning for climate change is conceptualised as a global environmental and development agenda for which Ghana and other developing countries have contributed marginally and are envisaged to be adversely affected. Policy studies indicate that policy makers are sceptical about adopting new policy initiatives and limited political interaction on the subject matter. However these initiatives raise questions as to the extent to which long term goals influenced the short term policy decisions. The programmes local governments plan to pursue in response to the threat of climate change could alternatively be considered as political rhetoric (Krebs and Jackson, 2007).

An organisation's expected utility from a policy innovation is adequate to drive adoption based on a rational analysis of the intended policy. It has been argued that organisations employ calculative, rational decision making processes to justify the adoption of a policy. Particularly, the rationality comes to play when demands for government are numerous and financial resources to meet these demands are limited. Climate resilient initiatives are just one of the several agendas brought to metropolitan government's attention. This study showed that to justify a place on the metropolitan policy agenda, addressing ‘climate change' needed to

demonstrate that the benefits would transcend the global agenda and assume relatively societal, organisational and personal dimensions as well.

Social, environmental and economic impacts of climate resilient development planning are clearly stated in national assessment documents. Though national assessments are organised on national scales and local scaled down models are unavailable, the benefits to metropolitan areas are ascribed from the national models. To recap, various potential benefits to society have been identified, for instance improved environmental conditions, resilient urban infrastructure among others. The negative impacts of these development initiatives are rarely investigated. For instance in defining causality of floods in Accra and Kumasi as a consequence of erratic weather patterns and by haphazard urban development measures taken by the Metropolitan assemblies, would probably address future flooding incidents. Other measures include eviction of residents from lands liable to flood, and built areas occupied by housing but not allocated for residential development. Therefore, in addressing concerns of flooding, one may ask what social costs are incurred and whether they outweigh the benefits to society and the metropolitan assembly.

The research acknowledged that beyond the societal gains, potential benefits also accrue for the metropolis as an organisation. National

government funding allocated to climate change initiatives by metropolitan governments provides additional resources to address development projects. An investigation of the projects that metropolitan governments stated as being under climate change showed that it was more than about solving global climate change and the projects were in demand by the public prior to the introduction of the concept to local governments. The impacts of adopting climate-resilient development planning on organisational/administrative dimensions of metropolitan assemblies, prior to this research, have been understudied. Accra, Kumasi and Tamale metropolitan assemblies face challenges in rationalising the decision making process especially when organisations are not equipped with personnel well versed in climate risk management. Tamale and Kumasi Metropolitan assemblies mention that it would be an additional cost to prepare a comprehensive climate change response plan, citing lack of technical expertise.

Drawing on Downs' (1957) game theory, politicians are not driven just by their social functions as government official but also by private motives of enhancing their political careers. Climate change mitigation and adaptation initiatives have been highlighted as beneficial for the development of urban areas in Ghana. This study established that there were no direct expected political consequences associated with adopting climate resilient development. 'Climate

change mitigation' as a subject matter appears not to attract electoral votes. On the other hand measures to resolve flooding in Accra and Kumasi and drought conditions are key themes of public interest which tend to gain the attention of political leaders. Chapter 6 provided accounts which strongly suggest that climate change and mitigation of greenhouse gas emissions is not a priority on the public agenda. However, in areas where citizens are affected by floods and other impacts of adverse weather conditions the adaptation dimension of climate-related impacts is a major public concern. Though mostly not attributed to adverse weather conditions, floods and droughts are perceived as a consequence of attitudinal problems.

For Accra, Kumasi and Tamale metropolitan assemblies, their climate change adaptation initiatives have political salience: drought and excessive heat for TaMA and flooding for AMA and KMA. In a political system characterised by power redistributed to international institutions above and to civil society below, the political salience of a policy agenda is tied with the public's agenda (Parsons, 1995). Consequently political leaders are more likely to shun policy agendas which are not popular with the public. Going contrary to public opinion or interest is equivalent to incurring public displeasure and thereby detrimental to their political careers. The salience of climate change to the local politician is shaped by the associated benefits not only to the metropolitan area but also to advance their political career through expected electoral votes or

political recommendations. Another dimension is to consider politicians as not only driven by public agenda but also as critical actors in ‘marketing’ climate change ideas to the public.

8.2 Perceptions of climate change policy ideas

This study has presented the opportunity to observe metropolitan organisational behaviour and highlighted the influence of novel ideas in creating a sense of disequilibrium in a social system. New ideas introduced into a society may generate conflict with already existing values and institutions and create organisational disruptions (Bounfour, 2009). Institutions and actors then respond to this intrusion by attempting to maintain or create a new sense of equilibrium. This research has emphasised that the perception of the climate change have the potential to drive action by metropolitan governments. Climate change policymaking presents an opportunity to revisit the debate on the role of exogenously initiated ideas in initiating organisational and institutional change at the sub-national level. This research suggests that various social constructs of ‘climate change' in normative and positivist terms have been influential in shaping the propensity, and the degree to which the policy ideas would be adopted and integrated by metropolitan governments. The social construct of climate change is shaped by inherent attributes of the subject matter ascribed by actors involved. This confirms Roger’s (2003) assertion that the perceived attributes of an innovation drive its adoption. Also, at the metropolitan level,

climate change is social reconstructed to suit the needs of the local context (Pettenger, 2007).

Normative arguments emphasise the role of ideas and concepts in driving the propensity for policy to be adopted. The argument is that when an idea attains normative value and assumes a status of modernity; participants in a social structure are likely to accept it particularly when not doing so would appear to be deemed a deviant act. Chapter 3 observed that in the international arena, climate change policy has attained normative status (Garcia, 2010). Socially constructed as an international norm, national climate change policies intend to constrain political behaviour and create obligations for national governments to promote action. On a different scale, within certain national level organisations engaged in climate change studies and policy formation, the concept is emerging and attaining a degree of salience. The salience is being attained primarily among research organisations and ministerial departments and agencies actively engaging continually with climate change discussions. For norm consolidation in metropolitan government circles it is required that internalisation of the climate change concept would occur in different departments of government. As metropolitan governments have shown, the extent of internalisation into all metropolitan activities has been significantly minimal.

8.2.1 Climate change policy ideas: an imposed symbol of modernity

Metropolitan governments' response to climate change in development plans points to the fact that climate change is yet to emerge as a norm. It is business as usual in metropolitan development planning. Chapter 3 concluded that norms and rules which constrain and govern individual and organisational behaviour are also linked to status symbols in the group (Cohen, 1965; Hogg and Reid, 2006). Therefore members conform so as not to appear deviant and dent their social image. It stands to reason, from a sociological viewpoint on in-group bias and out-group hostility, that non-members of a social group are highly unlikely to adopt a norm from a different social group. On the other hand intergroup competition conflicts would suggest that if an idea attains utilitarian proportions a group is likely to borrow or steal from its competitors (Nasheri, 2005). One could assume that if climate change policy ideas have assumed normative status internationally, national and subnational governments would readily accept and engage with. It could be said, for Ghana metropolitan governments, that they are in the initial stages of imitating a norm consolidated at the international stage through national state institutions. However climate resilient development planning as a development paradigm has not achieved adequate salience at the subnational level to affect the image of the assembly. Compared to a number of state declarations implying that

addressing climate change would enhance Ghana's image as a pacesetter on achieving development goals, the same perceptions cannot be identified at the metropolitan government level. This raises questions about norms consolidated in a different arena and expected to be internalised by non-participants in the consolidation process.

Most African countries are regarded as contributing marginally to greenhouse gas emissions but adversely affected due to increased vulnerability and limited adaptive capacity (APF, 2007; Toulmin, 2009; World Bank, 2009a). Developed countries and a few other countries (BRICS)[95] previously classified as developing have been contributing relatively high levels of GHG emissions. The legitimacy crisis argument by Geoffman (1963) and Rochefort and Cobb (1994) states that when faced with conditions that incriminate and ascribe blame a social entity adopts measures to redeem this perceived dented image Therefore, as stated by Dodman and Satterthwaite (2009) cities in developed countries contributing 80% to green-house gas emissions are taking steps to redeem this dented image. One could say that cities which are not to blame have no image to redeem.

Metropolitan cities studied in Ghana (and possibly most Sub-Saharan African countries) have been adversely affected by climate

[95] BRICS is an acronym for Brazil, Russia, India, China and South Africa

change and therefore they are not to blame. Since marginal blame has been placed on developing countries, with regards to green-house gas emissions, there appears to be no impetus to save an image dented. Consequently metropolitan governments in developing countries may likely consider climate change policy ideas an imposition and reject it outright. On the other hand too, it has created an environment of dependency on industrialised nations to address and finance adaptation and mitigation strategies through finance mechanisms setup under the framework conventions on climate change.

8.2.2 The perception of climate change incompatible with public basic needs

Various phrases were ascribed to the concept of climate change by participants in this study, all slight variations from the original definition of climate change. Some of the references to climate change were 'flooding' droughts, and excessive heat. Climate change mitigation through greenhouse gas reduction initiatives to participants had a different meaning perceived not to resonate with the felt needs. Respondents questioned how carbon reduction initiatives provide basic needs such as clean water and jobs. Climate change was particularly associated with vulnerability to the adverse impacts of climate-related occurrences. Therefore participants were able to relate to climate-related events - flooding, drought and sea

level rise but not to the issues of global warming and greenhouse gas emissions.

This situation is partly as a result of the social setting of the urban areas in Ghana. The UNFCCC classifies Ghana one of the non-annex 1 countries, namely those ‘especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought' (UNFCCC). The concept of ‘climate change' has been scientifically constructed at the global level and led by the Intergovernmental Panel for Climate Change (IPCC) and attained political dimensions with the establishment of the Kyoto Protocol and the Framework Convention on Climate Change. Of interest is the interaction of an internationally generated concept with local settings. The local settings then tend to adopt, in addition to global definition, contextually generated meanings.

A general narrative provided by local government participants in this study was the perception that climate change as a concept defined at international levels is perceived as ‘fanciful'. Fanciful here means being over imaginative and out of touch with reality (*Oxford dictionary of English, 3rd ed*, 2010). Concepts such as ‘flooding' and ‘drought', the impacts of extreme climate-related events were easy for participants to connect with. This creates the search for further exploration of the different meanings some participants place on

‘climate change' and impacts of climate-related disasters. The two concepts of for instance ‘flooding' , ‘droughts' and ‘climate change' are socially constructed as separate realities and knowledge.

A key characteristic of reality as argued by Berger and Luckmann (1991) is that generally, people are engaged in multiple realities, socially constructed by participants in a society. Among these multiple realities exists a reality of everyday life termed as ‘reality par excellence’ which tends to predominate and occupy a place of privilege in the individuals conception due to the fact that ‘tension of consciousness is highest in everyday life' (Berger and Luckmann, 1991: 35-36). The concept of social construction argues against a single universal reality, for a single phenomenon there would be objective as well as subjective reality. Going by the interpretation of social reality as multiple, objective and subjective, it is impossible to have an existing single knowledge or interpretation of a phenomenon.

Climate change as a phenomenon has a universally ascribed meaning as per the UNFCCC and IPCC reports. However there appeared to be an observation among local government participants in this research that though weather patterns could possibly be forecast with the right data and equipment, power over the intensity and pattern of weather events tends to be attributed to ‘powers' beyond the control of man. However the impacts we have authority

and responsibility for(Hulme, 2009: 144). The GSGDA policy framework (NDPC, 2010) recognises that ‘ In Ghana disaster occurrences especially in the urban cities and towns have been brought on largely by the lack of adherence to building code regulations and the weak enforcement of planning laws by the relevant institutions'. In a sense the control of weather events exists within the realm of the transcendental, beyond the reach and manipulation of mortal men. Though this may sound as a cliché, the religious and cultural dimensions present another perspective to an understanding of climate change. Weather events and future climatic patterns are not just beyond the control of man and within that of the divine or spiritual. The religious or moral/ethical dimension presents an argument of human’s stewardship of the resources of the planet as a basis of caring for the environment and which appeals to the ideals of environmental ethics (Khalid, 2002; Pratt *et al.*, 2000).

Stewards by definition are accountable to a higher authority who hands over responsibility of taking care of property to another. Implicitly the steward has no or has limited authority over the property as compared to the owner. The ultimate ownership and control of the earth lies with another. These views present another element to the moral and religious grounds for addressing climate change and relevant for understanding the formation of social movements. Within this study context the phenomenon of climate and its changes is supposedly beyond the reach of the individual.

Consequently there is limited or no internally generated motivation for the emergence of a collective action for this purpose when people cannot relate to the concept. The perceptions (misrepresentations) of climate presents a complex arena for policy making and highlight the role of socially constructed knowledge in driving adoption of climate change policies and the content of the policy outputs. From the above discussion there appears to be a manifestation, in the case of metropolitan governments in Ghana, of a perceived conflict between climate change policies and development. Though this perception may exist, measures need to be taken to ensure that there is a deeper understanding of the climate change-development nexus not as antagonistic but complementing the development of urban areas(Simon, 2011; World Bank, 2008). Also overcoming the perceived conflicts between meeting immediate development needs and planning with the changing climate in mind would require extensive and sustained communication on the relevance of such practices for development. Without this mainstreaming climate change in development plans would be a one-off project and unsustainable.

8.2.3 Complexity and compatibility of climate change policy

The compatibility of ‘climate change' ideas with public development needs and existing development paradigms was influential in determining the extent to which climate resilient development considerations are included in metropolitan development plans

prepared for the 2010-2013 medium term. The scientific nature of the subject and the challenges of integrating it in development create the perception of complexity associated with climate change. Rogers (2003) spells out five perceived attributes of the innovations that determine whether the innovation will be adopted as well as the rate of adoption. These perceived attributes are the complexity, compatibility, triability of the innovation. Admittedly, the way these perceived attributes would influence the adoption of a novel innovation may vary depending on the innovative idea. When applied to climate resilient development planning as a policy innovation, this research identified that two of the perceived attributes defining the response of local governments to climate change were the complexity and compatibility to public needs and existing development paradigms.

Climate change as a subject was perceived by local government participants as a complex scientific subject the integration of which in policy decision making would require great expertise. All three metropolitan government units admitted the required climate change knowledge is complex to grasp and inadequate at the local level. Understandably, the scientific aspect of climate change presents conceptual challenges for policy makers unfamiliar with climate science and associated scientific discourse. Climate change debate has been one of the issues that have supported the argument on the interplay of normative and positive claims and the amalgamation of

policy, politics with science. It seems the interplay of science and policy has not been exclusive to climate change, but has been manifesting in environmental issues deforestation, pollution and ozone depletion (Young, 2002). The interplay of two contrasting claims, normative claims in political economy and positivists claims in scientific discourse, has prompted a perception of complexity in understanding the subject. The complexity of the subject is further entrenched particularly when there are constraints in knowledge demand-supply/ brokerage process.

There is evidently a deficit in the interface of translating scientific climate knowledge for public policy. Various suppliers of climate change knowledge (Fig 8.1) have also performed the role of knowledge brokers, generating knowledge as well translating the knowledge for policy makers. The perception of complexity is being boosted by the scientific origin and nature of the subject, and underlying conceptual gaps in a climate change knowledge market for translating a scientific concept and adding value for policy making (characterised by degrees of uncertainty). Supply of climate change information for urban areas in Ghana appears to be increasing and participants state that policy makers' demand for information with regards to greenhouse gas emission reduction and increasing resilience to current / future impacts is considered limited. The complexity policy makers attributed to the subject matter is underlying evidence of a climate change knowledge market

characterised by imperfections in demand, supply and the translation interface.

Climate change has been translated from a scientific dimension to a development concern. This has caught the attention and interest of governments worldwide including that of Ghana. Admittedly the idea has been translated into a collective societal need which requires government intervention. Desire and interest in climate change knowledge without the associated ‘purchasing power' will constrain the move from interest to a dimension of demand. The absence of scaled-down climate models and vulnerability assessments tend to limit local action on reducing greenhouse gas emissions and increasing resilience. Coupled with the demand and supply side constraints have been the deficiency in the translation interface. The interface between demand and supply to translate scientific climate knowledge and add value for the potential policy makers ‘market' has been missing thereby entrenching the perception of complexity. On the other hand, some sources of suppliers of the knowledge also argue that the low demand for urban spatial dimension of climate change has influenced the limited supply.

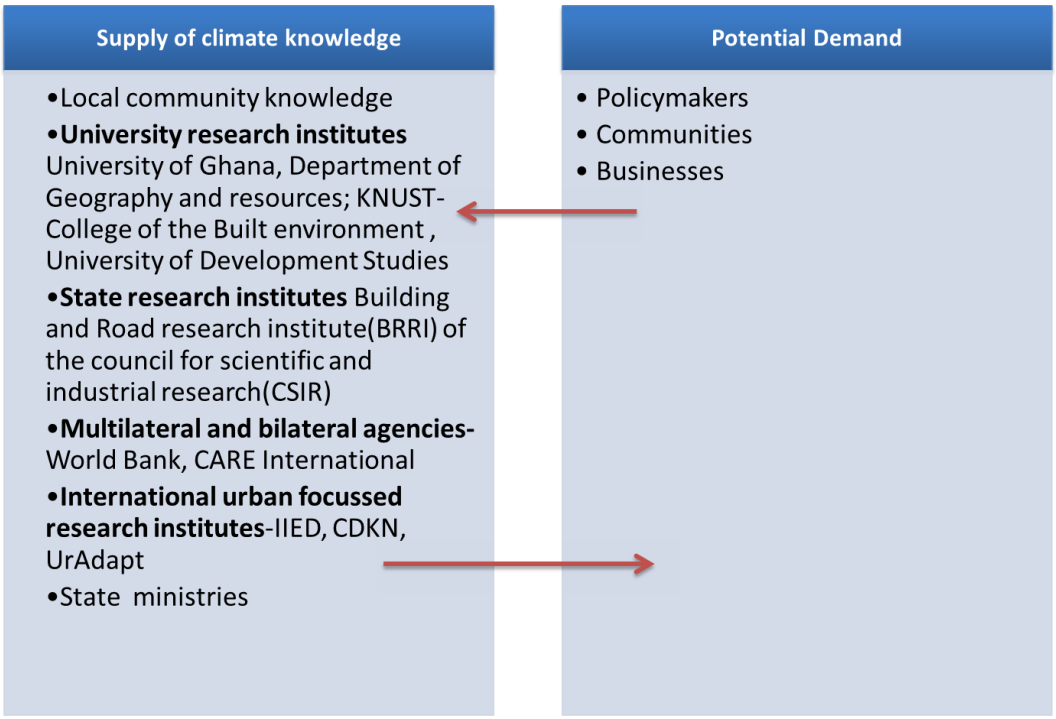


Figure 8.1 Knowledge market for climate change in Ghana

Source: Collated from fieldwork data

The perception of complexity associated with climate change policy making is a factor that has contributed in shaping the extent to which climate change policy initiatives are integrated in metropolitan development plans. Complexity in this context was driven by the scientific origin of the subject, and imperfections in a knowledge market characterised by limited supply, low demand and a deficient interface of policymaking and research. Policy makers derive this perception as a result of the cognitive limitations placed by inadequate information, accessibility constraints and the way climate change knowledge is packaged. The perceived complexity could also

be a reflection of cognitive inflexibility, the inability to toggle between the normative of policy making and the positive aspects of including a scientific dimension built on models and assessments in policy making. More than ever climate change presents a challenge for policy makers to go beyond the boundaries of political science, planning and economics to engage more with climate models and vulnerability assessments. This is not to indicate that policy makers do not utilise meteorological data and weather forecasts in preparing profiles of the metropolitan plans. Most of the data used are derived from past data models. Future climate projections over extended periods are not mentioned in the development plans as shaping policy responses.

8.3 Dealing with the organisational tensions of adopting climate change policies

In geographical and structural terms the metropolitan governments in this study are part of the national and global network of urban areas and therefore a constituent of different universes. Similarly local governments could also be classified as a universal entity characterised by different contexts and actor interests thereby creating various tension points within the government. Therefore, when a change element is introduced, the various tensile points tend to be mediated by local governments.

8.3.1 Associated tensions of multiple actors and interests in governing cities

Chapter 2 established that the global nature of climate change concerns and the international origin of the impetus for building an institutional architecture from global, through national to sub-national level, in order to integrate climate resilient concerns in development plans. Policy attempts made by local government are initiatives in response to globalised concerns. The globalised nature of the climate change problem does not imply that the implications of adverse weather conditions on local urban development have not been noted. By implication no country is immune to climate change and therefore collective action for a global concern is expedient. On the other hand as shown in Chapter Six there are localised concerns in Accra, Kumasi and Tamale metropolitan areas which may not have global implications but are relevant for the urban setting in which they occur. Considering that the contextual needs are socially constructed as immediate there is the tendency to consider immediate needs before addressing future development concerns. Therefore local governments make efforts to mediate the global, national as well as local demands and priorities which are often contradictory.

The local government context is also a constituent of national government structures and simultaneously an entity with a limited degree of autonomy. As was evidenced in the empirical data of the

three metropolitan areas, national priorities and local government demands may be in conflict and create tensions. These tensions are mediated by local government which consider that both dimensions have utility and one context need not supersede the other. Embracing the local priorities and global/national demands would therefore be a favourable response to this tension. It is also worth noting that the universal-local context could also be translated at the local government level with various contexts and interests. Hence a resultant manifestation would be various tension points within local government actors and with other supra institutions. Consequently the tension between local and global contexts and policy demands has contributed to a manifestation of limited attention by local governments to climate change development planning. Here lies the dichotomy that the global and contextual exist within a complex relation of collectivism and individualism, on different structural and temporal scales. Different tensions exist as a result of the complex nature of the arena for decision making which is characterised by different actors and interests at various scales of governance. Mediating these tensions therefore prevents drastic strategies to reduce greenhouse gases and increase resilience to the adverse climatic conditions and impacts. Hence the current measures by government, though perceived as limited are manifestations of these existing conflicts and mediating efforts by local government.

8.3.2 Plural power dimensions

Power structures in political organisations are constantly being reorganised and the role of policy ideas in this transformation has been highlighted. Underlying the institutions and interests shaping climate change responses is an explanatory framework to suggest that when exogenously originated novel policy initiatives enter a system there is a potential reorganisation of power structure (Colomer, 2001: 239). New power poles are created whereas possibilities exist for entrenching some existing power dimensions. This has generated a sense of power disequilibrium within and among development oriented political organisations accompanied by redistribution of power and reallocation of resources.

The introduction of a new policy idea in development planning in Ghana draws attention to the numerous actor interests and powers. It also questions assumptions on institutional equilibrium (North, 1990) and exposes how metropolitan governments dealt with the state of disequilibrium brought about by directives to integrate climate change policies in development plans. Consistent with Colomer (2001), when the concept of mainstreaming climate change mitigation and adaptation was introduced into Ghana national and local government decision making processes, there was obvious system disequilibrium, mostly since a degree of value has been ascribed to the policy idea. With the introduction of the new idea come requirements for organisational and institutional change

creating that disequilibrium experienced by public policy makers at the national and local government scale. Substantial evidence in this study shows that there are disruptions to the existing models of governance and institutional contexts and public and political interests are challenged. It has also been established that the novel policy idea entrenches certain political and public policy positions while serving the interest of certain actors and creating new interest groups, challenging the existing status quo of different policy organisations (Colomer, 2001).

As with any novel policy ideas, the associated drive for change encounters organisational and personal barriers (de Jager, 2001) which act to filter the policy initiative. The outcome of the filtration process is a situation whereby the policy is absorbed entirely or selective aspects of the policy are adopted. The existing institutions act as a filter to the exogenously initiated ideas till these are transformed to permit full diffusion of the idea, climate change policy initiatives. Confronted with the impetus for organisational change and disequilibrium in a social system attempts could therefore be an attempt to bring the system to a state of equilibrium.

It appears that on introducing climate change as a policy idea into development planning in Ghana, a number of organisations such as the Environment Protection Agency have assumed added responsibility for addressing global environmental-development

concerns. Respondents in this study were prompt to associate climate change with the Environmental Protection Agency and requested that enquiries regarding the subject be directed to the Environmental Protection Agency (EPA). With this additional responsibility, there is a perceived sense of acquired knowledge and power in allocating resources for public organisations engaged in climate change research and policy making. The previous model for development planning prescribed by the National Development Planning Commission (NDPC) has an associated formal structure of formulation and implementation. Climate change policy making creates additional structures to the development planning system in Ghana, both at national and metropolitan level.

8.3.3 Dealing with tensions between structural requirements and agency interests

Integrating climate change policy ideas in urban development planning has exposed the contradictory contexts that metropolitan governments in Ghana are faced with. The imposition of novel policy ideas for a new approach to planning cities in Ghana creates tensions between opposing contexts, interests and struggle of ideas. However dialectical reasoning would explain that though the opposing ideas and contexts present they are also interconnected, part of the motions associated with change. This reasserts that a salient feature of social systems is that they are in perpetual motion, not static and transforming into complex systems (Parsons, 1951;

Smith, 1976). In Dialectics of Nature Engels and Dutt (1940: 32) draw from law of mechanics of objects in space and argues that attraction and repulsion are essential for motion:

> 'All motion consists in the interplay of attraction and repulsion. Motion, however, is only possible when each individual attraction is compensated by a corresponding repulsion somewhere else' (Engels and Dutt, 1940:32).

The opposing situations, though contrasting, are at the same instance interconnected, are faced by metropolitan governments whilst integrating climate change ideas in development planning. The study of Accra, Kumasi and Tamale suggested that caught in the 'pull' and 'push' of opposites required systems of mediation.

Consistent with the assertion by Bachrach and Morton (1962) on two faces of power, this research has demonstrated that under certain circumstances political actors limit their powers, particularly when there is an expected adverse reaction from another group of actors, particularly the populace. In this study it was reflected that planning authorities in the metropolitan areas studied have the structural power to pursue the policy framework prescribed by the NDPC. However this would be a simplistic causal analysis of the drivers of climate change policy action particularly when actors exist and interact in a social system with structural conditions. Attributing inaction or limited policy action on climate change entirely to

agency presumes that actors wield immense power over the state of policy attention. In summary, institutions can influence action as far as actors permit despite the actors who instituted these structures (Giddens, 1984; Sewell, 1992).

More importantly with globalisation and the transformation in scales of urban governance, the structures and actors vary in time and scale and therefore actors in institutionalising an idea would at times differ from the agents who are to adhere by these institutions. To an extent there is agreement with Giddens (1979) argument of integrating structure and agency in conceptualising society and action. The case of Ghana's metropolitan government confirms that they are engaged in relations with complex actors, institutions and interests across different geographical and time scales in the formation of a policy. The resultant tensions between structure and agency are then manifested. The assumption is that the limited policy attention to climate change by metropolitan governments is partly attributed to a conscious, intentional effort by actors to constrain action on climate change. This raises complex questions since there could be a disjuncture between action and intention. The act or doing could be dissociated from the intended and the causal link cannot entirely be established action and intended outcome.

Giddens (1979) uses illustrations to explain this dichotomy. One of particular interest is that of the light bulb. When the light is turned

on in a dark room the illumination of the space causes the exposure of a burglar who is then apprehended by the police. The intention of the person who switches on the light is not to catch the thief lurking in the dark but only to illuminate the room. Could it be said therefore that the person who switched the lights on caused the thief to be caught? The act, intended outcome and actual or manifested outcome may not always be related. Therefore interviewed policy makers stating that climate change is minimally reflected in the medium term plans for the reason that it is not a priority of citizen and politicians is inadequate to explain the current state of policy response to climate change in urban areas.

Furthermore, attributing the current state of limited climate change attention by metropolitan governments in Ghana to human agency assumes that the actors involved in the formulation of medium term plans have adequate information and engagement with the novel idea to make an informed decision on adopting climate concerns in policies or not. In a situation where the information on climate change appears to be concentrated in scientific circles and a few policy arenas at the national level, local actors tend to have limited access or exposure to knowledge on climate change. More importantly, this confirms that actors tend to be constrained or enabled by their position in a social system as well as their access to and ownership of the means of production (Cornforth, 1962).

8.4 Conclusion: Mediating change and associated tensions in different relations

This research has demonstrated that despite state substantial policy intent to address global, national climate concerns by Government of Ghana through galvanising collective local government action, translating and localising a global concern has proven to be a major challenge for the three metropolitan assemblies studied. As mentioned in the previous chapter metropolitan governments have earmarked certain projects as under the thematic area of climate change in the development plans for 2010-2013 following directives from NDPC. In addition fiscal budget for 2012[96] also make financial provision for activities classified as measures to address climate change and environmental concerns.

However there is enough evidence to suggest that the introduction of the concept to sub-national government authorities was as a consequence of state initiatives to mainstream into ministries, departments and agencies, and for local governments and regional coordinating councils. This creates a complex situation for analysing action since there is not one but a complexity of institutions and actors at different scales and interests. Therefore limited policy on climate change at the level of metropolitan assemblies cannot be

[96] The only year within the GSGDA period that was made available for this research.

entirely attributed to human agency or institutional constraints and weaknesses.

A major theme running through the preceding discussions in this thesis has been the contradictory forces at play and the tensions emerging in changing from ‘old’ ways to the new ways of planning cities. The transition process from a previous institutional setup and move towards a new order creates tensions since the two consist of inherently opposing characteristics. However a temporal lapse in transition period, between the old and the new, creates an environment characterized by what seems like an interplay and sense of co-existing between the opposing forces. This results in dialectical tensions as a result of the yearning for the old whilst faced by uncertainty and anticipated appeal of the new order. The tension underlies local and national governments responses to climate change in urban areas. Therefore the responses are attempts to mediate the tensions whilst still in transition towards significant urban institutional change in Ghana. The introduction of a new policy idea encounters or creates relational tensions resulting in barriers for its adoption, after it has diffused and being introduced to development planning.

9 Policy Responses to Climate Change: Enablers and Constraints

9.1 Recapping the research aims

This research sought to explore and identify the factors that determine the diffusion, adoption and content of climate change policy in urban areas, using Ghana as a case study. In order to pursue this, the literature review distilled a set of concepts that have the potential to explain the diffusion of policy innovations, organisational change and the barriers to such change. These concepts are external pressure (Henisz *et al.*, 2005), quest for legitimacy (Westphal *et al.*, 1997), expected utility of the policy (Cook, 2010; Krause and Méndez, 2005) and political socialisation (Gilardi *et al.*, 2009b; Weyland, 2005). Underlying these concepts is the question of structure and agency, and how the adoption of novel policies is enabled by structures and agency. These concepts were utilised to interrogate change policy data and information from international, national and metropolitan areas in Ghana. This chapter revisits these concepts and underlying theory, data collection and fieldwork experiences to provide a synthesis of the key findings, conclusions and reflections for future research. In particular it emphasises that though planning ideas may travel (Roy, 2010; Ward, 2000) and land (Sorensen, 2010), structure and agents constrain action on climate change policies.

9.2 Emergence, diffusion and adoption of Climate change policies

This research reiterates that the emergence and social influence of ideas are rooted in material conditions that are the means of production and the relations of production. This study demonstrates that though material conditions have an influence on the emergence of new policy ideas, and their diffusion and adoption, the perceptions of climate change as a reality cannot be ignored. In essence both are a necessary precondition for the emergence of ideas and social influence they attain. The central government-metropolitan government relation in Ghana reemphasised structural relations as a key component for the emergence of climate change policies as a development paradigm at sub-national level in Ghana.

The policy response by metropolitan governments studied demonstrated that between consensus and the counter-hegemonic exists another dimension, that could be described as ritualism in Robert Merton's Anomie Theory (Merton, 1938). Integrating green growth measures and adaptation policies in development plans is seen by metropolitan officials as global and national initiatives for responding to the threat of climate change. Though the policy ideas may be dominant globally, contextual restrictions on accessible material conditions and social relations, as well as constraints on conceptualising climate change as a localised reality, limit action on climate change. Essentially this research has demonstrated in part

that there is an interaction of structures and agency interests in shaping the adoption of climate change policies and the extent to which these novel policy ideas are integrated in development plans for urban areas in Ghana.

The consciousness and material conditions operate on different ontological dimensions but interact to shape climate change policy integration. Femia's (1981) model describes the interaction of consciousness and material base as more or less equal. This brings up the question of developing an effective system of measuring consciousness and material conditions to determine a resultant scale of influence. Despite imposition of guidelines and thematic areas on climate change from national development to sub-national governments, the perceived reality and material conditions at the local level have a large impact on the adoption and the extent to which development plans would reflect a climate change component. Therefore coercive mechanisms are insufficient tools to ensure climate concerns are reflected in urban development plans. Actors' conceptualising of climate change as reality, and the accompanying resources, shape the extent of adoption in development plans. Climate change policies are yet to be established as a conscious day-to-day activity in management of the city by metropolitan government officials. Similarly the list of public development priorities seems to suggest that reducing greenhouse gas emissions has not been considered a collective public need. Reducing the

impacts of adverse weather conditions on development is a concern captured due to the perceived reality at the community and local levels. Therefore, to the public and metropolitan government officials, climate change adaptation policies are ideal.

As interviews with metropolitan officials and policy documents indicated, ‘green growth’ ideas are yet to appear in public agenda discourse, a critical consideration for shaping public policy agenda. The green economy and/or reducing greenhouse gas emissions have been perceived to exist in another spatial and temporal reality, thereby placing it outside the everyday reality of individuals and societies in this study. On the other hand adaptation to flooding and drought is related to everyday reality of living, survival and self-preservation, particularly when it affects routinely daily activities. In addition, disaster risk reduction is a policy area metropolitan governments were conversant with. The more distant the idea in the everyday reality, in spatial and temporal terms, the greater is the difficulty in identifying with it as a socially constructed reality. In essence, in addition to individual perception of reality, there has to be a collective perception of its reality. Individual perceptions may count in assigning value to preserving the earth and mankind; however collective consciousness of these values is essential. However this value is sparsely denoted and concentrated in communities directly affected by the floods and droughts.

In addition the limited integration in development plans appears to be a reflection of spatial and temporal limitations on mental perceptions of climate change and elevating it to the place not only of individual reality but constructed as a social reality. For the study areas the flooding and drought occurrences were seasonal and not frequent occurrences. This creates conscious alienation from the subject of climate-related adverse events, till there was an incident of flooding or drought. Moreover, futuristic climate models place the concept of climate change in another dimension of reality beyond the present. The demand on the individual and social reality by its immediate surroundings sees the pushing of climate change with its degrees of uncertainty to the outer boundaries of individual socially constructed reality. The perception operates on a different ontological dimension and the externalisation of the values requires an environment which promotes the expression of these mental perceptions. The material conditions and relations required to achieve these are essential for the realisation of these values. This study has shown that though there are regulations for adopting climate change policies, limited access to the material conditions and inadequate actor interests constrain action towards attaining climate resilient development and green growth economy for urban areas in Ghana.

9.3 Implications for planning and policy

This research contributes to change debates in urban policy and planning by drawing on political science and sociology with perspectives on innovation, diffusion and organisational change. It is an attempt to push planning beyond its disciplinary confines, to enrich and be enriched with perspectives from other intellectual fields. Investigating the climate change policy decision making processes in Sub-Saharan African urban areas provides an opportunity for urban planning discourse to engage with other disciplines. It responds to Myers (2011) argument for alternative visions of urban theory and practice by contributing to an understanding of the policy decision making process with regards to climate change from Sub-Saharan African cities. Moreover it also speaks to institutional change theories, particularly focussing on the unit subject to organisational change. Very little is known about methodological issues of researching climate change policy in sub-Saharan Africa, a gap this study has contributed to addressing.

The extension of global institutional architecture for addressing climate change to sub- national urban governments reiterates the need for urban planning theories for African cities beyond spatial planning and design. The political dimensions of urban planning are identified in Chapters Five, Six and Seven as critical to localising global development and environmental concerns at the sub-national level. Therefore in drawing on coercion, normative and political

socialisation concepts from political science and social psychology, the study re-echoes the socio-political nature of planning for cities in Sub-Saharan Africa, particularly in an era characterised by influences of global institutions and agendas. Bearing in mind that the politics of planning for cities influence the spatial allocation of infrastructure and resources, consequently urban planning as a discipline investigating climate change and cities needs to take the political dimensions into consideration.

Although research has been conducted on cities and climate change in developing countries an often-neglected aspect are the fieldwork encounters. Chapter Four highlights the encounters of investigating climate and urban policy making in a developing country. Critical realism as a research approach was also tested in this research which involved considerations beyond the empirical evidence to uncover the structures and powers giving these events meaning. In Chapter 4 the pragmatic aspect of this research was mentioned and it argued that in addition to research producing knowledge, the findings of research needs to be useful for policy. A key question pragmatists would ask in this context is ‘What is the essence of knowledge about the social dimensions of climate change if it cannot be put in practice?’ Pragmatism’s underlying tenets imply knowledge transcends the borders of having only intrinsic value and is ascribed an essence for practicality, as such granted instrumental value. Therefore investigating policy recommendations are provided to

assist policy makers and donor partners in shaping subsequent strategies for addressing climate change impacts in Ghana.

This research has established that institutionalising change for climate change in selected case study areas are faced with structural constraints and grounds where novel ideas battle actors' interests. A key theme running through interactions with policy makers and development professionals was that perceptions of novel policy ideas influence the extent to which external impetus for change would be institutionalised. Therefore in addition to setting up organisational architecture for integrating climate change in development planning, measures to indoctrinate a normative change are also being advocated. In essence, addressing climate change would have to translate from a one-off organisational policy response to organisational and individual norm. Creating public awareness of the impacts of climate change is mentioned in the Ghanaian National Climate Change Policy as crucial for changing behaviour. Internalising takes it a step further in ensuring that integrating climate change concern in development planning is normal business for metropolitan governments. Therefore a communication and learning strategy for urban development professionals and policy makers needs to include a socialisation component with role models engaged in climate change government networks across Africa. Secondly from this study it is recommended that metropolitan governments in consultation with other

stakeholders take initiatives in devising comprehensive long, medium and short-term local plans.

The absence of scaled-down climate models and vulnerability assessments for metropolitan areas was mentioned by metropolitan government technocrats and scientists as a crucial drawback in preparing plans for cities in Ghana. National scale climate models and sector vulnerability assessments have been prepared and are presented in the National Communications and assessment reports to the United Nations Framework Convention on Climate Change (UNFCCC) in 2001, 2008 and 2011. The climate models depict past and future projections, generalised for climatic and vegetative zones which misses spatial representations of vulnerability. This study recommends investments in localised greenhouse gas inventories and vulnerability assessments which would entail adequately funding public institutions and commissioning private research. This study has reinforced the normative dimensions and socially constructed idea of 'climate change'. A policy recommendation for planning public awareness programmes would be to consider some concepts from product marketing. Integrating climate change concerns in development planning needs to be regarded as a 'new product' or 'new brand'. In addition to NDPC guidelines and MoFEP directives, a marketing approach is recommended to increase the 'demand' for climate change initiatives from public organisations and increasing private sector involvement.

Prepared prior to climate change, development measures to ameliorate the impacts of weather patterns on urban infrastructure and livelihoods are captured in Ghana National Building Regulations L.I 1630 1996, the Town and Country Planning Act 1958 and National Disaster Management Organisation Act 517 1996 .Urban policy makers and development professional as well as general public to a large extent are familiar with these regulations on planning for adverse impacts of weather events. This study recommends that the familiar regulations be reviewed as a starting point for integrating climate concerns in urban development.

9.4 Methodological complexities of researching climate change policymaking

The research drew attention to the methodological complexities of researching climate change policy making for urban areas in Ghana. Conventional methods need to be adapted to suit the context. Since change is historical in nature and experienced differently in a social setting, obtaining multiple histories was considered an expedient approach in investigating the field. The case study design approach was adopted with semi-structured interviews and documentary evidence as data collection tools. Potential participants were recruited for the study in line with research ethical considerations. The research took appropriate steps to prevent harm to participants and ensure that participation was voluntary. The consent of participants was sought. In spite of these measures, the context and

subject matter under study presented challenges for conventional methods of recruiting participants and data collection tools.

Research ethics recommend there was no expected direct physical harm to participants but intended benefits to the decision making process. At the onset of the study the responsibility of defining harm or benefits to the research participants rested with the researcher. However it was observed that the participants construct subjective meanings of risk and benefits of participating in the study. Construction of the subjective definitions becomes pronounced when the research subject interacts with already existing powers and structures existing in the field.

Bureaucracy and restricted access to information for the public is enshrined in the Civil Service Act of Ghana and other organisations interviewed. Some informants considered risks associated with divulging information for this research. The research assumed no particular physical harm but informants defined potential risks to their careers. Despite the potential risks, individual benefits were also expected from participating in this study. In line with social exchange, benefits of participating in this study assumed non-monetary dimensions. It was made clear to participants that participation was voluntary and no monetary rewards were offered to informants. However, for some informants the benefits were perceived in social terms. The researcher was perceived as a means

of transmitting information to otherwise inaccessible units or departments. The interview sessions were at certain times opportunities for informants to establish professional or social networks. Therefore the interview sessions assumed different dimensions for both researcher and informants. The dichotomy in methods was evident during the recruitment methods of participants, through the formal organisational hierarchy and informal structures, particularly social networks.

9.5 Limitations and areas for future research

Methodological resources and logistical constraints limited the extent to which this study could be broadened beyond the three metropolitan areas in Ghana. The limited time period for carrying out the research required that some issues needed further research. The study was conducted in three metropolitan areas: Accra, Kumasi and Tamale metropolitan areas. The study could be applied in other metropolitan, municipal and district areas in Ghana. The limited number of case studies findings from the study cannot be generalised beyond the study areas. On the other hand, the theoretical framework, methodological tools and findings could be replicated for researching other urban areas in Ghana and possibly Sub-Saharan Africa in general. The conceptual framework established that public pressure, or the absence of it, has the potential to influence the adoption of climate change policies. However the extent to which private corporations, both local and foreign, have engaged with

climate change in Ghana was not explored. This is an aspect the research intends to carry on further, within the context of Ghana.

The development planning time frame in Ghana encompasses a period of formulation, implementation and monitoring and evaluation. The research was conducted during the phase after development plans had been formulated, and in early stages of implementing the medium term development plans for Accra, Kumasi and Tamale. The research time frame did not permit further investigation of the extent to which programmes under climate change and environmental management mentioned in the medium term plans were implemented. Therefore the strategies stated in the metropolitan plans are assumed to reflect policy intent to act on climate change. Further studies are recommended to ascertain the extent to which these measures were subsequently implemented.

The study observed that scaled-down climate vulnerability assessments for Accra, Kumasi and Tamale are unavailable. This limited obtaining a comprehensive overview of the vulnerability context of the study areas. As a result the future climate projections for Accra, Kumasi and Tamale were inferred from generalised national and climate models. The planning for climate change would benefit from localised vulnerability assessments and localised climate models. The three metropolitan areas represent only two percent of the total number of urban areas in Ghana. There would be

the need to further investigate how other smaller urban areas and towns with lesser population sizes responded to the directives to include a climate change component in the development plans. This would further enrich the study and provide a wider context for comparison across Ghana. In addition it would likely provide insight into how smaller towns, usually not actively engaged in global network of cities responds to global environmental and development pressures.

Another area recommended for further research is related to the implementation of climate change initiatives in the Ghana National Urban Policy in the pilot city, Accra. This is envisaged to bring to fore the extent to which climate change concerns are being addressed in a policy that grants specific measures to a deemed global concern. The medium term planning agenda, Ghana Shared Growth and Development Agenda (GSGDA I), ends in 2013 and consultations are in process for the next medium term scheme 2014-2017. There is need to evaluate the GSGDA to ascertain the extent to which projects on climate change mentioned in the development plans of Accra, Kumasi and Tamale were implemented.

This study also established that although the National Association of Local Governments in Ghana holds associate membership with ICLEI, metropolitan governments had limited engagement with climate change. Bearing in mind that engaging in political

socialisation has the propensity to influence institutional change, this research also recommends further studies on activities in these networks and how they influence behaviour of member cities. In conclusion the further studies would enrich knowledge on planning for climate change in African cities and provide additional insight on the material, relational barriers. In conclusion, the threat of a changing climate to the urban environment, economy and institutions demands national and metropolitan governments, as well as development actors, take additional measures in development plans, to address current and projected impacts for urban areas in Ghana, and sub-Saharan Africa.

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11 Appendices

Appendix 1

Policy objectives and initiatives of the Ghana National Urban Policy

Policy Objective	Policy Initiative
Overall objective: *Ensure sustainable development of urban centres*	Improving and enforcing legislations and standards on urban development and management Improving land development and land use control mechanisms Conducting physical development in compliance with the appropriate planning, environmental and zoning regulations Promoting integrated urban development with respect to the three pillars of sustainable development – society, economy and the environment, now and in the future
1. Facilitate relatively balanced re-distribution of urban population	• Creating new growth points as counter-magnets to fast growing cities such as Accra and Kumasi • Promoting accelerated growth of small and medium-sized towns (including district and regional capitals) • Ensuring that existing and newly created centres adhere to best environmental and land management practices
2. Promote Spatially Integrated Hierarchy of Urban Centres	• Establishing a hierarchy of urban centres for defined purposes • Minimising the radius of travel between service centres of all sizes and their hinterlands • Establishing rural service centres to promote the location and development of agro-based industries to transform the rural economy
3. Reduce Growth and Sprawl of the Primate Cities	• Improving and enforcing legislations and standards on urban development and management • Improving land development, land use control mechanisms and reviewing planning standards • Developing new and reviewing existing structure plans for settlements as mechanism for guiding the development of settlements. • Ensuring full implementation of LAP to facilitate efficient land delivery for urban development. • Determining optimum sizes and form of different hierarchies of urban centres to ensure efficiency in resource utilisation and backing requirements with stronger legislations. • Promoting new techniques like remote sensing

	(aerial photographs, satellite imageries, etc) and GIS to monitor illegal development • Encouraging and promoting high density or vertical development • Encouraging public education and enforcement of development controls
4. Ensure Efficient Urban Services Delivery and Infrastructure	• Assessing infrastructure needs of urban centres and mobilising resources to support infrastructural development • Improving delivery and management urban services and infrastructure (including education, health, water, sanitation, energy) • Finding new ways of mobilising finance for investment in urban services and infrastructure • Guiding and managing investments in all relevant transport modes for intra and inter-city transport development through the identification of potential investors, NGOs and other stakeholders. • Promoting efficient and effective public transport • Developing and managing infrastructure systems with the appropriate technology needed to provide basic hygienic conditions in towns and cities • Providing adequate equipment and operational funds to support waste management activities • Strengthening capacity and institutional coordination of utility companies and other services and infrastructure providers
5. Improve Access to Adequate and Quality Housing	• Government providing the congenial environment for private sector delivery of affordable housing, equitably distributed across the hierarchy of settlements and responsive to the complexity of the existing housing market. • Implementing the policies on promotion of indigenous building materials and appropriate construction technologies. • Promoting the provision of social or low-income rental housing through public and public-private partnership arrangements • Upgrading or redeveloping slums and deprived housing stock especially in urban areas selected as growth poles in the proposed hierarchy of settlements.
6. Promote Urban Safety and Security	• Incorporating specific security and disaster prevention and management mechanisms in urban planning and management • Improving social and economic development of neighbourhoods as measures toward promoting urban security • Intensify education on individual and community safety and security by NADMO, police service and other security agencies. • Developing and implementing systematic

	programmes to address streetism • Improving numbering of streets and houses to enhance security and safety in communities • Enforcing standards and regulations on provision of fire hydrants in all public and private buildings • Strengthening emergency recovery programmes or measures to ensure adequate early/immediate and short term recovery during emergencies and disasters.
7. Promote urban economic development	• Improving urban service and infrastructure • Targeting infrastructural investments in growth centres as choice destination for investments and other economic activities. • Enhancing the competitiveness of Ghanaian cities in regional and international context • Promoting local economic development (LED) including support for SMEs, tourism and place marketing, and urban renewal • Ensuring urban planning incorporates the informal economy in both physical and socio-economic sense.
8. Strengthen urban governance	• Improving and enforcing legislations and standards • MMDAs incorporating all relevant state and non-state agencies and institutions in the governance of cities and towns. • Reviewing, strengthening and resourcing the decentralisation structures (e.g. unit committees) to make them effective in local governance. • Enforcing standards and regulations for waste water discharges, emissions and disposal of solid waste • Generating environmental awareness by increasing mass media public education programmes on sanitation in schools and public places in all communities • Protecting open spaces, green belts and other ecological sensitive area from physical development and urban encroachment • Developing and implementing systematic programme of fire and flood control measures in urban communities • Promoting forward planning of urban fringes through active involvement of all key stakeholders. • Establishing special courts to handle issues pertaining to urban development
9. Promote climate change adaptation and mitigation mechanisms	• Intensifying public information and awareness campaigns on energy conservation • Encouraging progressive reduction of hazardous substances by industry through improved technology and efficiency • Promoting settlement structure plans designed to achieve a high level of amenity as well as the

	prevention of noise, smoke, effluent, refuse and visual pollution • Promoting and strengthening cooperation of adjoining MMDAs in collaboration with traditional authorities and other relevant stakeholders in management of water bodies and other natural resources • Avoiding policies which favour coastal zone development (especially low-lying areas) as well as other ecologically-sensitive areas • Imposing and enforcing more effective coastal zone and wetlands management regulations • Resourcing the capacities of agencies charged with promoting environmental standards, e.g. EPA, Geological Department, T&CPD, etc. • Generating public awareness on climate change and mitigation strategies through mass media educational campaigns.
10. Strengthen Research and Development in Urban and Regional Development	• Strengthening capacity of higher institutions of learning focusing on urban planning and development • Encouraging urban research that has immediate bearing on urban development problems and needs. • Promoting public-private partnerships in funding research on urban development

Appendix 2

Accra Metropolitan Assembly- Ranking of development issues

IDENTIFIED SECTOR DEVELOPMENT ISSUES	SCORE	RANK
Frequent power outages and low currents	**13**	1st
Poor health service delivery and inadequate health facilities	**13**	1st
Poor state of Metropolitan market	**12**	3rd
Poor delivery of potable water services	**12**	3rd
Poor metropolitan fishing industry	**11**	5th
Poor state of transportation infrastructure and services	**11**	5th
Poor access to credit	**11**	5th
Inadequate Basic School infrastructure and modern logistics	**11**	5th
Poor house and landed property addressing system	**10**	9th
Inadequate housing facilities	**10**	9th
Waste management and sanitation	**10**	9th
Undue advantage for multi-millionaire companies	**10**	9th
High start-up capital	**10**	9th
Increasing Urban Poverty and relatives high unemployment rate	**10**	9th
Poor drainage and pavements system	**9**	15th
Slum proliferation and uncontrolled development of settlements and structure	**9**	15th
Continuous loss of ornamental plants and trees	**8**	17th
Environmental degradation	**8**	17th
Inadequate skilled labour and poor entrepreneur development	**8**	17th
Inadequate office infrastructure and logistics	**8**	17th
Inadequate accommodation for staff	**8**	17th
Poor public awareness of AMA bye-laws and policies	**7**	22nd
Poor motivational packages for staff	**7**	22nd
Low level of internally generated funds	**7**	22nd
Outmoded agricultural practices	**6**	25th
Limited land for agricultural activities	**6**	25th
Destruction of Metropolitan marine lives of	**6**	25th

lagoons		
Poor standard of Basic School Education	**6**	25th
Inadequate inventory on temporary structures	**5**	29th

Appendix 3

Development Needs and Aspiration of Town Councils in Kumasi

No.	Town Councils	Development Needs and Aspirations
1	Aboabo	*Education:* • Adequate classrooms and furniture for public schools • Subsidised school uniforms and feeding programme for pupils in public schools • Adequate teaching and learning materials for public schools • Good academic performance of public schools pupils • Reversing the rate of school dropout *Heath:* • Well – equipped public health care facility • Good quality health care delivery • Reversing the high incidence of malaria *Water and Sanitation:* • Clean environmental sanitary condition • Expansion in the coverage of drains • Well – constructed and clean communal refuse site • Adequate communal refuse containers • Assisting household toilet facility construction • Adequate and well kempt public toilet facilities • Discouraging indiscriminate disposal of refuse • Well – maintained and free flow rivers and streams *Private Sector Development:* • Easy access to credit facilities • Productive and sustainable job for the youth • Properly located and refurbished community markets

		• A sizable well – constructed Lorry park *Local Governance:* • Well – functioning Town Council Office with requisite logistics and permanent technical personnel *Security:* • Lucrative motivation package for community watch – dog committee members • Well - resource police post • All streets bedeck with street lights
2	Adum	*Environment*: • Discouraging encroachment on public lands by unauthorised structures • Enforcing of bye – laws on noise pollution to discourage unnecessary noise from preachers and cassettes sellers *Education*: • Adequate classrooms and furniture for public schools • Well – kempt institutional WC toilet facilities for public schools • Regular access to potable water in public schools • Rehabilitation of dilapidated school blocks for public schools • Minimal destruction of teaching and learning by noise from the market • Transportation facilities for public schools • Flood lights in all public schools compound *Health:* • Sizable, well – constructed parking lot for the hospital *Water and Sanitation:* • Expanded, well – constructed and clean communal refuse site • More larger communal refuse containers • Regular and punctual empting of communal refuse containers • Discouraging indiscriminate disposal of refuse • Rehabilitation of public toilet facility around Railways and

		Soldier line • Assisting household toilet facility construction • Distilling choked drains • Treating sewer from WC toilet facilities before discharging • Regular access to potable water • Rehabilitation of old pipe lines to provide clean water • Proper and adequate working gear for sanitation workers • Expansion in the size of existing drains • Expansion in the coverage of drains • Covering the open drains *Private Sector Development:* • Easy access to credit facilities • Productive and sustainable employment for the youth *Supporting Service:* • Improvement in the operations of on – street parking to lessen traffic congestion • Well – constructed and equipped bus terminal for the Ahodwo station. • All streets bedeck with street lights • Good and motorable road networks • Road signs to guide drivers • Culverts on drains • Uninterrupted electricity supply *Local Governance:* • Active participation of women in development issues • Well - equipped community centres and recreational facilities • Well – functioning Town Council offices with requisite logistics and permanent technical staffs
3	Ahensan	*Education* • Adequate teaching and learning materials for public schools • Sponsorship for brilliant but needy pupils • A well – furnished library *Health* • More accredited NHIS service

		providers *Water and Sanitation* • Adequate and well – kempt public toilet facilities • Regular access to potable water • Regular and punctual emptying of communal refuse containers *Private Sector Development:* • Easy access to credit facilities • A large, well – equipped market facility • Productive and sustainable employment for the youth *Supporting Services* • Uninterrupted electricity supply • Good and motorable road networks • Communities bedeck with flood lights • All street bedeck with street lights • Expansion in the coverage of drains *Local Governance* • A well – equipped community centre • A well – functioning Town Council offices with permanent technical staffs *Security* • Reversing the incidence of criminal activities
4	Amakom	*Environment*: • Enforcement of bye – law on noise pollution • Demolishing of structures on water course *Education:* • Adequate teaching and learning materials for public schools • A well – furnished community library facility • Adequate classrooms and furniture for public schools • Demolishing of unauthorised structures on school land *Health:* • More accredited NHIS service providers *Water and Sanitation:* • Regular access to potable

		water • Expansion in the coverage of drains • Rehabilitation of existing public toilets facilities • Regular punctual emptying of communal refuse containers *Private Sector Development* • Productive and sustainable job for the youth • Easy access to credit facilities • A large well – equipped market facility *Supporting Services* • Good and motorable road networks • All the communities bedeck with flood lights *Local Governance* • A well – functioning Town Council office with requisite logistics and permanent technical staffs • Renovation of existing community centre • Lucrative motivation package for Unit Committee members *Security* • Halt the incidence of drug abuse especially marijuana (wee)
5	Asafo	*Education* • Adequate teaching and learning materials for public schools • Adequate classrooms and furniture for public schools • A well – kempt institutional WC toilet facilities for public schools • A well – furnished library facility • A well – equipped ICT centre • A fence wall around all public schools *Health* • More accredited NHIS service providers *Water and Sanitation* • Regular access to potable water • Regular and punctual emptying of communal refuse containers *Private Sector Development*

		• Productive and sustainable jobs for the youth • Easy access to credit facilities *Local Governance* • A well – functioning Town Council Office with permanent technical staffs *Security* • Halt the high incidents of criminal activities among the
6	Asawase	*Water and sanitation* • Regular and punctual emptying of communal refuse containers • Expansion in the coverage of drains • Adequate and well – kempt public toilet facilities *Private Sector Development* • Easy access credit facilities • Productive and sustainable jobs for the youth *Local Governance* • A well – functioning Town Council Office with logistics and permanent technical staffs *Civic Responsibility* • Reserving the high incidence of teenage pregnancy *Security* • Halt the high incidence of criminal activities among the youth
7	Asokore Mampong	*Education* • Adequate classrooms and furniture for public schools • A well – kempt institutional WC toilet facilities for public schools • A well – equipped ICT centre • Abolishing the morning and afternoon shift system *Health* • Reducing NHIS registration fees • More NHIS accredited service providers • More health personnel • Reversing the high incidence of malaria *Water And Sanitation* • Regular access to potable water • More well – kempt communal refuse sites

		• Adequate and well – kept public toilet facilities *Private Sector Development* • Easy access to credit facilities • Properly located and refurbished market facility • A sizable and well – equipped bus terminal *Supporting Services* Street lights along all the streets • A well – furnished community centre • More well – equipped and fenced football pitches • Good and motorable road networks *Security* • Lucrative motivation for community Watch – dog Committee • Expansion of police quarters to accommodate more police personnel • Setting up police post in some communities
8	Asokwa	*Education* • Adequate classrooms and furniture for public schools • Well – kempt institutional WC toilet facilities for public schools • Adequate teaching and learning materials for public schools *Water and Sanitation* • Adequate and well - kempt public toilet facilities • Regular access to potable water *Private Sector Development* • Productive and sustainable jobs for the youth • Easy access to credit facilities • A large well – furnished market facility *Supporting Services* • By – pass to extra traffic • Uninterrupted electricity supply • A well – furnished community centre *Local Governance* • A well – functioning Town Council office with logistics

		and permanent technical staffs
9	Atonsu	*Environment* • Reversing soil erosion • Clean and free flow streams and rivers • Enforcement of by – laws on noise pollution *Education*: • Well – kempt institutional WC public toilet facilities for public schools • Fence wall around all public schools • Adequate classrooms and furniture for public schools • A well – furnished ICT centre • Adequate teaching and learning materials for the public schools • Well – kempt institutional WC public toilets facilities for the public schools • A well – furnished community library facility *Health:* • More dedicated health personnel especially Doctors • A well – resource NHIS accredited service providers • More accommodation facilities to house health personnel *Water and Sanitation* • Regular access to potable water • Discouraging indiscriminate refuse disposal • A large well – kempt communal refuse sites • Adequate and well – kempt public toilet facilities *Private Sector Development* • Easy access to credit facilities • More large well – equipped market facilities *Supporting Service* • Free flow of traffic for the motoring and travelling public • More by - pass • Expansion of road carrying traffic in and out of the area • Uninterrupted supply of electricity • Good road networks

		Security • A well – resource police post with police personnel *Local Governance* • A well – refurbished community centre • A well – functioning Town Council Office with logistics and permanent technical staffs
10	Ayigya	*Education* • A well – resourced ICT centre • A well – furnished community library • Adequate classrooms and furniture for public schools • Well – kempt institutional WC toilet facilities for public schools • Adequate teaching and learning materials for public schools • Fence wall around all public schools *Health* • More NHIS accredited service providers *Water and Sanitation* • Regular and punctual emptying of communal refuse containers • Regular access to potable water *Private Sector Development* • Productive and sustainable jobs for the youth • A large well – equipped market facility • Easy access to credit facilities *Supporting Services* • Good road networks • Extension and uninterrupted electricity supply *Local Governance* • Well – functioning Town Councils office with logistics and permanent technical staff • Lucrative motivation for Unit Committee members *Security* • Halt the incidence of criminal activities among the youth
11	Bantama	*Education* • Adequate classrooms and furniture for public schools • Street lights along all the

		streets • Properly spaced speed rumps on access roads *Water and Sanitation* • Regular access to potable water • Adequate and well – kempt public toilet facilities • Expansion in the coverage of drains *Private Sector Development* • A large well – equipped market facility • Easy access to credit facilities • Productive and sustainable of jobs for the youth *Supporting Services* • A sizable well – equipped bus terminal • Extension and uninterrupted electricity supply *Local Governance* • A well - furnished community centre • A well – functioning Town Council Office with requisite logistics and permanent technical staffs • Broad – based participation in decision making *Civic Responsibility* • Halt the incidence of immoral behaviour among the youth
12	Bomso	• *Environment* • Waterways free from encroachment by churches and other structures • Enforcement of bye – laws on noise pollution *Education* • Adequate classrooms and furniture for public schools • Well – kempt institutional WC toilet facilities for basic schools • Adequate teaching and learning materials for basic schools • Fence wall around all public schools • Public schools compound free from encroachment of unauthorised structures *Health*

		• More NHIS accredited service providers *Water and Sanitation* • Regular access to potable water • Clean drains • Regular and punctual emptying of communal refuse containers • Adequate and well – kempt public toilets facilities *Private Sector Development* • Easy access to credit facilities • A large well - equipped market facility • Productive and sustainable jobs for the youth *Supporting Services* • Good road networks • Street lights along all the streets • Uninterrupted electricity supply • Access roads free from encroachment by unauthorised structures *Local Governance* • Lucrative motivation packages for Unit Committee members • A well – functioning Town Councils Office with requisite logistics and permanent technical staff *Security* • Reserving the incidence of delinquency
13	Buokrom	*Education* • Adequate classrooms and furniture for public schools • A well – kempt institutional WC toilet facility for public schools • Fence wall around all public schools • A well – finished community library • Adequate teaching and learning materials for public schools *Health* • More accredited NHIS service providers *Water and Sanitation* • Regular access to potable water

		• A well – constructed and clean communal refuse site • Regular and punctual emptying of communal refuse containers • Adequate and well - kempt public toilet facilities • Rehabilitation of bridges and coverts • Expansion in the coverage of drains *Private Sector Development* • A large well - equipped market facility • Easy access to credit facility • Productive and sustainable jobs for the youth *Supporting Services* • Good road networks • A sizable well - constructed parking lot • Street lights along all the streets *Security* • Reversing the rate of criminal activities among the youth • A well – resourced police personnel
14	Fante New Town	*Education* • A well – resourced ICT centre • A well – furnished library facility • Adequate classrooms and furniture for public schools • A well – kempt institutional WC toilet facility for public schools *Health* • More accredited NHIS service providers *Water and Sanitation* • Regular access to potable water • A well – constructed and clean communal refuse site • Regular and punctual emptying of refuse containers • Expansion in the coverage of drains • Adequate and well – kempt public toilet facility *Private Sector Development* • Easy access to credit facilities *Supporting Services*

		• Good road networks • Street lights along all the streets *Local Governance* • A well – functioning Town Council offices with requisite logistics and permanent technical personnel
15	Kentenkrono	*Environment* • Waterways free from encroachment by structures *Education* • Adequate classrooms and furniture for public schools • A well – kept institutional WC toilets facility • Fence wall around all public schools • Adequate teaching and learning materials *Health* • An health facility staffed with dedicated and committed medical personnel *Water and Sanitation* • Regular access to potable water • A well – constructed and clean communal refuse site • Regular and punctual emptying of communal refuse containers • Regular communal cleaning – up exercises • Adequate and well – kept public toilet facilities • Enforcement of sanitation bye – laws *Private Sector Development* • A large well - equipped market facility • Easy access to credit facilities Supporting Services • Extension and uninterrupted electricity supply • A sizable and well – constructed parking lot • Good road networks • Street lights along all the streets • *Local Governance* • A well – functioning Town Council offices with requisite logistics and permanent

		technical personnel *Security* • Reversing the rate of criminal activities among the youth
16	Krofrom	*Education* • A well – resourced ICT centre • Adequate classrooms and furniture for public schools • Well – kempt institutional WC toilet facility for public schools • A well - furnished community library • Sponsorships for the brilliant but needy students *Health* • More accredited NHIS service providers *Water and Sanitation* • Regular access to potable water • Adequate and well - kempt public toilet facilities *Private Sector Development* • Easy access to credit facilities • Productive and sustainable jobs for the youth *Supporting Services* • Good road networks • *Security* • Halt the rate of steeling
17	Kwadaso	*Education* • Well – furnished Library facilities for public schools • Well – resourced Information Communication Technology(ICT) centre for public schools • Adequate classrooms and furniture to abolish the Shift system in public schools • Adequate and well – equipped facilities for Kindergarten schools • A well - furnished library facility for public schools • Teachers quarters to accommodate teaching staffs • Public schools compound free from encroachment by unauthorised structures • Cordial relationship between teachers and parents • Flood lights in all public

		schools • Stopping religious activities in classrooms • A well – furnished canteen facility for public schools *Health* • Good road network to the SDA hospital • Reversing the high incidence of malaria • More accredited NHIS service providers • Easy procedure in registering with NHIS *Water and Sanitation* • Regular access to potable water • Adequate and well – kempt public toilet facilities • A well – constructed and clean communal refuse site *Private Sector Development* • A large well – equipped market facilities • Easy access to credit facilities • Moderate interest on loans. *Supporting Services* • Good road network • Well – constructed and openly spaced speed ramps • Bridges at river – crossing points • A sizable well – constructed bus terminal at the market *Local Governance* • Lucrative motivation package for unit committee members • A well – functioning Town Council office with requisite logistics and permanent technical personnel *Security* • Well – resource watchmen at the market • Well – resource police station and personnel
18	Manhyia	*Environment* • Waterways free from encroachment by structures • Discouraging disposal of refuse into water bodies *Education* • Rehabilitation of dilapidated school blocks in public

		schools • Adequate classrooms and furniture for public schools • Well – kempt institutional WC toilet facilities for public schools • Good performance of public schools pupils • Stopping religious activities in the classrooms *Health* • Well – equipped health facilities • More dedicated and committed workers • Ambulance services • Improvement in the management of NHIS • Easy procedure in registering for NHIS • More accredited NHIS service providers *Water and Sanitation* • Regular access potable water • Adequate and well – kempt public toilet facilities • Well – constructed and clean communal refuse sites • Regular and punctual emptying of refuse containers *Private Sector Development* • Adequate land for small and medium scale artisan • Easy access to credit facilities. • Moderate fee charges by KMA • Adequate knowledge on business and financial management • Well – organised cooperative societies *Local Governance* • Well – functioning Town Council Offices with requisite logistics and permanent technical personnel *Security* • Well – resource police service • Well - resource Community watch dog committee • Halt the rate of drug peddling
19	Nhyiaeso	*Education* • Good performance of public school pupils • Adequate teaching and learning materials for public

		schools • Well – resourced ICT centre for public schools • Adequate classrooms and furniture for public schools to reduce overcrowding and poor concentration of pupils *Health* • Reversing the high incidence of malaria • More accredited NHIS service providers *Water and Sanitation* • Regular access to potable water • Regular communal clean – up exercise • Distilling choked drains • Discouraging indiscriminate dumping of refuse • Adequate and well – kempt public toilet facilities • Expansion in the coverage of drains *Private Sector Development* • Easy access to credit facilities
20	Oforikrom	*Education* • Adequate classrooms and furniture for public schools • Fence wall around all public schools • Well – resourced ICT centre • Adequate teaching and learning material for public schools • Well – kempt institutional WC toilet facilities for public schools • Well – furnished library facilities for public schools • Good performance of public schools pupils • Adequate playing grounds for public schools • All public schools compound free from encroachment by unauthorised structures *Health* • More accredited NHIS service providers • Reversing high incidence of malaria and cholera • *Water and Sanitation* • Regular access to potable water

		• Discouraging indiscriminate disposal of refuse • Well – constructed and clean communal refuse site • Regular and punctual emptying of communal refuse containers • Distilling choked drains • Adequate and well – kempt public toilet facilities *Environment* • Reversing the rate of soil erosion *Supporting Services* • Good road networks • A sizable well – constructed parking lot *Private Sector Development* • Easy access to credit facilities • Productive and sustainable job for the youth • A large well – equipped market facility *Security* • More well – resource security personnel. • Halt the rate of crime • *Local Governance* • Well – functioning town council office with requisite logistics and permanent technical staff
21	Patase/Suntreso	*Education* • Fence wall around all public school • Public schools compound free from encroachment by unauthorised structures • Introduction of school feeding programmes in public schools • Adequate teaching and learning materials for public schools • Teachers quarters to accommodate teaching staffs in the public schools • Adequate classrooms and furniture for all the public schools • A well - resource ICT centre for the public schools • Good performance of public schools pupils *Health*

		• More accredited NHIS service providers • Extensive education on NHIS *Water And Sanitation* • Regular access to potable water • A well – constructed and clean communal refuse site • Discouraging indiscriminate refuse disposal • Regular communal clean – up exercise • Regular and punctual emptying of communal refuse containers • Adequate and well – kempt public toilet facilities *Private Sector Development* • Easy access to credit facilities • Adequate knowledge on credit facilities • Productive and sustainable jobs for the youth • A large well – equipped market facility • Reduction in the amount of fees and licenses *Supporting Services* • Good road networks • Flood lights in public open places *Civic Responsibility* • Proper parental control of children *Security* • Lucrative motivation packages for community watch – dog committee • A well – resourced community watch – dog committee • Well – resourced police personnel •
22	Santasi	*Environment* • Enforcing bye – laws on noise pollution *Education* • Effective supervision of students in class • Well – furnished library facilities for all public schools • Regular and punctual attendance of public schools' Teachers • Renovation of public school

		infrastructural facilities • Quality teaching and learning • A well – kempt institutional WC toilet facilities • Adequate classrooms and furniture for public schools *Health* • More accredited NHIS service providers • Reversing the incidence of malaria • Intensive education on NHIS *Water and Sanitation* • Regular access to potable water • Renovation and expansion the coverage of drains • Regular communal clean – up exercise • Adequate and well – kempt public toilet facilities • A well – constructed and clean communal refuse site • Discouraging indiscriminate dumping of refuse • Affordable cost of house – to – house refuse collection • More distribution of refuse bins to households *Private Sector Development* • A large well – equipped market facility • Easy access to credit facilities • A streamline procedure in acquiring land for economic activities • Technical capacity building programmes for the youth *Supporting Services* • A sizable well – constructed lorry park *Security* • Halt the rate of drugs abuse and alcoholism among the youth
23	Suame	*Environment* • Waterways free from encroachment by unauthorised structures *Education* • Fence wall around all public schools • Adequate classrooms and furniture for all public schools • A well – kempt institutional

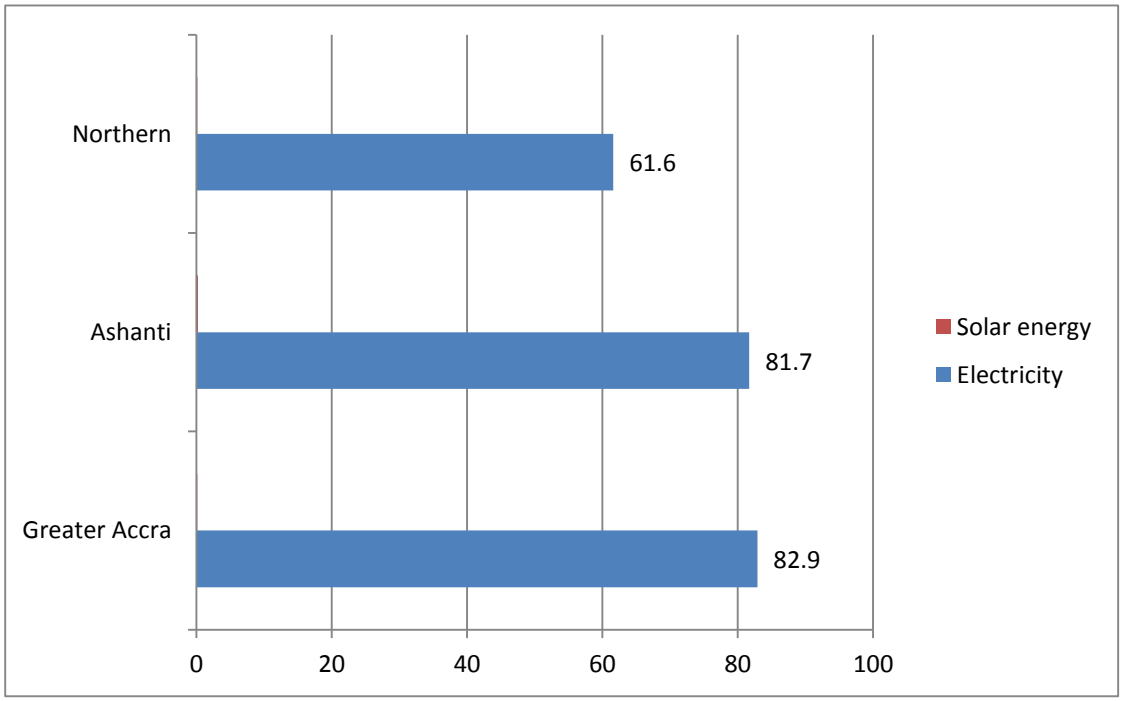
		WC toilet facilities for all public schools • All public school compounds free from encroachment by unauthorised structures • Adequate teaching and learning materials for public schools *Health* • More accredited NHIS service providers *Water and Sanitation* • Regular access to potable water • Adequate and well – kempt public toilet facilities *Private Sector Development* • Productive and sustainable jobs for the youth • Easy access to credit facilities • A large well – equipped market facility *Supporting Services* • Extension and uninterrupted electricity supply • Expansion in the coverage of drains • Good roads networks • Bridges and culverts over drains and streams *Local Governance* • Active participation of women in decision making *Security* • A well – resource community watch – dog committee • Halt the incidence of criminal activities among the youth • Rapid response of Fire Service to emergency situation
24	Tafo	*Education* • Fence wall around all public schools • A well - resource ICT centre • A well – kempt institutional WC toilet facility for all public schools • A well – furnished library facilities • Expansion in the coverage of drains • Adequate classrooms and furniture for all public schools • Teachers quarters *Health*

		• More accredited NHIS service providers • Accommodations for medical personnel • More committed and dedicated medical personnel *Water and Sanitation* • Fence wall around Tafo cemetery • Regular access to potable water • Adequate and well - kempt public toilet facilities • Regular and punctual emptying of communal refuse containers *Private Sector Development* • A large well – equipped market facility • Easy access to credit facilities • A well – developed mechanical garage hub *Supporting Services* • Uninterrupted supply of electricity • Good road network *Local Governance* • A well – functioning Town Council office with requisite logistics and permanent technical personnel *Security* • Expansion and renovation of the police barracks • Well – resource police personnel • Lucrative motivation packages to the watch – dog committee

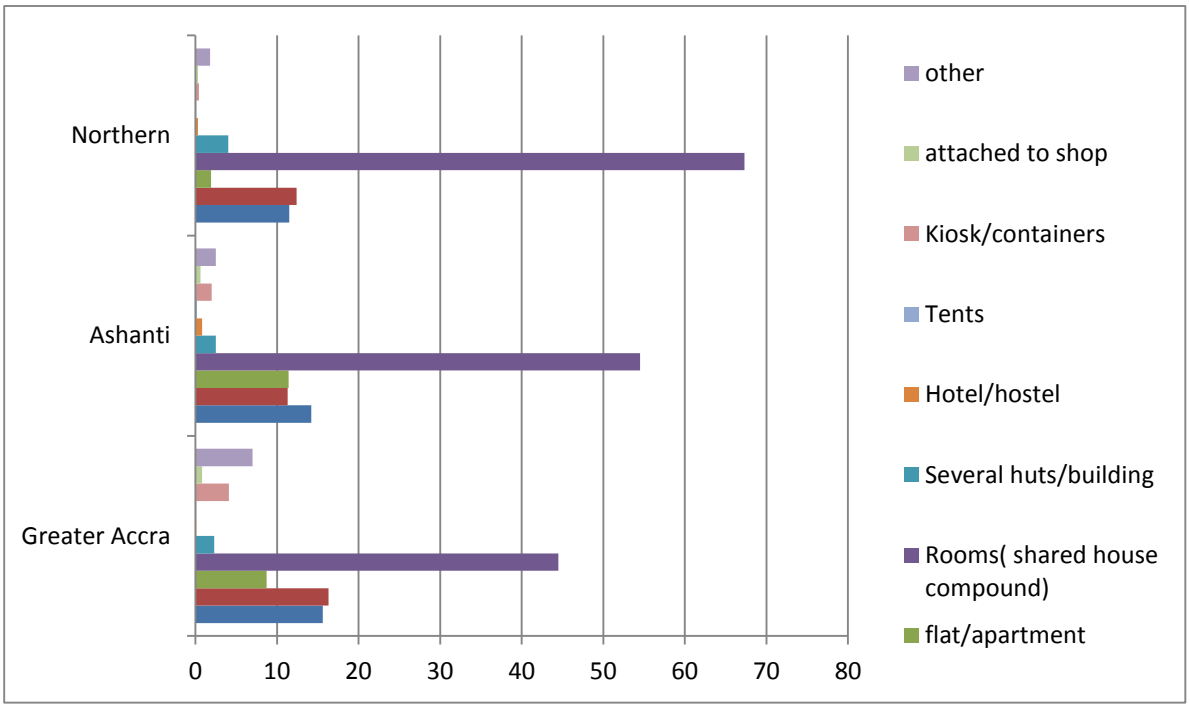
Appendix 4

A comparison of Northern, Ashanti and Greater Accra Regions

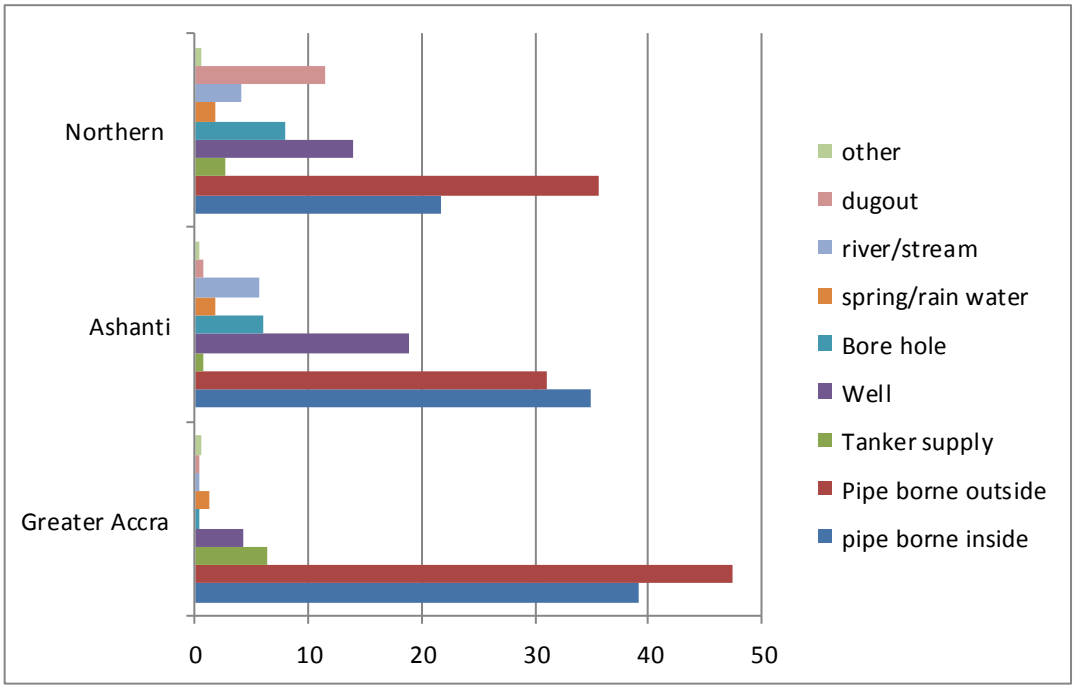
Electricity sources: Solar energy and Hydro-electricity



Housing stock



Water supply sources



Appendix 5

Interview Questions

Interview Questions (No.1)

Agency: International Development Partners

Participant Name: **Date:**

1. What is the agency's policy/strategy on climate change adaptation?

2. Which sectors are earmarked as priorities for adaptation attention in Ghana?

3. How are these priority sectors determined?

4. What urban related programmes are being carried out?

5. How is climate change adaptation being mainstreamed in urban related projects?

6. How is the government being encouraged to mainstream climate resilience in urban development planning?

7. What challenges have been experienced in mainstreaming climate adaptation in urban development lending?

8. To what extent have these lending/development assistance programmes influenced integrating climate resilience in development planning at the metropolitan level?

9. How does the agency engage directly with local governments in implementing resilient urban development programmes?

10. What are some of the advantages and constraints in engaging directly with local governments?

Interview Questions (No.2)
Agency: Ministry of Environment Science and Technology (Climate Change Focal Point)
Participant: **Date:**

1. What factors influenced Ghana ratifying the UNFCCC and Kyoto Protocol?

2. What negative ramifications would have been experienced if Ghana had not ratified?

3. To what extent is climate change adaptation being mainstreamed in national development planning?

4. What steps are taken in preparing the national communications report?

5. How are the thematic areas of the National communications determined?

6. To what extent have international research organisations been influential in the development of national communications?

7. To what extent have national based research institutions been involved in the drawing up of the national communication?

8. What programmes are in place to inform local government and other urban policy makers on climate change adaptation issues?

9. What challenges have been experienced so far in engaging local government on climate change issues?

Interview Questions (No.2)
Agency (ies): National Development Planning Commission, Ministry of Local Government and Rural Development
Participant: Date:

What is the role of the commission in development planning?

To what extent is climate resilience integrated in development planning guidelines and regulations?

What were the motivations for integrating climate change adaptation concerns in current National sustainable development guidelines?

Why were climate concerns not captured in guidelines GPRS I and II?

What has the response from local governments being towards the new guidelines particularly, the guidelines on adaptation?

What measures are in place to motivate local governments to adopt climate adaptation concerns in development planning?

Any implications for Metropolitan, municipal and district assemblies which do not comply in producing Annex 9(Guidelines on potential impacts and adaptation)? Any benefits for those who comply?

Interview Questions (No.3)
Agency: Research/Educational Institutions
Participant: **Date:**

What type of research is being conducted related to climate change vulnerability?

How are thematic areas of climate change areas prioritised and selected to warrant research attention?

To what extent do these research themes address urban development planning?

How have these research findings been disseminated to the public and policy makers?

What climate change adaptation advocacy is the institute engaged in to inform the public and influence policy decision making?

What challenges have been encountered so far in disseminating climate research findings?

What challenges are encountered in disseminating research findings in general?

How does the institution engage with local government in policy formulation?

Is there a demand for information on climate change from stakeholders and policy makers? Which sectors are these demands made for?

To what extent does the institution engage with other research/educational organisations within and outside Ghana?

Interview Questions (4)

Non-Governmental Organisations, Policy and Development Think Tanks

Participant Name: **Date:**

1. What are the mission and goals of the organisation?

2. What are the thematic areas of the organisation and the rationale for focusing on these thematic areas?

3. To what extent is the institute engaged in climate change adaptation programmes and advocacy?

4. What have been the motivations for engaging in climate change adaptation advocacy?

5. What challenges have been experienced in disseminating climate change information to policy makers and the public?

6. Is there a demand for climate change information from policy makers and the public?

7. How involved is the organisation with other climate change international advocacy institutions?

8. To what extent does addressing climate change resilience in cities reflect in the organisations' activities?

9. Why has it featured (or not featured) in the organisations advocacy programmes?

Interview Questions (No.5)
Agency: Metropolitan /Municipal/ District Assembly (MMDA)
Participant: **Date:**

1. What issues are the main concerns of the MMDA?

2. What are your general thoughts on the 'climate change' idea?

3. What are the organisations perceptions on ensuring development is resilient to current and future climatic conditions?

4. What climate concerns or adverse effects of weather concerns have been raised at the unit committee and sub metro level?

5. What benefits do you consider to be expected from ensuring development can withstand harsh current and future weather conditions and its effects?

6. How concerned is the MMDA about the effects of adverse weather and its impacts such as droughts, floods on development?

7. What measures are in place to ensure that development is climate resilient?

8. How is ensuring climate resilient development reflected in the MMDA action plans in line with national development planning guidelines?

9. To what extent is the MMDA engaged in sister- city or international networks?

10. What are the motivations for engaging in these networks?

11. Has the city been engaging in climate change city networks such as ICLEI? What are the reasons for engaging/or not engaging?

12. What active role does the MMDA play in these networks?

13. What are the reasons for engaging (or not engaging) in these networks?

14. How has the MMDA been engaging with research institutions/NGO/Think Tanks both locally and globally to inform medium term and annual action plans?

Appendix 6

INFORMATION SHEET

Determinants of Climate Resilient Policy Responses in Urban Areas: A Study of Ghana.

You are kindly being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?

The aim of this study is to determine factors which have the potential to influence the adoption of climate resilient policy responses to urban areas, with particular reference to Ghana. Climate change has been identified as a threat envisaged to exacerbate the already existing poor conditions of many of the urban areas in developing countries especially Sub-Saharan African countries, though their contributions to greenhouse gas emissions are significantly minimal. Despite the highlighted role of governments in addressing environment and development issues, adopting climate change concerns in urban development has received mixed response across Sub-Saharan Africa (SSA). This research therefore investigates and aims to explain why some urban governments respond and others do not. The study will last two months and will involve interviews with key actors engaged in formulating urban development policies.

Why have I been invited to participate?

You have been invited to take part in this study because of your role as a key actor in formulating urban development programmes and policies. In addition, participants are drawn from international development partner agencies, government departments as well as selected urban governments.

Do I have to take part?

Participation is entirely voluntary. Therefore you have the option to take part and are free to opt out of the study at any time without giving any reason. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form

What will happen to me if I take part?

If you agree to take part you would be required to answer a set of interview questions. These questions are related to information on the decision making process and opinions concerning climate change. In addition to the interviews, relevant policy documents may be requested. The interview session is expected to last 30 min and would be held in the offices of your organisation or in a public space. With your prior consent the interview may be audio recorded.

What are the possible benefits of taking part?

Taking part in this research will help in providing data to further our understanding of determinants of policy responses to climate change in urban areas. Consequently findings in the study are expected to contribute to decision making concerning climate change in urban areas in Ghana.

Will what I say in this study be kept confidential?

Yes. All information collected in this study will be kept strictly confidential within the limitation of the law. If you don't prefer to be named in any publications related to this research or be identified with the information you provide by virtue of your role in the organisation all effort will be made to ensure all information you provide will be de-identified and made anonymous.

All data and any information identifying you will be kept in locked filling cabinets and related computer files on laptops and storage devices such as memory sticks will be accessible by password only available to the researcher. In addition, all information on laptops and storage devices will be security code encrypted In line with the University's policy on Academic Integrity. Data generated from this study will be retained in paper and electronic form for a period of ten years after the completion of the research.

What should I do if I want to take part?

After the initial contact by email and phone, potential participants will be contacted again after 7 days by email or phone. Therefore as a participant you may opt in by accepting the invitation to take part in the research and respond to the email or by phone. It would be much appreciated if a quick response is given to this request.

What will happen to the results of the research study?

The results of the research will be used for academic purposes. After the scheduled interview, a transcribed version of the interview would be sent to you by email or post to verify as well as confirm the data provided. This

verification will take place before the information is produced in any publication. If you would like to make any modifications to the data kindly reply by email.

The data collected will be published in a thesis to be submitted for the Doctor of Philosophy degree in Urban Planning: Developing and Transitional Regions. Sections of the thesis would also be published in academic journals and conference papers. In addition the final thesis would be made available on request and relevant sections disseminated to participants who took part in the study. This dissemination process may involve, for instance, presentations of research findings at seminars and workshops.

Who is organising and funding the research?

The study is being organised by the principal investigator, who is a PhD researcher at Oxford Brookes University, Department of Planning. The research is being supervised by Dr. Beacon Mbiba and Dr. Elizabeth Wilson and privately funded by the researcher.

Who has reviewed the study?

This research has been approved by the Oxford Brookes University Research Ethics Committee. If you have are any concerns about the way in which the study has been conducted, please contact the Chair of the University Research Ethics Committee at Oxford Brookes University: **ethics@brookes.ac.uk**

Appendix 7

CONSENT FORM

Full title of Project: Determinants of Climate Resilient Policy Responses in Urban Areas:A Study of Ghana

Name, position and contact address of Researcher:
Afua Ofouwaah Adu-Boateng
PhD Researcher
Department of Planning
Oxford Brookes University, Gipsy Lane
Oxford, OX3 0BP
afua.adu-boateng@brookes.ac.uk

Please initial box

	I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
2.	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.	☐
3.	I agree to take part in the above study (Please note that the sample size for this study is small).	☐

Please tick box

		Yes	No
4.	I agree to the interview being audio recorded	☐	☐
6.	I agree to the use of anonymised quotes in publications	☐	☐
7.	I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre with security code encryption and may be used for future research.	☐	☐

Name of Participant	Date	Signature
Name of Researcher	Date	Signature

Appendix 8

List of interviewees

Code	Organisation	Interview Date
Int. 1	National Development Planning Commission	1st August 2011
Int. 2	Environmental Protection Agency-Accra	1st August 2011
Int. 3	Climate Change Focal Point- Environmental Protection Agency	5th August 2011
Int. 4	World Bank-Ghana	5th August 2011
Int. 5	Environmental Protection Agency	5th August, 2011
Int. 6	African Adaptation Programme/UNDP	5th August 2011
Int. 7	Institute of Local Government Studies	9th August 2011
Int. 8	Town and Country Planning Department(Accra)	10th August 2011
Int. 9	University of Ghana-Building capacity for climate change adaptation- BC4	10th August 2011
Int. 10	Kumasi Metropolitan Assembly-District Planning coordinating unit	15th August 2011
Int. 11	Kumasi Metropolitan Authority - Millennium Cities Initiative	15th August 2011
Int. 12	Kumasi Metropolitan Assembly	15th August 2011
Int. 13	Architects	
Int. 14	National Disaster Management Organisation-Kumasi	15th August 2011
Int. 15	Environmental Protection Agency-Ashanti Region	15th August 2011
Int. 16	Building and Road Research Institute of CSIR	18th August 2011

Int. 17	Kumasi Metropolitan Assembly	19th August 2011
Int. 18	Social Investment Fund-Kumasi	19th August 2011
Int. 19	Kumasi Metropolitan Authority-District Planning coordinating unit	19th August 2011
Int. 20	Ashanti Regional Town Planner	19th August 2011
Int. 21	University of Development studies-CCEIR, Tamale.	22nd August 2011
Int. 22	Tamale Metropolitan Authority-District planning coordinating unit	23rd August 2011
Int. 23	Tamale Metropolitan Authority –Sister- City partnership	23rd August 2011
Int. 24	Northern Regional Coordinating Council	24th August 2011
Int. 25	CARE International-Northern Region	27th August 2011
Int. 26	The Energy center-Kwame Nkrumah University of science and technology	29th August 2011
Int. 27	Ministry of Local government and rural development-Urban	1st September 2011
Int. 28	Ministry of Finance and Economic Planning	1st September 2011
Int. 29	Accra Metropolitan Authority- Development Planning coordinating unity	2nd September 2011
Int. 30	Ghana Institute of Planners	3rd December 2012
Int. 31	National Climate Change Focal Team	30th August 2012

List of informal interviewee organisations (August 2011)

Department for International Development-Ghana

Former Staff of United Nations Development Programme

Savannah Accelerated Development Authority, Ghana.

Ministry of Finance and Economic Planning (Donor Multi Budget Support Desk)

Kwame Nkrumah University of Science and Technology-Department of Architecture

Appendix 9

List of organisations in preliminary fieldwork studies, April 2010

International Institute of Environment and Development

Town and Country Planning Department, Kumasi Metropolitan Assembly

Town and Country Planning Department, Tamale Metropolitan Assembly

Town and Country Planning Department, Accra Metropolitan Assembly

World Bank, Ghana

Water Research Institute, Centre for Scientific and Industrial research

Environmental Protection Agency, Ministry of Environment science and technology

Environmental Protection Agency, Tamale

Appendix 10

Framework for investigation and data collection

Research Question		Objective	Indicators	Means of Verification	Tools	Expected Output
EXTERNAL PRESSURE	To what extent is there external pressure from IO/NGO's and media etc to adopt climate change urban adaptation policies?	- Identify International Organisations/NGO's and the extent to which they are influential in shaping policies related to urban development.	-Incentives for adopting climate change adaptation in development - Green Conditionalities for development funding related to climate proofing development -direct climate change adaptation policy lending -pressure groups for climate change adaptation	UNDP,UNEP,UN-Habitat, World Bank, AfDB ENGO's,Development/ - Disaster Management Organisations - Media reports -urban development professionals ie architects planners, engineers associations	- Interviews - Policy/ Strategy Analysis - Documents analysis	-Assess the role of IO development partners/NGO's in shaping CC policy. - Determine the CC focus areas of these organisations. Whether there is Pressure for national and local government to adopt climate resilient strategies in development?
NORMATIVE IMITATION	To what extent has climate change urban adaptation attained social value? Explore the quest for legitimacy, political and social identity associated with responding to climate change	- Determine whether climate change adaptation in urban areas is socially valued.	Perception of climate change as a social norm among local government policy makers	- DAs	- Interviews - Focus Groups Discussions -Questionnaires	Whether climate change adaptation has attained normative power.

RATIONAL DECISION MAKING	What institutional factors determine the response to cc adaptation strategies in urban development policies?	-Explore the institutional environment towards climate change adaptation	Political/electoral incentives	- DAs -Climate Change Focal Point	-Interviews -Questionnaires -Focus group discussions -Review of literature, policy documents, government regulations and guidelines, - participant observation at decision making meetings	- Identify available political/electoral incentives - Identify the Action arena for rban development and management decision making -Actors and power brokers and negotiations -Policy Preferences of decision makers -Structure of the General ramework within which the climate policy action arena is located -Working Rules employed in naking decisions on climate change strategies - Policy makers' development ideologies - Policy makers perception of climate change adaptation
COGNITIVE HEURISTICS	To what extent does the DA engage in political socialisation within Ghana and with other cities?	Consider networking opportunities with other cities and the learning process which takes place		-DA -City-Networks -Sister City Relationships -ECOWAS -AU	- Interviews - Studying of policy documents	-Engagement of DA in city networks - City-City exchanges and the influence on policy adoption - Motive for joining these networks - type of knowledge exchanged

INVESTIGATIVE FRAMEWORK- INSTITUTIONAL ANALYSIS FRAMEWORK DEVELOPMENT

Action 1	Data Generated	Data Collection Tools
Identify and examine the policy action arena(s)	• Action Structures for Climate Change responses • Working Rules employed in making decisions on climate change strategies • Physical and Material conditions • Structure of the General framework within which the climate policy action arena is located	• Review of literature, • policy documents, government regulations and guidelines, • interviews

Action 2	Data Generated	Data Collection Tools
Identify and examine the policy actors	• Participants and their positions in the climate change policy process • What information on climate change is available to the actors • How actors use and process climate change information • Processes actors use for selecting focus areas to respond to	• Interviews • Review of policy documents and national government guideline

Action 3	Data Generated	Data Analysis
Explore and analyse the patterns of interaction in the policy arena	• Incentives and deterrents to policy responses in urban areas • The conflicts and points of negotiation • How the interaction has produced an outcome of limited policy responses to urban areas.	• Collating • Coding • Content analysis • Mapping out the linkages between action arenas, actors and outcome