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Adaptation for the Urban Poor: Assessing the Tensions in the Climate Change and Urban Poverty Reduction Debates

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CONTENTS

LIST OF ABBREVIATIONS

CCP	-	Cities for Climate Protection
GHG	-	Greenhouse gas
ICLEI	-	International Council for Local Environmental Initiatives
IDP	-	eThekwini Municipality's Integrated Development Plan 2006 – 2011
IPCC	-	Intergovernmental Panel on Climate Change
NAPA	-	National Adaptation Programme of Action
UN HABITAT	-	United Nations Human Settlements Programme
UNFCCC	-	United Nations Framework Convention on Climate Change

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INTRODUCTION

The vulnerability of the urban poor to climate change is not articulated in adaptation efforts due to tensions in the way climate change adaptation and urban poverty reduction efforts have been framed within the policy arena. At the local level, the impact of climate change on the urban poor is evident. For example, the impact of flooding, landslides and storms in urban centres like Mumbai, Manila and Durban in the past few years have revealed the vulnerability of the urban poor living there. At the national and international level, there is a growing amount of research being conducted into adaptation to climate change.

However, the link between the two is missing. In other words, the vulnerability of the urban poor has not been articulated in adaptation efforts so far and there are limited mechanisms currently available to help them develop adaptive capacities. I have attributed this to the tensions that have developed in climate change and urban poverty debates at the policy level.

The aim of this paper is to analyse why and how the debates have been framed in the policy arena in such a way to create these tensions. This paper will also explore how the tensions can be addressed at the local level to ensure the vulnerability of the urban poor can be better articulated in adaptation policies and urban planning[1] in the future.

The vulnerability of the urban poor

Vulnerability is best defined as the "chronic set of structural conditions which maintain people in a constantly precarious state" (Loughhead and Mittal, n.d.). These structural conditions are determined by how people experience their lives, by shocks such as disasters and by the "inequality, exclusion and exploitation" (Ibid) that undermines people's ability to make choices.

It is important to discuss adaptation for the urban poor because they are highly vulnerable to climate change. This is becoming a problem because of the increasing urban population in many low-income countries. At the beginning of the 20th Century, the proportion of the world's population living in urban centres was less than 10 per cent (Gilbert et al, 1996, p6). By 2000, it had increased to 47 per cent, with most of the urban dwellers living in Africa, Asia, Latin America and the Caribbean (Hardoy et al, 2006, p32). Unfortunately, this increase in population is rarely met with adequate services and amenities, which makes some urban dwellers highly vulnerable to climate change impacts.

In some urban centres, such as Mumbai, over 50 per cent of the population live in informal settlements. They also commonly lack piped water, waste collection, paved roads, sewers and storm drains (Reid and Satterthwaite, 2007, p1).

This is evident in urban centres such as Bangladesh, where 2.5 million people living in informal settlements lack water and sanitation provision, and 58 per cent of the population is not connected to a water pipe (UN-HABITAT, 2003, p15). In Nairobi, a study shows that 10,000 inhabitants of an informal settlement share 215 toilets (UN-HABITAT, 2003, p25).

Informal settlements are also illegally built in areas that are exposed to climate change hazards, such as flood plains and steep slopes, exposing them to impacts such as flooding and landslides (Hardoy et al, 2006, p75). Such hazardous sites are affordable for the urban poor because they are unattractive for other purposes. They are also in relatively central locations so the urban poor can minimise living costs and travel time to their workplaces.

[1] *Urban planning and urban poverty reduction efforts* – this paper will use both terms interchangeably, as the urban planning of low-income countries is often aimed to reduce urban poverty.

These conditions faced by the urban poor are largely a result of municipal government's anti-poor attitude and lack of capacity to carry out good land-use management (Satterthwaite, 2008, p8). Firstly, land-use management that influences the supply of land for housing is regulated to favour high-income groups, making land and housing unaffordable for the urban poor. Similarly, there is lack of investment in infrastructure and housing services available for the poor (Hardoy et al, 2006, p77). This exposes the urban poor, who cannot afford private services, to health risks in the event of climate change impacts such as flooding or rising sea levels.

The focus

This paper focuses on two sets of tension that arise from the climate change and urban poverty reduction debates as depicted in Diagram 1, below.

1. At the national and international level, the climate change debate has been framed to focus on the global risk of climate change and the universal responsibility for mitigation. When the need for adaptation has been recognised, the debate has been framed to focus on the vulnerability of the rural poor, not the urban poor.

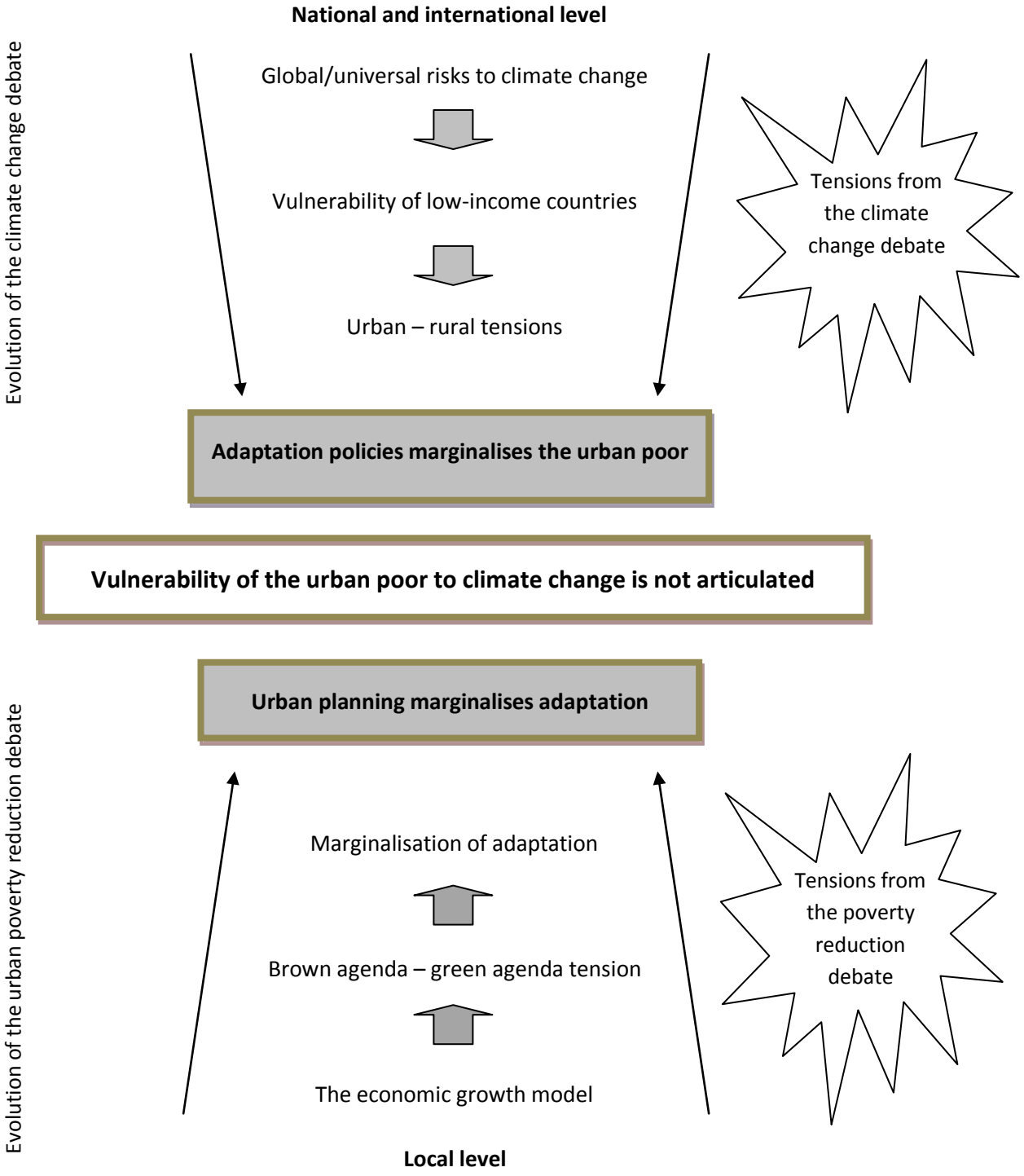
2. At the local level, the urban poverty reduction debate has been framed to focus on the brown agenda to reduce the vulnerability of the urban poor, not the green agenda. It also rarely considers the need for adaptation and thus marginalises the adaptive needs of the urban poor. The brown and green agendas will be defined and explained in Chapter One, section 1.2.

This paper aims to find out why and how the debates have been framed to create these tensions by providing a historical analysis of the debates. This is important because adaptation policies at the national and international level are influenced by the way the climate change debate has been shaped. If this debate has not articulated the needs of the urban poor, then adaptation policies are unlikely to do so.

Likewise, urban planning at the local level is very much influenced by how the urban poverty reduction debate has been framed. If this debate has not articulated adaptation, then the urban planning process will also marginalise adaptation needs. As a result, the vulnerability of the urban poor to climate change will not be addressed.

An understanding of how and why these debates have been framed in this way can lead us to consider how the tensions can be addressed at the local level, so the adaptive needs of the urban poor can be better articulated in the future. This is demonstrated in this paper by case studies of Durban, South Africa and urban centres in the Philippines.

Diagram 1 – Tensions in the climate change and urban poverty reduction debates



STRUCTURE OF THE PAPER

Chapter One looks at why the vulnerability of the urban poor to climate change has not been articulated. It does this by examining the historical trajectory of the climate change and urban poverty reduction debates to understand why and how the tensions have developed and persisted. The analysis reveals that the tensions in the climate change debate have influenced adaptation policies to focus primarily on the rural poor. Likewise, the tensions in the urban poverty reduction debate have shaped urban planning processes to marginalise adaptation. This chapter also provides an insight into how integrating adaptation into the urban planning process has the potential to address these tensions.

Chapters Two and Three of the paper examine how the adaptation intervention in Durban and in urban centres in the Philippines can potentially overcome the tensions explored in this paper. The case study on Durban looks at an adaptation strategy initiated by the local government. It explores how and why adaptation is being integrated into the long-term urban planning process, the constraints it faces and how the vulnerability of the urban poor to climate change can be addressed. The second case study looks at community-led adaptation efforts in the Philippines. It offers an innovative approach to understand how locally-driven initiatives can help the urban poor to adapt and address the "root causes of vulnerability" to climate change (Allen, 2006, p82) as well as help reduce urban poverty.

1. THE DEVELOPMENT AND PERSISTENCE OF THE TENSIONS

1.1 THE CLIMATE CHANGE DEBATE

As stated in the introduction, one of the arguments of this paper is that the vulnerability of the urban poor to climate change has not been articulated in adaptation strategies because of the way climate change has been framed at the national and international level. This is important because the debate has influenced the way international and national adaptation policies are formulated. This section will demonstrate how important it is for the debate to consider the urban poor, so that future adaptation policies can better address their needs.

On a broad level, underlying the climate change debate is the belief that climate change poses global risks. However, this perspective has been challenged by debates on vulnerability, revealing that climate change has disproportional impacts on low-income countries and within them on particular groups, thereby making them more vulnerable to climate change.

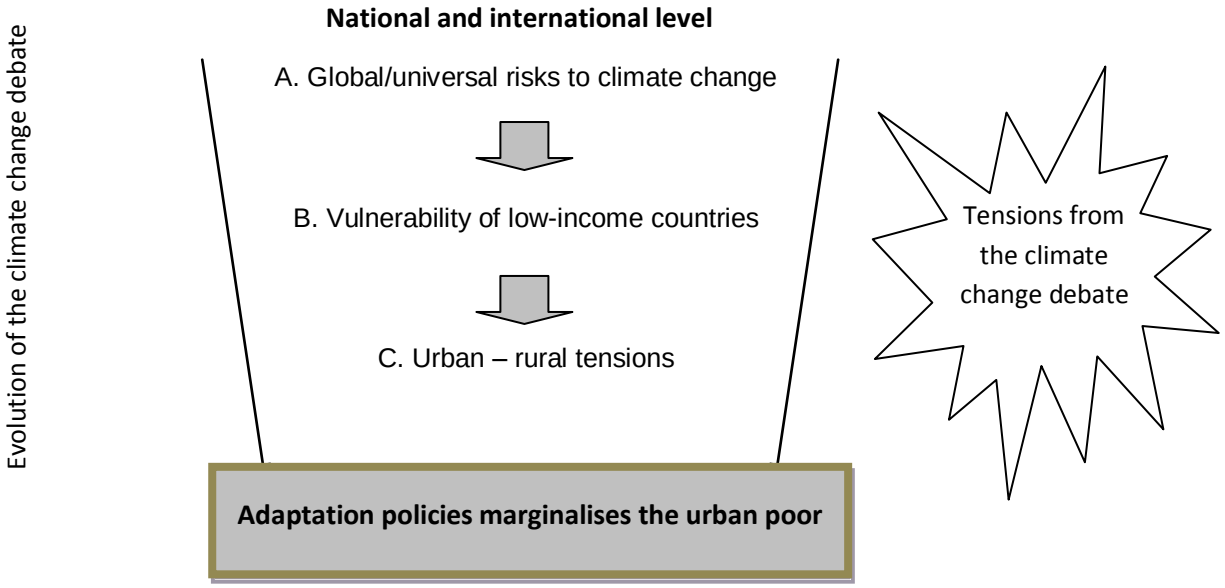
The debate on adaptation in low-income countries has so far focused predominantly on the rural context, looking at the impacts of climate change on the rural poor and their ability to adapt, particularly in relation to agricultural production and livelihoods. Attempts to develop and formulate adaptation strategies at the national and international level are primarily aimed to address the vulnerability of the rural poor.

The following sections analyse how and why the climate change debate has been framed to influence the way adaptation strategies are positioned to deal disproportionately with vulnerability of the rural poor, rather than the urban poor. To understand how and why the tensions developed and persisted, a historical perspective of how climate change debate evolved is presented, as shown in Diagram 2, below. This is relevant because current adaptation policies are influenced by the assumptions and understandings of climate change that have been shaped by past debates. More importantly, this understanding may provide impetus for future adaptation policies to articulate the vulnerability of the urban poor.

Diagram 2 shows the evolution of the climate change debate, starting with the assumption that climate change poses universal risks (A), which is reflected in early mitigation policies.

By the 1990s, there was recognition that low-income countries are more vulnerable to climate change (B). This period also saw the emergence of an awareness of the need for adaptation. More recently, the debate has moved on to accept that particular groups within low-income countries are more vulnerable to climate change and have less capacity to adapt and mitigate. Yet the focus of this recent debate on vulnerability to climate change is on the rural poor within low-income countries, not the urban poor, exposing an urban-rural tension in the debate (C).

Diagram 2 – Tensions developed from the evolution of the climate change debate



Evolution of the climate change debate
A. Universal risks of climate change

When scientific evidence made clear that human activities change the environment on which people's livelihoods depend, and climate change entered the policy arena as a global environmental problem, the initial response was to increase mitigation efforts. This involved reducing greenhouse gas (GHG) emissions and limiting the use of non-renewable energy in order to slow down the rate of climate change.

Initially, the mitigation debate was framed to highlight the universal impacts and risks. This was a result of earlier debates on environmental conservation that emphasised the global impact of environmental degradation caused by human activities and the responsibility of all individuals to protect and sustain natural systems. For example, the World Conservation Strategy in 1977 did not recognise how its recommendations impacted differently on the rich and the poor. Instead, it framed environmental problems as the responsibility of all people, without considering the inequality that exists among them (Adams, 2001, p69).

While climate change is a global issue, contributions to and impacts of climate change are not universal. Recognition of the different contributions and impacts can direct mitigation and adaptation efforts more effectively. The following section shows the evolution of the climate change debate to consider these differences.

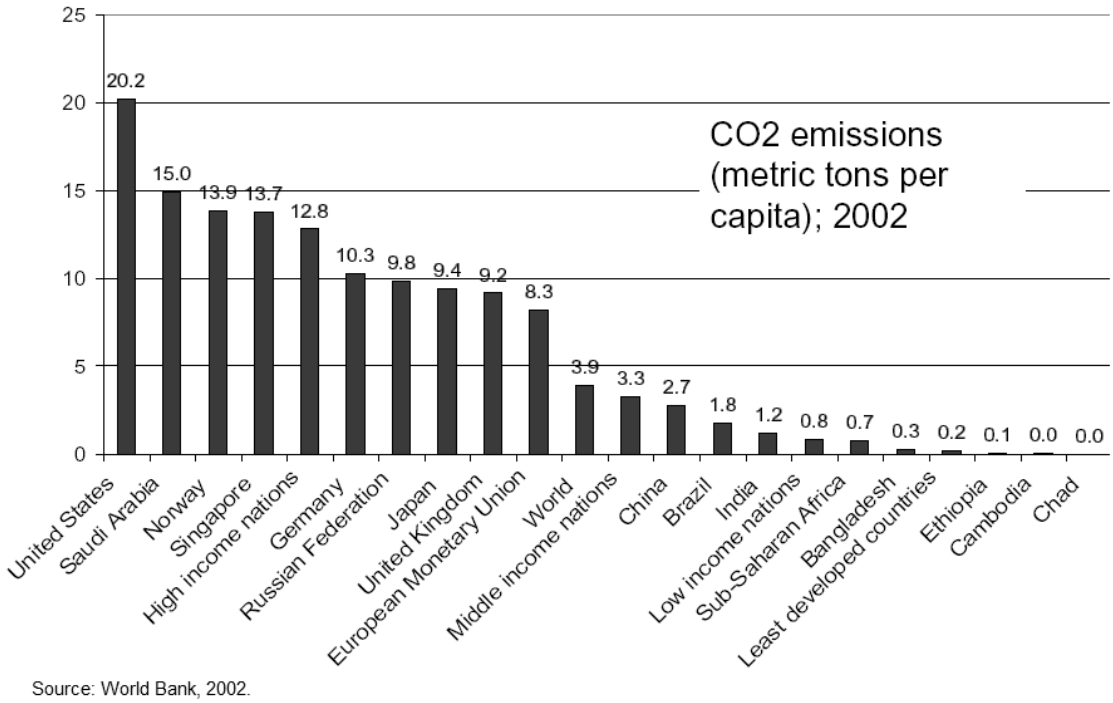
B. Vulnerability of low-income countries

A growing proportion of the literature has recognised the disproportional impacts of climate change on low-income countries. The GHG emissions contribution from low-income countries are relatively low (as shown in Diagram 3, below), but the impact of climate change falls disproportionately highly on them. For example, a recent article from the World Bank highlights that "the poorest countries of the world will suffer the earliest and most because of their geographic location, low incomes and their heavy reliance of climate sensitive sectors" (Okonjo-Iweala, 2008, p12). Similarly, the IPCC assessment reports since 1995 have placed more emphasis on the impacts of climate change on low-income countries and their capacity to mitigate (IPCC, 1995, p3). On a more technical level, the Kyoto Protocol of 1997, signed by 153 countries, recognised that as "developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations" (UNFCCC, 2008c).

While this is a welcome acknowledgement, it does not address the vulnerability of particular groups within a country. Pan (2003, p1) expresses concern that current mitigation policies set at international levels only consider equity between rich and poor countries, and not equity within a country. Therefore "the poor in both developed and developing countries may not be guaranteed their fair allocation of emissions" (Ibid).

Recognising the inequity within countries and within urban areas is important. Compared with smaller urban centres and rural areas, large urban centres in high-income countries have higher levels of consumption and production, increasing rate of fuel-intensive urbanisation and lifestyle. As Satterthwaite (2006, p1) highlights, "urban areas in high income nations are currently the greatest threat, because of their…contributions to greenhouse gas emissions". Based on contributions to climate change, urban areas should be responsible for mitigation. However, within an urban centre, the urban poor contribute very little to climate change compared to high-income groups.

Diagram 3 – GHG emissions contributions comparison



Source: World Bank, 2002.

Unfortunately, the urban poor also bear most of the impacts of climate change and lack the capacity to cope with them, as discussed in the introduction.

C. Rural bias in adaptation strategies

When the debate on adaptation emerged in the 1990s, it benefited from lessons learned in the mitigation debate and immediately recognised the different adaptive capacities between high- and low-income groups within a society. The IPCC acknowledged that poorer groups with less favourable social, economic and political circumstances will be more vulnerable to climate change (IPCC, 1995, p2). More recently, the World Bank also committed itself to building the adaptive capacity of the poorer groups of society (Poverty-Environment Partnership, 2003).

At first sight, this is an encouraging progression from the early debates on universal risks and the vulnerability of low-income countries. However, a closer look reveals that the vulnerability of the poor within the debate is framed primarily in the rural context. Strategies have increasingly been developed to help the rural poor adapt, but equivalent strategies that are equally important for the urban poor are not widely available.

Aggregate level of poverty

There are two possible reasons why the adaptation debate has been framed to focus on the rural poor. Firstly, the "poor" are often aggregated at the national level, which means that the different levels and context of vulnerability within society is not addressed.

For example, in accepting the need for adaptation, the Mozambique government developed a National Adaptation Programme of Action (NAPA). Bambaige (2007, p2) highlights that even though climate change impacts on urban centres are highlighted in the NAPA, the capacity of the urban poor to adapt to climate change is not. There is no attempt to disaggregate the levels and types of vulnerability within Mozambique's society or to develop context-specific adaptation strategies.

Erikson and Kelly (2007, p507) explain that national indicators are a favourable unit of analysis because they are widely available and comparable with other countries. They also say that the national level remains "the main political unit through which emission targets and adaptation policies are formulated and resources ... are assigned".

Eriksen and Kelly recognise that climate change impacts are "unevenly distributed in time and space" within communities and between households within society. For example, the poor groups in society are more likely to lack the capacity to adapt compared with high-income groups. Details of this can be lost when local data is aggregated into national statistics. This is particularly problematic when the national level of poverty is defined by poverty in rural areas.

For example, the World Bank (2007, p48) points out that rural poverty in China constitutes a large share of aggregate poverty and recommends developing these areas to achieve overall poverty reduction. However, China is experiencing rapid urbanisation and the proportion of the urban poor is growing (GHK Ltd, 2004). The aggregate national level of poverty used by the World Bank runs the risk of marginalising the poor in urban areas.

Rural-urban tension

The second reason why the climate change debate has been framed to focus on the rural poor can be found in the rural-urban tension that originated from the "urban bias" thesis influenced by Lipton in the 1970s. Wratten (1995) points out that this thesis blamed urban centres for absorbing the resources needed to reduce poverty in rural areas, resulting in an increased vulnerability of the rural poor. This assumption shaped poverty reduction strategies for much of the 1970s and 1980s.

While adaptation strategies are still in their early stages and not widely adopted at the local level, the rural-urban tension has considerable influence in shaping existing adaptation policies in low-income countries. For example, the adaptation strategies highlighted in the IPCC Fourth Assessment Report (Adger et al, 2007, p722) focus primarily on enhancing the resilience of rural and agricultural systems. This includes expanding the use of traditional rainwater harvesting in Sudan and alternative crops in Bangladesh, assisting farmers to increase crop production in Bostwana and conserving soil and water for upland farmers in the Philippines.

Similarly, the UNFCCC (2008b) developed a database on local adaptation strategies around the world. However, most of the cases, with a few exceptions, focus on adaptation strategies for rural and agricultural systems. For example, reforestation in China and Tajikistan, agro-forestry practices in Grenada, improved irrigation during dry seasons in Bhutan and India, fish cultivation in Bangladesh and drought-resilient crops in India.

In fact, countries such as Bangladesh, the Philippines, China and India have increasing levels of urban population, many of whom live in poverty (Stephens et al, 1996, p31). The urban poor in these areas are exposed to a wide range of vulnerabilities (UN HABITAT, 2001, p18), such as lack of housing, basic services and infrastructure. They also lack political representation and face the risk of eviction. The impact of climate change on the urban poor will only exacerbate their existing vulnerability. Therefore, there is a need to develop equivalent adaptation strategies for the urban poor.

Summary

The evolution of the climate change debate shows that it has been framed to prioritise mitigation over adaptation and to focus on the needs of the rural poor. The debate so far has not deepened policy makers' understanding of developing adaptation policies that reflect the needs of the poor in an urban context.

1.2 THE URBAN POVERTY REDUCTION DEBATE

As stated in the introduction, the other argument of this paper is that the vulnerability of the urban poor to climate change has not been articulated because of the way the urban poverty reduction debate has been framed at the local level. This is important because the debate has influenced, and will continue to influence, urbanisation and the urban planning processes of low-income countries. This section will show why it is important to consider adaptation so that urban planning can better articulate the vulnerability of the urban poor to climate change.

Underlying the urban poverty reduction debate is the perceived tension between the brown and the green agendas. While both are concerned with environmental problems, the urban poverty reduction debate has prioritised the brown agenda that deals will immediate problems, such as water and sanitation, over the green agenda that deals with long term problems, such as climate change. The debate, as seen through the lens of the brown agenda, has influenced urban planning in many low-income countries.

However, the increasing frequency and extremity of climate change related events in recent years have challenged this approach. It reveals that while the brown agenda is important in reducing urban poverty, it cannot effectively address the vulnerability of the urban poor to climate change. While the need for adaptation has gained recognition at the policy level, it has not been integrated into the urban planning process at the local level, where the green agenda has often been marginalised.

This section analyses how and why urban poverty reduction has been framed to create a tension between the brown and green

agendas. The section takes a historical perspective of the urban poverty reduction debate, as shown in Diagram 4, to reveal how the tension has arisen and why it has persisted.

Diagram 4 – Tensions developed from the evolution of the urban poverty reduction debate

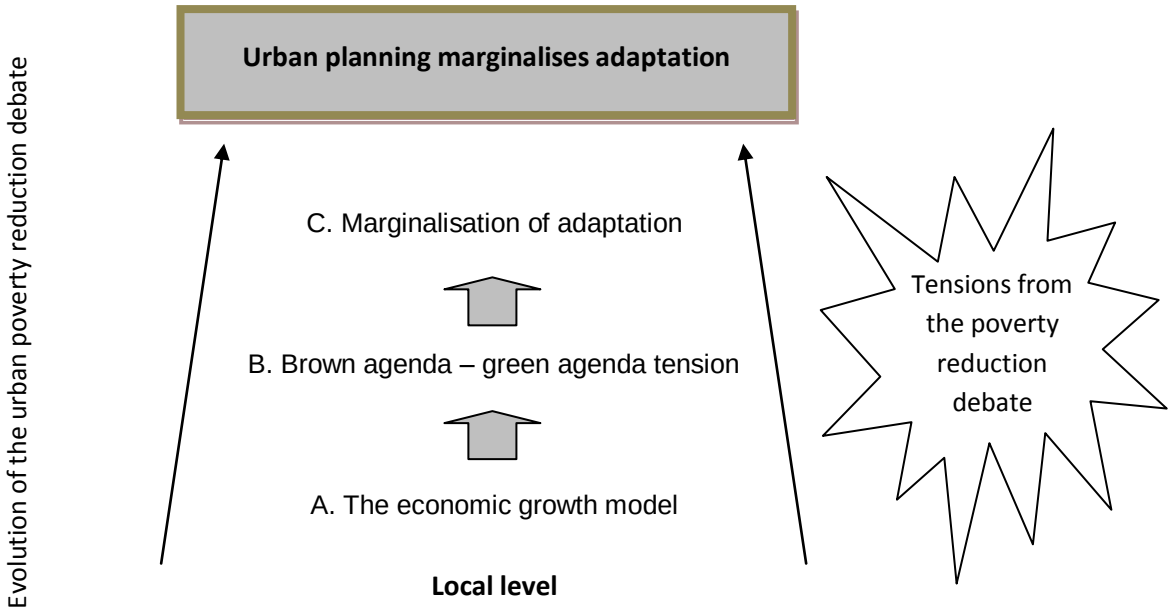


Diagram 4 shows the progression of the urban poverty reduction debate since the 1960s, when it was framed around the economic growth model and the 'trickle down' effect on the poor (A). When this approach failed to reduce mass poverty, the debate refocused onto the basic needs approach in the 1970s and 1980s. This emphasised the brown agenda, addressing the basic needs of the poor such as water and sanitation in urban areas (B). However, the increasing frequency and severity of climate change impacts in the past two decades has challenged this approach, questioning the effectiveness of the brown agenda to reduce urban poverty. Therefore, recent debates have started to consider the green agenda, such as adaptation and mitigation. Unfortunately, adaptation efforts in urban areas have been piece-meal and not connected to the urban planning process (C).

Evolution of the urban poverty reduction debate

A. The economic growth model

In the 1960s, the urban poverty reduction debate was characterised by the economic growth model. The widely accepted assumption was that the benefits of economic growth would 'trickle down' to the poor and eliminate poverty in low-income countries (Allen, 2005, p6). This is evident in the UK Overseas Development Administration (now the UK Department for International Development) White Papers of 1975, which influenced the UK's poverty reduction efforts in low-income countries (Overseas Development Administration cited in Gardner and Lewis, 2000, p20).

Throughout the 1960s and 1970s, the debate moved into the neo-liberal paradigm where economic growth was considered a remedy for poverty. This was a result of industrialisation, technological development, trade liberalisation and globalisation that brought increased standards of living in high-income countries.

Environmental problems, such as air pollution and deforestation, were evident at this time but they were considered to be a necessary by-product of economic growth (Allen, 2005, p6). This can also be attributed to the lack of data and awareness about the causal relationship between environmental problems and poverty (Adams, 2001, p13). Environmental conservation was therefore marginalised from the urban poverty reduction debate.

In the 1980s, empirical evidence revealed that economic growth had not reduced poverty in low-income countries as expected. For example, urban poverty was widespread and urbanisation had been characterised by mass rural to urban migration, unemployment, illegal settlements and lack of basic services (Gilbert and Gugler, 1992, p12). Some have attributed urban poverty to the economic growth model that brought about inequality and the inability of the urban poor to reap any benefits, as suggested by the 'trickle down' effect (Ibid).

At the same time, environmental problems started to raise concerns at the policy level (Adams, 2001, p12). Backed by scientific evidence, the relationship between environmental degradation and poverty was becoming apparent. This was evident in the Brundtland Report, which states that poverty is both a "cause and effect of environment problem" (Adams, 2001, p71).

While this is a welcome development from the environmental point of view, there is a difference between the perspectives of low- and high-income countries on environmental problems. This difference, known as the brown agenda and the green agenda, influenced the debate from the 1980s onwards.

B. Brown agenda vs. Green agenda

Since the 1980s, the urban poverty reduction debate has shifted away from an economic growth model and instead focused on addressing basic needs (Allen, 2005, p6). This is evident in the World Development Report in 1978 (World Bank, 1978) and the Global Report on Human Settlements in 1986 (UN HABITAT, 1986). Both papers focus on the provision of social services. This was triggered by two interrelated factors. Firstly, the 1980s was a period of rapid urbanisation and increase of urban population in South America, Africa and Asia (Gilbert and Gugler, 1992, p12). However, this trend had not been met with an equivalent increase in the provision of housing, infrastructure and services necessary for urban development. This led to the second factor, which is the growing environmental problems, especially for the urban poor. For example, the lack of affordable housing for the growing urban population led to an increase in illegal settlements that were often overcrowded and lacked basic services, increasing the exposure of the urban poor to unhygienic and hazardous environments.

While environmental problems have been part of the debate for some time now, they have been viewed differently from the perspectives of low- and high-income countries. From the perspective of low-income countries, environmental problems are considered through the brown agenda. Conversely, from the perspective of high-income countries they are considered through the green agenda. Both deal with environmental problems but they differ in perspective, approach and timescale, as shown in Diagram 5.

The brown agenda focuses on immediate environmental problems that affect the urban poor. The response to these problems is to take the basic needs approach by improving social and economic conditions. The green agenda deals with the long term environmental problems that will affect people's livelihoods now and in the future, such as climate change impacts caused by GHG emissions. The response requires long-term planning to pursue environmental sustainability, such as conservation, to lessen the impact of climate change on people's livelihoods.

Diagram 5 – A brief comparison between the brown and green agendas for urban centres

Comparison	Brown Agenda	Green Agenda
Objective	Address basic needs	Pursue environmental sustainability
Target group	Urban poor	Future generations
Timescale	Immediate response	Long-term planning
Environmental concerns	Inadequate water supply, poor sanitation, lack of waste management, poor quality infrastructure, lack of political representation	High levels of GHG emissions, use of non-renewable resources, water contamination, increase in temperature, sea-level rise
Responses	Improving social and economic conditions	Ensuring sustainability of natural systems

Source: adapted from McGranahan (2007) and Allen and You (2002)

However, the key urban poverty concern since the 1980s has been the basic needs of the urban poor. Therefore policy measures have focused predominantly on the brown agenda.

There are several reasons why the brown agenda has dominated and persisted in the urban poverty reduction debate. Firstly, there is a perceived difference between the two agendas. The green agenda is considered less urgent for low-income countries, who are more concerned with development and industrialisation (Adams, 2001, p93). These can be achieved more effectively and urgently by the brown agenda. This is evident in the World Conservation Strategy's attempt to draw attention to environmental concerns within the policy arena. It has been noted by Adams (2001, p69) that it lacked persuasion in the 1970s because its emphasis was on the conservation of nature and lacked economic ideas which were considered "fundamental to development".

However, the Brundtland Report in 1987 challenged this argument, claiming that the current approach to development can deplete natural resources and exacerbate poverty (Adams, 2001, p71). This was the first high profile report to recognise the link between the green agenda and poverty and to acknowledge that people's livelihoods, especially the poor, depend heavily on natural resources. However, it did not shift the urban poverty reduction debate from the brown agenda. Somewhat in contradiction to the argument above, the Report also maintains that economic growth and the basic needs approach are crucial to addressing poverty and environmental problems (Ibid, p72). The green agenda remained sidelined in the debate.

The second reason for the persistence of the brown-green tension is that the economic growth model still influences the urban planning process in many urban centres. The brown agenda is considered to complement economic growth and poverty reduction. For example, improving housing and infrastructure can address urban poverty as well as attract investment. In the short term, the brown agenda has the potential to reduce urban poverty and bring economic benefits.

However, it has not been able to address long-term urban poverty as a result of climate change. Most urban planners opt to continue pursuing the brown agenda because they do not want to damage economic prospect in the short term.

For example, the construction and expansion of houses and infrastructure in urban centres in China is carried out in areas deemed attractive for investment, such as coastal areas. Yet these are areas most at risk of rising sea-levels and extreme weather events (Satterthwaite et al, 2007, p33).

The third reason for the persistence of the brown agenda is that urban planning is conducted with incomplete knowledge (Hardoy et al, 2006, p11). Issues in the brown agenda such as water pollution are easier to address because more data is available. However, green agenda issues such as storm and surface water drains are more difficult to document. Moreover, municipal governments still lack understanding of how issues such as climate change are relevant to their work. This makes is difficult for the green agenda to be incorporated into urban planning.

C. Marginalisation of adaptation

Since the 1990s, climate change has been gradually acknowledged within the urban poverty reduction debate. This is because of the increasing frequency and extremity of climate change related events in urban centres that have caused human and economic losses, along with increased awareness and understanding of the issues. For example, the IPCC, established in 1988, produces international reports based on scientific evidence of the impact of human action on the environment around the world.

More recently, the IPCC's 2007 report has brought attention to the urgent need for adaptation. The urban poverty reduction sector has therefore started to share knowledge on the adaptation needs of the poor within the policy arena. For example, the Adaptation Fund, set up as part of the Kyoto Protocol, aims to support adaptation efforts in low-income countries (UNFCCC (2008a).

The recognition of adaptation needs has brought the green agenda closer to the urban poverty reduction debate. However, this progress made at the policy level has not yet been translated into local urban planning processes. There is a lack of adaptation strategies necessary for addressing the vulnerability of the urban poor to climate change. Where adaptation efforts are in place, they are often community-led, isolated and piece-meal, and rarely integrated into wider urban planning processes. There are several reasons why this is so.

Firstly, at the local government level, adaptation to climate change is not integrated into existing resource departments to achieve a holistic response for the urban poor. In many urban centres in both high- and low-income countries, climate change is dealt with as an added dimension to existing environmental work, therefore based within the environment department. However, in the hierarchical structure of local institutions, this department tends to be secondary to existing departments, such as agriculture and economics (Bryant , 1997, p69). Moreover, the issues are difficult to resolve when departments are fragmented and each department deals with one specific issue, rather than addressing climate change as a whole.

For example, in the 1990s, the Burmese Agricultural Department required three million hectares of land to be clear for agricultural purposes. However, its Forestry Department was keen to preserve the forest (Bryant, 1997, p68).

Secondly there is the problem of urban planning policy making in low-income countries. Storey (2005, p1) points out that the urbanisation process in Asia is characterised by the failure of regulations, a lack of importance given to environmental concerns

and an orientation towards economic growth and basic needs, as explained under headings A and B above. This leads to conflicting policies, as seen in the Burmese example, which often result in the inability of urban planning to address environmental problems for the urban poor, including their adaptation needs.

Summary

The evolution of the poverty reduction debate shows that it has been framed to prioritise economic growth and the brown agenda. While there is an increasing recognition of the green agenda in the debate at the policy level, this has not been reflected in the urban planning process. Therefore climate change and the adaptation needs of the urban poor remain marginalised.

1.3 ADDRESSING THE TENSIONS

So far, this paper has provided an analysis of how and why tensions have developed and persisted within the climate change and poverty reduction debates through the past few decades. This has shed some light on why current adaptation efforts at the national and international level have rarely articulated the vulnerability of the urban poor. Similarly, this analysis has explored why urban planning at the local level has not articulated the adaptation needs of the urban poor.

With a better understanding of the tensions, it is worth considering how they can be overcome by urban interventions. At the policy level, there is an increasing international recognition that both climate change and poverty have a causal relationship in terms of their impacts on the urban poor. For example, the IPCC (2007, p19) point out that the vulnerability of the poor result from "current climate hazards, poverty and unequal access to resources, food insecurity, trends in economic globalisation, conflict and incidence of diseases such as HIV/AIDS." More specifically, there is a realisation that climate change can worsen the existing vulnerability of the poor. For example, the Poverty-Environment Partnership (2003, pIX) acknowledges that "climate change is superimposed on existing vulnerabilities ... [and] will further reduce access to drinking water, negatively affect the health of poor people and will pose a real threat to food security in many countries in Africa, Asia and Latin America."

The integration of adaptation into poverty reduction efforts is an approach that has the potential to address both the brown and green agenda and to give more emphasis to the adaptation needs of the poor in urban areas. Poverty-Environment Partnership (2003), Schipper and Pelling (2006), IPCC (2007) and Satterthwaite (2008) are examples of literature that are advocating this approach. For instance, the IPCC report (2007, p65) highlights that adaptation interventions can be integrated within poverty reduction strategies, such as water resource management and coastal defence, to offer a holistic approach to reducing the vulnerability of the poor in the face of climate change. The report noted that such efforts are particularly relevant in urban areas in low-income countries facing rapid population growth (IPCC, 2007, p364).

Unfortunately, there are limited documented examples of adaptation interventions at the local level, as this is still a novel concept in low-income countries (Satterthwaite, 2008, p11). The two case studies in the subsequent chapters are rare examples of interventions at the urban level that have the potential to address the tensions in this chapter.

The first case study, on Durban, looks at a municipal adaptation strategy initiated by the city's local government. The chapter explores why adaptation is being integrated into the long-term urban planning process and how the vulnerability of the urban poor to climate change was identified. The second case study looks at community-led adaptation efforts in the Philippines. It offers an innovative approach in the form of locally-driven

initiatives to address the "root causes of vulnerability" (Allen, 2006, p82).

When analysing the case studies, the following questions will be addressed:

1. What was the impetus for developing an adaptation response to climate change?
2. Why was it necessary to develop a response?
3. Have the tensions identified in Chapter One persisted in this area?
4. To what extent is the intervention addressing these tensions, or has the potential to do so?
5. To what extent can the vulnerability of the urban poor to climate change be addressed by this approach?

Asking these questions will allow a comparison between the two case studies to understand how the interventions can address the tensions analysed this chapter. As adaptation interventions should be context-specific, both case studies will consider the political and social conditions that have led to the development of an adaptation response. The comparison will also explore the wider potential of integrating adaptation interventions into the urban planning process as a way of reducing poverty.

2. MUNICIPAL ADAPTATION STRATEGY – DURBAN, SOUTH AFRICA

The development and formulation of a climate change adaptation strategy by Durban's municipal government is taking place in a national and international setting that is plagued by tensions, such as the priority of mitigation over adaptation and the focus on the rural poor over the urban poor. Its urban planning process is also facing tensions in the urban poverty reduction debate that places emphasis on economic growth and prioritises the brown agenda over the green agenda.

In spite of the tensions, Durban is formulating a strategy that aims to mainstream adaptation into its urban planning process. This is being led by the eThekwini municipal government[2]. In doing so, the city is responding to the vulnerability of the urban poor to climate change. While the strategy has not yet been fully developed or implemented, it demonstrates the potentials and constraints for local government to resolve the tensions in the debate and address the needs of the urban poor.

This chapter looks at how Durban and its urban poor are affected by climate change. It considers the political climate of Durban in the post-apartheid era and how this has influenced the municipality's adaptation response. The analysis will reflect on the development and persistence of the tensions from Chapter One. It will also explore how the municipality can potentially address them by integrating adaptation into its wider urban planning process.

2.1 BACKGROUND TO DURBAN

As the largest port and city on the east coast of Africa, Durban is a metropolitan area of South Africa within the Kwazulu-Natal province with a population of 3.4 million (Statistics South Africa, 2007, p12). The city is the busiest port in Africa, accounting for 55 per cent of the economic output for the province and 9 per cent of GDP for South Africa.

eThekwini Municipality is one of South Africa's most competent local authorities at the metropolitan level, according to Robbins (2005, p2). Yet, poverty reduction remains a challenge. An estimated 44 per cent of the population in Durban live in poverty (SARPN, 2004) and one third lives in informal settlements (Robbins, 2005, p24). This can be attributed to the recent political changes in South Africa.

During the apartheid era, there was widespread inequality between white and black Africans. The black Africans lived mainly

[2] eThekwini is accepted as the Zulu name for Durban. (Koopman, n.d.)

in informal settlements in the periphery of urban centres with limited access to basic services. Moreover, there was limited local governance and municipal authorities often distributed resources and land unequally to favour white African elites. (Sida, 2007, p8).

Since the end of the apartheid in 1994, local governments' role has been restructured and their boundary jurisdictions have been reorganised. Municipal governments are mandated to address inequality and a backlog of service delivery for the poor (Robinson, 2008, p78). For example, a national programme of land reform was initiated in 1994, which gives local government the power to transfer land rights to the landless population (UN OHCHR, n.d, p1).

In the case of Durban, the city boundary has expanded to encompass rural, peri-urban and urban areas. eThekwini Municipality has focused on addressing inequality by improving service delivery to the poor in these newly incorporated areas (Robbins, 2005, p25). Since 1994, the municipality has promised to deliver improved services, economic growth and better land-use management. However, it faces a significant challenge in addressing the legacy of inequality from the apartheid era as poverty prevails (UN HABITAT, 2003, p219). It also faces increasing climate change impacts that will exacerbate the existing vulnerabilities of the urban poor.

2.2 CLIMATE CHANGE CHALLENGES

The impacts of climate change on South Africa have been revealed in the South African Climate Change Response Strategy launched in 2004. The strategy makes explicit how these impacts can affect the economy, health, livelihoods and social structure of the population.

The eThekwini Municipality is especially concerned with the climate change threat to biodiversity. Roberts (2008a) states that Durban's biodiversity is central to the development of the city, as resources from the natural systems provide for people's livelihoods. As a coastal city, Durban is also at risk of rising sea-levels, flooding and excess rainfall (Roberts, n.d). As a result, urban infrastructure and housing could be damaged.

According to Hounsome (n.d., p2), this is particularly problematic for the urban poor for several reasons. Firstly, they live in areas that are prone to hazards caused by climate variability. Secondly, their quality of housing and infrastructure is very poor. Thirdly, the urban poor lack basic services, such as adequate provision of water and sanitation and waste disposal. For example, when flooding occurs, the areas where the urban poor live are most likely to be affected and the structure of their houses will not withstand the impact of flood water. Moreover, unmanaged waste in the form of open sewage on the streets could contaminate the water supply and increase the risk of water-borne diseases. These are particularly problematic for the urban poor because they are exposed to these risks on a daily basis and lack access to adequate healthcare (Department of Environmental Affairs and Tourism, 2004, p4) and other social security benefits.

2.3 MUNICIPAL ADAPTATION STRATEGY

The first attempt by eThekwini Municipality to deal with growing environmental problems was in 1994, when it adopted the Local Agenda 21 (LA21) in pursuit of sustainable development. This was a result of international, national and local political changes. In 1992, the Earth Summit raised awareness of climate change issues at the international level. At the national level, the post-apartheid era enabled restructured local government to take on responsibility for environmental management. Locally, the eThekwini Municipality created an Environmental Management Department (Roberts and Diederichs, 2002, p8).

From the perspective of environmental sustainability, Durban's involvement in LA21 was a positive policy decision because it aims to integrate the environment into the city's

development priorities. However, two factors have prevented its further development and highlight the tensions in the urban poverty reduction debate. First, since the ending of apartheid, there has been a political push to provide basic needs for the urban poor and boost local economic development. LA21 is still considered by the municipality as secondary to these two priorities (Roberts and Diederichs, 2002, p14). The brown agenda and economic growth have therefore been the dominant focus, reflecting the tensions in the debate discussed in Chapter 2.

Second, on a more technical level, the Environmental Management Department responsible for implementing LA21 within the municipality is not integrated into other sectors of the city's urban planning process. The problem with this is that "location within an environmental department... brings with it the danger that these processes will be seen as 'green' or anti-development" (Roberts and Diederichs, 2002, p25). This shows that the municipality is unaware of or unconcerned with the causal relationship between the environment and poverty, which shows the persistence of the tension in the urban poverty reduction debate.

Despite the low priority given to environmental sustainability from the municipality as a whole, the Environmental Management Department continues to raise the issue of climate change. In 2001, Durban took part in the Cities for Climate Protection (CCP) campaign managed by the International Council for Local Environmental Initiatives (ICLEI, 2008). The aim of the Campaign was to promote mitigation efforts such as energy efficiency and reduction in GHG emission at the local level (Satterthwaite et al, 2007, p56) and demonstrate to Durban's municipal officials how local actions can have a global impact.

However, the CCP did not fully convince municipal officials of the magnitude of climate change problems in Durban. According to my recent interview with Roberts (2008a), municipal officials were unable to relate global climate change impacts to their own area of work. This demonstrates that for countries such as South Africa that contribute very little to climate change, mitigation is not always a priority. This casts doubt on the assumption in the climate change debate that mitigation is a universal responsibility.

By 2004, two key events had led to an increased interest in adaptation needs within the municipality. At the national level, a climate change response strategy was developed by the South African Government. This strategy provides priority actions for government departments to consider climate change mitigation and adaptation in their areas of work, namely on waste management, pollution, water and energy. In the same year, the municipal Environmental Management Department initiated a "Climatic Future for Durban" project to increase officials' understanding of the impact of climate change on Durban (eThekwini Municipality, 2007). This involves highlighting climate change impacts on key sectors of the municipality, developing responses to tackle the problems and incorporating climate change into long-term urban planning (Hounsome and Iyer, 2006, p1 and Roberts (b), 2008).

2.4 ADDRESSING THE TENSIONS

Economic growth and the brown agenda are still considered priorities in Durban and climate change mitigation efforts are still the dominant debate at both the local and national level (Department of Environmental Affairs and Tourism, 2004 and eThekwini Municipality, 2006, p23-31). However, the issue of climate change adaptation is beginning to take shape in Durban through the continuous effort of the Environmental Management Department.

The Climatic Future for Durban project and the Integrated Development Plan (IDP) 2006-2011 have both demonstrated municipal officials' increasing awareness and understanding of climate change. The Climatic Future for Durban project has been instrumental in

informing municipal officials of the need to integrate adaptation efforts into their sector of responsibility, such as human health, tourism and business or water and infrastructure. For example, the health authority has been particularly proactive in exploring the impact of climate change on malaria distribution (Satterthwaite et al, 2007, p56). Similarly, the IDP is showing progress within the municipality for efforts to integrate climate change into the wider urban planning process. The next section explores the potential of these initiatives to address the tensions in the urban poverty reduction and climate change debates to better articulate the vulnerability of the urban poor to climate change.

Urban poverty reduction debate

The Headlining Adaptation report from phase two of the Climatic Future for Durban project draws connections between economic growth and climate change, potentially addressing one of the tensions in the urban poverty reduction debate. The Headlining Adaptation report points out that "planning and development of the city has not, however, taken into account the local impacts of climate change ... [and] ... this could have disastrous ramifications for economic development" (Hounsome and Iyer, 2006, p26-27). The IDP has also recognised these links. It places an economic value on the city's ecosystem, estimated at £67 million (eThekwini Municipality, 2006, p22) and claims that "certain development cannot work in harmony with the natural asset" (Ibid).

By disputing the way the climate change debate has been framed, the Report and the IDP imply that economic growth and urban poverty reduction cannot be achieved in isolation from climate change mitigation and adaptation.

The stimulus for addressing the tension in the urban poverty reduction debate came from municipal officials. The Headlining Adaptation report points out that "dealing with hazards in a narrow sectoral sense may fail because it is insufficiently integrated with the development needs of the poor" (Hounsome and Iyer, 2006, p28-30). According to Roberts (2008b), municipal officials have gained a better understanding of the impact of climate change on their work and the interventions needed to rectify these failures. Even though the focus at the national level is still dominated by economic growth and urban poverty reduction, the research and awareness-raising from the report has begun "sensitising the government to the possible severity of impacts from the increased frequency and/or intensity of extreme weather events" (Satterthwaite et al, 2007, p57).

However, there are difficulties in implementing adaptation at the local level. The Headlining Adaptation report states that the conflicting priorities that exist between municipal departments can be problematic (Hounsome and Iyer, 2006, p26-27). For example, strict environmental control and regulations along the coastal area can deter businesses from investing in tourism. Similarly, while the IDP stresses the importance of linking economic growth and climate change, it does not specify how this can be achieved. For example, the IDP touches on the green agenda by generally expressing the need to work within the "carrying capacity of the land" and to use environmental experts to advise on infrastructural implications (eThekwini Municipality, 2006, p23). However, it does not specify what land-use planning and regulations are needed to take account of the climate change impacts on future infrastructural and housing development. The challenge remains in mainstreaming the green agenda into Durban's urban planning process.

Climate change debate

The second phase of the Climatic Future for Durban project – Headlining Adaptation – directly acknowledges the relevance and urgency of adaptation in Durban, potentially addressing the disproportionate focus in the climate change debate on mitigation. A possible reason for this is that mitigation

efforts, aimed at tackling global impacts such as rise in temperature and GHG emissions, may be too remote for local government. It was suggested by Roberts ((a), 2008) during my interview that municipal officials have been unable to make global impacts of climate change relevant to their own area of work.

On the other hand, municipal officials are able to relate more to adaptation because it directly tackles impacts of climate change that affect their area of responsibility, as evident in the Headlining Adaptation report of the Climatic Future for Durban project (Hounsome and Iyers, 2006, p1). For example, Durban's recent storms and high tides have damaged infrastructure and property worth over £4 million (Satterthwaite et al, 2007, p56).

However, adaptation needs are less articulated in the IDP. In spite of calling for an integrated approach to adaptation efforts (eThekwini Municipality, 2006, p22 and p28), the implementing projects highlighted in the IDP focus primarily on mitigation efforts, such as reducing GHG emissions, developing renewable energy sources and encouraging recycling. This reveals a conflict between municipal policies that can be an obstacle to adaptation being fully integrated into urban planning.

Another tension in the climate change debate is the rural bias in adaptation efforts. However, eThekwini Municipality rarely distinguishes between rural and urban areas. For example, a substantial section of the IDP is dedicated to the environmental impact on the poor (eThekwini Municipality, 2006, p20) and recognises the importance of providing the poor with access to "housing, water, electricity, rates rebates and improving food security programmes" (eThekwini Municipality, 2006, p57). The Headlining Adaptation report also underlines the importance of responding to local needs in both rural and urban context (Hounsome and Iyer, 2006, p10). For example, the report draws attention to water scarcity, health risks, and infrastructural risks as the key impacts of climate change. In both these examples, no distinction is made between the rural and urban poor, despite the fact that these issues affect the two groups in different ways.

The inseparable nature of rural and urban areas may be attributed to the expansion of Durban in the post-apartheid years to encompass rural, urban and peri-urban areas. The municipality is deeply aware of the interdependency between the rural and urban sectors and their contributions to Durban's overall development (Roberts (2008a).

At first glance, the municipality has potentially addressed the rural-urban tension by not distinguish between rural and urban areas. However, the danger of this is that there is little evidence that the municipality's adaptation efforts will address the different types of vulnerability for rural and urban poor respectively. The Headlining Adaptation report highlights some urban-specific adaptation measures such as: water conservation (Ibid, p10); urban drainage and storm water run-off improvements; and water conservation for urban agriculture (Ibid, p13-14). However, other adaptation measures are not distinguished in such a way. There is a danger that by not distinguishing between the rural and urban poor, the municipality will portray them as a single group that is vulnerable to climate change, rather than meeting the needs of the rural and urban poor based on their specific vulnerabilities.

Summary

The Environmental Management Department has made considerable effort to integrate adaptation in its wider urban planning processes. This demonstrates a recognition by local government of the value of integrating adaptation into urban poverty reduction efforts, which can potentially address the vulnerability of the urban poor to climate change. However, the department still faces the challenge of enlisting the municipality as a whole to mainstream adaptation into its urban planning

process. It also needs to consider more clearly the specific adaptation needs of the urban and rural poor.

3. COMMUNITY-LED ADAPTATION – THE PHILIPPINES

This case study on the Philippines looks at the potential of community-led initiatives to enhance the ability of the urban poor to adapt to climate change. It aims to highlight an alternative approach to the Durban case study on municipal adaptation strategies. However, a direct comparison between a specific urban centre in the Philippines and Durban in South Africa is not possible. Firstly, there is a lack of empirical evidence from any one urban centre in the Philippines to substantiate a comparison. Secondly, community-led adaptation initiatives are not widely documented because the research in this field is relatively new. However, this case study will draw on community-led initiatives from different urban centres in the Philippines in order to provide an insight into how this mechanism has addressed, and has the potential to address, the adaptation needs of the urban poor.

This chapter looks at how the Philippines and its urban poor are affected by climate change. It examines the Philippines' political climate from the 1960s onwards, and how this has influenced community-led initiatives to tackle climate change. The analysis throughout reflects on the development and persistence of the tensions in the debates from Chapter One. It will explore how and why the community has addressed these tensions and the constraints they face in sustaining their efforts.

3.1 BACKGROUND TO THE PHILIPPINES

The Philippines is an archipelago made up of 71,000 islands and consisting of over 30,000 km of coastline (Capili et al, 2005, p1). It has a population of 92 million (CIA Factbook, 2008), 48 per cent of which live in urban areas (Mogelgaard, 2004, p3). The country depends heavily on the natural system for its economic activities and livelihoods, especially along the coast for farming, fishing and tourism (Perez, n.d.). However, these activities are in decline because of increasing water pollution, soil erosion and deforestation as a result of industrialisation in the 1960s and 1970s.

After emerging from Spanish colonial rule in 1898, the country experienced a reasonable rate of economic growth (Balisacan, 2003, p3). However, since the 1960s, poverty in the Philippines has steadily increased, partly as a result of widespread corruption and economic slowdown under the Marco presidency. The poverty level, as documented by the ADB (2005, p17), was close to 40 per cent in 2000. The government's attempts at reducing poverty from the 1960s onwards range from pursuing industrial growth, trade liberalisation, rural development, delivery of basic needs and improved urban planning (Balisacan, 2003, p312-315). However, with some exceptions in the 1990s, these efforts have not been successful in reducing poverty.

Interestingly, this period also saw the emergence of civil society in the political realm (Balisacan, 2003, p67). For example, 'people's power' forced Presidents Marco and Estrada from office after they were charged with corruption in the 1980s and 1990s respectively (BBC News, 2007). The civil society movement is strong in the Philippines, boasting the highest number of NGOs per capita in Asia (Wurfel, 2003, p215). These organisations have been active in representing the community's interest and offering innovative solutions to problems such as environmental degradation (Broad, 1993, p18).

3.2 CLIMATE CHANGE CHALLENGES

Climate change is an ongoing problem for the Philippines. The country is experiencing increasingly frequent and extreme natural disasters, including landslides, storms and flooding. According to the International Federation of Red Cross and Red Crescent Societies (n.d.), typhoons in the Philippines killed 13,000 people and cost the economy

close to £1.5 billion in damage in the 1980s and 1990s.

Half of the country's total area and over 80 per cent of its population are vulnerable to climate change impacts (Rincón and Virtucio, 2008, p9). The World Bank (cited in Rincón and Virtucio, 2008, p9) also estimates that 80 per cent of its GDP comes from areas at risk from climate change.

In addition to these challenges, the country is already experiencing a high level of environmental problems in urban centres. More than one third of the urban population live in informal settlements that are environmentally degraded and lack basic services, land security and infrastructure (VMSDFI, 2001, p73). The urban poor are also exposed to water and air pollution, sewage systems failure, landslides and flooding (Mogelgaard, 2004, p4). This demonstrates that "natural hazards contribute to further degradation and poverty, thus, creating a vicious cycle of poverty, environmental degradation, and vulnerability to natural disasters" Rincón and Virtucio (2008, p9).

The national and local governments have attempted to respond to these increasing climate change related problems. For example, in 1991 the national government established the Philippines Strategy for Sustainable Development, which aims to address environmental concerns such as deforestation and air and water pollution (Rincón and Virtucio, 2008, p23). In the same year, it took part in the Agenda 21 and set up an inter-agency committee on climate change.

By 1994, the government had signed the Kyoto Protocol, committing itself to international GHG emission targets. More recently, the Medium Term Philippines Development Plan (MTPDP) for 2004-2010 mentions mitigation needs in the environment, energy and agricultural sectors. However, these responses still reflect the tensions highlighted in Chapter One. Firstly, they focus on mitigation efforts rather than adaptation. Secondly, the Philippines' development trajectory has always focused on "poverty alleviation and economic growth" (Lasco et al, 2008). This will be analysed later in the chapter.

At the local level, municipal governments are mandated to develop disaster management plans (World Bank, 2005, p33). However, local government adaptation efforts focus primarily on relief and rescue operations that are often expensive, inadequate and short term (World Bank, 2005, p33 and Faustino, 2007). Local government has not considered the preparedness approach to adaptation that deals with the long-term impact of climate change. This reflects the tension between the short-term brown agenda and the long-term green agenda. Again, this will be analysed later in the chapter.

3.3 COMMUNITY-LED ADAPTATION

According to Kofi Annan (United Nations, 1999), previous Secretary-General to the United Nations, "Much has been learnt from the creative disaster prevention efforts of poor communities in developing countries... Prevention policy is too important to be left to governments and international agencies alone. To succeed, it must also engage civil society". In the absence of adaptation efforts from the national and local government in the Philippines, the adaptive needs of the urban poor are being addressed by community-led initiatives. This is because the urban poor already spend much of their time adapting to changing conditions, such as evictions, loss of employment and environmental degradation (Satterthwaite et al, 2007). In the case of climate change, Faustino (2007) noted that a community in Cavite City is already adapting to rising sea-levels and flooding by building houses on stilts, strengthening the physical structure of houses, engaging in alternative income-generating activities and buying assets that could be more easily sold in the event of a disaster.

Community organisations can also mobilise the urban poor community to adapt. For example, Buklod Tao (People Bond Together) is a Filipino community organisation established in 1997 to help vulnerable communities deal with environmental conflicts such as the impact of industrial power plants on agricultural land (Victoria, 2003, p5). In the face of climate change, it has worked with communities to set up flood warnings and relief assistance activities that have prevented loss of life and protected assets.

In spite of the benefits that community-led initiatives bring, they are costly, piece-meal and not formally recognised. For example, Cavite City's community adaptation as described above is individualistic and lacks financial and political support from local government to develop a preventive measure that is sustainable on a community-wide scale. Also, increasing community responsibility without the necessary support, such as knowledge, resources and funding, could add to their existing vulnerability (Allen, 2006, p97).

As a result, there is increasing demand for local government to support communities to develop adaptation strategies. As Allen (2006, p97) points out, "civil society-government partnership arrangements may make it easier for those who do have the capacity to tackle bigger issues". This implies that partnership is important because climate change impacts require long-term preventive adaptation measures, often on a large scale. This is usually the responsibility of the local government. However, they alone cannot achieve this. It requires the local communities' knowledge and understanding of adaptation measures. Therefore, the role of the local government should be to support and work with local communities to develop a sustainable adaptive capacity (Satterthwaite, 2008, p17).

3.4 ADDRESSING THE TENSIONS

The Philippines National Red Cross (PNRC) has been instrumental in supporting community-government partnership adaptation and mitigation. Since 1994, it has focused on supporting vulnerable communities by increasing their resilience and capacity to tackle the impacts of climate change. This is conducted through a participatory process, where local communities develop and implement adaptation and mitigation plans in partnership with local government (Kokawa, 2003, p126 and Allen, 2004).

This section will examine the content of community-led initiatives such as the PNRC and explore how and why they have addressed the tensions in the climate change and urban poverty reduction debates.

Urban poverty reduction debate

Since the 1960s, poverty reduction programmes in the Philippines have focused heavily on economic growth and the brown agenda. This reflects the tension in the urban poverty reduction debate. For example, under the presidency of Ramos and Arroyo in the 1990s and 2000s, the poverty reduction effort has been focused on trade liberalisation, the delivery of basic services and increasing employment (Balisacan, 2003, p314-315). This is a response to increasing poverty in the Philippines since the 1980s. At the local government level, the response to climate change impacts has been focused on short-term relief efforts rather than long-term preparedness.

Community-led initiatives have the potential to fill this gap and support long-term preparedness adaptation efforts at the local level. For example, the PNRC mobilises poor communities by tapping into local knowledge and resources to map vulnerability and local hazards. It offers training to community members, allowing them to work with local government officials to draw up action plans and implement adaptation projects (IFRCRCS, n.d. and Victoria, 2003). In addition to relief

efforts, the PNRC works with communities to develop long term preparedness and mitigation strategies (IFRCRCS, n.d.).

This type of mobilisation is important because it can achieve significant progress in adaptation and pro-poor urban poverty reduction (Moser and Satterthwaite, 2008, p22), bridging the gap between the brown and the green agenda. For example, learning new skills such as developing action plans can increase an individual's capacity to tackle similar problems in the future with more confidence. Likewise, partnership work between local officials and the community can improve working relations by demonstrating community knowledge and understanding of local issues to government officials. This can pave the way for future partnership work to addressing long-term adaptation, such as developing affordable houses in low-risk areas and climate change resistant infrastructure. It may also achieve progress in other poverty reduction efforts such as water and sanitation provision and tenure.

For example, Allen (2004) describes how a forest programme in Southern Leyte that involves the Philippines government and the local community has successfully bridged the brown and green agenda. The project involves identifying a plot of land that is prone to illegal logging and allocating it to the community for management. Under this scheme, 80 per cent of the plot is designated for re-growing trees and plants and 20 per cent for growing cash crops as a source of income for the community. This enables the community to monitor illegal logging in the forest, learn new farming skills with resources provided by the government and generate income by selling cash crops. It has also reduced the disaster risks for neighbouring communities such as flooding and landslides by preventing soil erosion, digging irrigation canals and growing drought-resistant rice varieties. The project has built community resilience to disasters, reduced poverty and prevented illegal logging that damages the natural system.

Climate change debate

While the Philippines Government has increasingly recognised climate change and developed policies to tackle the issue, it focuses on mitigation rather than adaptation as described above, reflecting the tension in the climate change debate. Lasco and others (2008, p10) explain that the reason for a lack of government attention on long-term adaptation is that policy makers in the Philippines are focused on short-term relief and damage control of frequent climate change impacts. "Thus their attention is focused on the here and now rather on a predicted climate change in the future" (Ibid).

However, the inherent nature of community-led initiatives leans more to adaptation than mitigation. For example, "[local communities] use coping and survival strategies to face and respond to the situation long before outside help from NGOs or the government arrives" (Victoria, 2003, p1). Local communities are frequently reporting the impacts of climate change in their locality, and responding to the changing environment as best they can (Blanco, 2006, p141). The poor who face the impacts of climate change at the community level can therefore offer appropriate adaptation measures that are lacking from the government.

On the rural-urban tension in the debate, even community-led initiatives in the Philippines have focused on addressing the vulnerability of the rural poor. For example, the integrated community disaster planning programme (ICDPP) developed by the PNRC has assisted mainly rural communities (IFRCRCS, n.d.). While there is some recognition of the detrimental effect of climate change on the urban poor living in informal settlements (World Bank, 2005, p21), the rural poor make up a larger proportion of people living in poverty in the country (World Bank, 2005, p13 and Rincón and Virtucio, 2008, p13). There is a general assumption that they are more vulnerable to climate change.

In spite of the rural bias, the community adaptation efforts in the Philippines are applicable to the urban context. Firstly, the conventional divide between rural and urban areas is becoming blurred in some parts of the Philippines (Kelly, 1998, p36). For example, the coastal city of Cavite has the status of an urban centre, but the local economy continues to depend largely on agricultural activities such as fishing. This is because of policies that convert traditionally agriculture areas to industrial areas, leisure centres and public institutions such as hospitals and schools.

Secondly, community-led initiatives rely on local knowledge and understanding of adaptation needs, not on specific techniques and response mechanisms. Therefore, community-led initiatives can be used in different contexts. For example, the urban centre of Cavite City is vulnerable to frequent cyclones and sea-level rise. As a result, 40,000 people have been displaced between 1994 and 2001. (Satterthwaite et al, 2007, p64). Community-level adaptation has enabled the urban poor to adapt on a small scale, as noted earlier (Faustino, 2007).

Slum dwellers' federations are examples of community-led initiatives in urban centres of low- and middle-income countries that have addressed the vulnerability of the urban poor (Moser and Satterthwaite, 2008, p22). For example, the urban poor have been involved in upgrading and securing tenure in Thailand by finding low-risk sites for housing. These organisations have mobilised the community to use local knowledge and resource for developing solutions to urban problems, including climate change impacts.

Summary

Community-led initiatives, such as those supported by the PNRC, have been instrumental in empowering the urban poor to develop solutions to tackle the impacts of climate change. They also have the potential to strengthen the adaptive capacity of the urban poor, not only to climate change but to other social and economic problems, contributing to overall poverty reduction. However, the challenge is to enlist local government support and to integrate community-led adaptation into the urban planning process, so that the adaptive capacity of the urban poor can be sustained.

CONCLUSION

The proposition of this paper states that the vulnerability of the urban poor to climate change is not articulated in adaptation efforts due to tensions in the way climate change adaptation and urban poverty reduction have been framed within the policy arena.

The paper has analysed how and why the debates have been framed to create these tensions. It has also explored how the tensions can be addressed at the local level to ensure the vulnerability of the urban poor can be better articulated in adaptation policies and urban planning in the future.

Summary

On the tensions in the climate change debate, the historical trajectory of the debate initially focused predominantly on mitigation efforts rather than adaptation. As the debate progressed, the importance of adaptation was recognised. However, the focus remains on developing adaptation policies that articulate the vulnerability of the rural poor rather than the urban poor.

This is because of a lack of information and awareness about the impacts of climate change in the early debate. However, when information is available, there is a tendency for the debate to aggregate the responsibilities and impact of climate change, rather than seek to understand how climate change impacts on different social groups. The persistence of the tensions is also a result of a general assumption that the rural poor are more deprived of resources and capacity to adapt than the urban poor.

On the tensions in the poverty reduction debate, the historical analysis reveals that economic growth dominated the early debate. As the debate progressed, the brown agenda gained prominence. While climate change and other environmental problems have been evident throughout the debate, they have been largely marginalised, especially within urban planning processes at the local level.

This is because of the influence of neo-liberal thinking on the debate, whereby industrial and technological developments in high-income countries have led to an emphasis on economic growth as the key solution to poverty in low-income countries. When this failed to reduce poverty in urban centres, the debate instead focused on the delivery of basic and immediate needs to the urban poor, stressing the short term brown agenda over the long term green agenda. This tension persisted because of a general assumption that the brown agenda can boost economic growth. There is no incentive to focus on the green agenda because of the perception that it will damage economic prospect in the short term.

However, the case studies of Durban and the Philippines have revealed that these tensions can be addressed. In Durban, the eThekwini Municipality has made considerable efforts to integrate adaptation into its wider urban planning processes, recognising the link between adaptation and urban poverty reduction efforts. In the Philippines, community-led initiatives have been instrumental in building the adaptive capacity of the urban poor, not only to climate change but also to other social and economic problems, thus contributing to overall poverty reduction.

In spite of the potential found in Durban and the Philippines, it is important to note that these are isolated cases that have demonstrated innovative approaches to addressing the tensions revealed in this paper. Durban is still developing its adaptation strategy and community-led initiatives in the Philippine are not widely adopted or documented. Therefore, it is too early to evaluate their impact or effectiveness.

Looking ahead

At the policy level, the challenge of articulating the vulnerability of the urban poor remains and the tensions between the climate change and urban poverty reduction debates persist.

This paper does not provide recommendations on addressing these tensions, nor does it aim to offer a mechanism that can address the vulnerability of the urban poor to climate change. The discourse on adaptation for the urban poor is relatively new and there is still limited literature that directly addresses it. However, from the adaptation efforts that have been implemented and the way both debates have been framed, it is possible to suggest ways in which future debates can be framed to address some of the tensions raised. The case studies also provide some insight into how existing mechanisms can be enhanced to address the vulnerability of the urban poor to climate change.

It is indisputable that the populations of urban centres in low-income countries are increasing and that climate change is impacting on the urban poor on a more frequent and extreme basis. It can also be demonstrated that adaptation is inherently linked to poverty and that the two are locked in a vicious cycle of poverty, environmental degradation, and vulnerability to disasters (Rincón and Virtucio, 2008, p9).

One possible approach is to explore how the brown and green agendas combined can respond effectively to the needs of the urban poor in the face of climate change, a concept explored by Allen and You (2002, p35). Satterthwaite (2007, pvii) has recognised that "reductions in poverty, including improvements in housing and living conditions and in provision for infrastructure and services, are central to adaptation". This implies that the

brown agenda is fundamental if the green agenda is to be realised. In relations to the debates in this paper, there is a need for a more balanced approach to adaptation needs for the rural and urban poor. Moreover, a more radical approach is needed to ensure that adaptation is treated as an integrated part of urban planning and urban poverty reduction, as advocated by Allen (2005, p5).

At the local level, the brown and green agendas can both be realised by the local government and the community, as demonstrated in the case studies. However, there is a need to call for a more cooperative approach, tapping into local government's resources and political support and the community's knowledge and understanding of their adaptation needs. Without one or the other, it is unlikely that adaptation needs of the urban poor will be effectively addressed or sustained.

BIBLIOGRAPHY

Adams, W. M., 2001, "Green Development – Environment and Sustainability in the Third World", 2nd Edition, Routledge.

Adger W.N, S Agrawala, M.M.Q. Mirza, C. Conde, K. O'Brien, R. Pulwarty, B. Smit and K. Takahashi, 2007, "Assessment of adaptation practices, options, constraints and capacity" in *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Paluikof, P.K. van de Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 717-743.

Allen, Adriana and Nicholas You, 2002, "Sustainable urbanisation – bridging the Green and Brown Agenda", DFID and UNHABTAT.

Allen, Adriana, 2005, "Managing Sustainable Urban Development: A Technical or Political Task?" Chapter 1 in *Urban Development Debates in the New Millennium* edited by K.R. Gupta, Volume III, Atlantic Publishers and Distributors, New Delhi.

Allen, Katrina, M., 2004, "Building community resilience to disaster in the Philippines", chapter 5 – summary in the *World Disaster Report 2004*, http://www.ifrc.org/publicat/wdr2004/chapter5.asp (Accessed on 14 August 2008)

Allen, Katrina M., 2006, "Community-based disaster preparedness and climate adaptation: local capacity-building in the Philippines", *Disaster*, 2006, 30(1), pp 81-101, Overseas Development Institute (ODI).

Asian Development Bank (ADB), 2005, "Poverty in the Philippines: Income, Assets and Access", ADB.

Balisacan, Arsenio M. And Hall Hill (eds), 2003, "The Philippine Economy: Development, Policies, and Challenges", Oxford Scholarship Online.

Bambaige, Albertine, 2007, "National Adaptation Strategies to Climate Change Impacts - A Case Study of Mozambique", Occasional Paper from the *Human Development Report 2007/2008 –Fighting climate change: Human solidarity in a divided world*, Human Development Report Office

BBC News, 2007, "Timeline: The Philippines" http://news.bbc.co.uk/1/hi/world/asia-pacific/country_profiles/1264117.stm (Accessed on 26 August 2008).

Blanco, Ana V. Rojas. 2006, "Local initiatives and adaptation to climate change", *Disaster*, 2006, 30(1), pp 141-147, Overseas Development Institute (ODI).

Broad, Robin and John Cavanagh, 1993, "Plundering Paradise: The Struggle for the Environment in the Philippines", University of California.

Bryant, R. L. and S. Bailey, 1997, "Third World Political Ecology", Routledge, London. Chapter 3: The State, pp. 48-75.

Capili, E.B., A.C.S Ibay and J. R. T. Villarin, 2005, "Climate Change Impacts and Adaptation on Philippine Coasts," proceedings of the International Oceans 2005 Conference, 19-23 September 2005, Washington D.C., USA, pp 1-8.

CNN Archive, n.d., Map of Durban.
http://archives.cnn.com/2000/HEALTH/AIDS/07/10/aids.economics/map.s.africa.durban.reserve.jpg (Accessed on 1 August 2008)

Department of Environmental Affairs and Tourism, 2004, "South African National Climate Change Response Strategy", September 2004, Pretoria.

Eriksen, S.H. and P.M. Kelly, 2007, "Developing credible vulnerability indicators for climate adaptation policy assessment," Mitigation and Adaptation Strategies for Global Change, Volume 12, Number 4 / May, 2007, p.495-524.

eThekwini Municipality,2006, "eThekwini Municipality Integrated Development Plan 2006 - 2011 - 2010 and Beyond", eThekwini Municipality, Durban.

Faustino, R., 2007, "Mainstreaming Adaptation Towards Integrated Coastal Management: The Case of Cavite City, Philippines," presentation by Dr Ramon Faustino Jr, Assistant Director, Conrado Benitez Institute for Sustainability, Philippines, at the Community Based Adaptation Workshop, Dhaka, 24–27 February.

Gardner, Katy and David Lewis, 2000, "Dominant Paradigms Overturned or 'Business as Usual'? Development Discourse and the White Paper on International Development", *Critique of Anthropology*, 2000; 20; 15.

GHK Ltd, 2004, "China Urban Poverty Study", Final Report by GHK Ltd and International Institute for Environment and Development (IIED), Department for International Development (DFID).

Gilbert, Richard, Don Stevenson, Herbert Girardet and Richard Stren, 1996, "Making Cities Work – the role of local authorities in the urban environment", Earthscan.

Hounsome, Rob, n.d., "Proposal and Statement of Capabilities for an ACCCA Pilot Action in South Africa", Golder Associates Africa (Pty) Ltd.

Hounsome, Rob and Kogi Iyer, 2006, "CSIR Report Headline Climate Change Adaptation Strategy for Durban", Final Report, Council for Scientific and Industrial Research (CSIR).

ICLEI, 2008, "Cities for Climate Protection (CCP) Campaign" http://www.iclei.org/index.php?id=689 (Accessed on 23 August 2008)

International Federation of Red Cross and Red Crescent Societies (IFRCRCS), n.d.," Risk reduction in practice: a Philippines case study", International Federation of Red Cross and red Crescent Societies.

IPCC, 1995, "Summary for Policymakers: Scientific-Technical Analyses of Impacts, Adaptations and Mitigation of Climate Change – IPCC Working Group II", derived from the *Contribution of Working Group II to the Second Assessment of the Intergovernmental Panel on Climate Change*, edited by R.T.Watson, M.C.Zinyowera, R.H.Moss, Cambridge University Press, UK.

IPCC, 2007, "Summary for Policiesmakers", in *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Fourth Assessment Report of the

Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 7-22.

Kelly, Philip, F., 1998, “The politics of urban rural relations: land use conversion in the Philippines”, *Environment and Urbanization*, Vol. 10, No. 1, April 1998, pp 35-54.

Kokawa, Naoki, 2003, “Community Based Disaster Preparedness – Red Cross/Red Crescent Approach and Cases”, International Conference on Total Disaster Risk Management, 2-4 December 2003.

Koopman, Adrian, n.d., “The Names and the Naming of Durban”, cited in *The Naming of eThekwini*, eThekwini Municipality. http://www.durban.gov.za/durban/discover-durban/our-durban/history/naming (Accessed on 21 July 2008)

Lasco, Rodel D., Florencia B. Pulhin, Patricia Ann Jaranilla-Sanchez, Kristin Garcia, and Roberta Gerpacio, 2008, “Mainstreaming Climate Change in the Philippines”, World Agroforestry Centre, Indonesia.

Loughhead, S. and Mittal, O., n.d., “Urban Poverty and Vulnerability in India: A Social Policy Perspective”, DFID, http://www.worldbank.org/html/fpd/urban/forum2000/papers/india.pdf (Accessed on 28 August 2008)

Mogelgaard, Kathleen, 2004 “Breaking New Ground in the Philippines: Opportunities to Improve Human and Environmental Well-Being”, Population Reference Bureau.

Moser, Caroline and David Satterthwaite, 2008, “Pro-poor climate change adaptation in urban centres of low- and middle-income countries”, Workshop on Social Dimensions of Climate Change, World Bank, Washington, DC, March 5-6, 2008.

Okonjo-Iweala, Ngozi , 2008, “The greening of the World Bank”, Developments magazine, Issue 42, 2008, Department for International Development.

Pan, JiaHua, 2003, “Emissions Rights and their Transferability - Equity Concerns over Climate Change Mitigation”, *International Environmental Agreements: Politics, Law and Economics* Volume 3: 1–16, 2003.

Perez , Rosa T., n.d., “Assessment of Vulnerability and Adaptation to Climate Change in the Philippines – Coastal Resources Sector”, Weather and Flood Forecasting Centre, The Philippines.

Poverty-Environment Partnership, 2003, “Poverty and Climate Change – Reducing the Vulnerability of the Poor through Adaptation”, Joint Paper published by the African Development Bank, Asian Development Bank, Department for International Development (UK), Directorate-General for Development (European Commission), Federal Ministry for Economic Cooperation and Development, Germany Ministry of Foreign Affairs - Development Cooperation, The Netherlands Organization for Economic Cooperation and Development, United Nations Development Programme, United Nations Environment Programme, The World Bank.

Reid, Hannah and David Satterthwaite, 2007, “Climate change and cities - cities: why urban agendas are central to adaptation and mitigation”, IIED.

Rincón, Maria Fernanda Garcia and Felizardo K. Virtucio, Jr., 2008, “Climate Change in the Philippines: A Contribution to the Country Environmental Analysis,” draft, World Bank.

Robbins, Glen, 2005, “Pro-poor urban LED case study: eThekwini Municipality (Durban)”, Case Study prepared for the World Bank-Netherlands Partnership Program Evaluating and Disseminating Experiences in Local Economic Development (LED) *Investigation of Pro-Poor LED in South Africa*, 2005.

Roberts, Debra, n.d., “eThekwini Municipality 2007 – Innovations – Climatic Future for Durban”.

Roberts, Debra, 2008a, Interview with Joyce Lee on Durban adaptation strategy.

Roberts, Debra, 2008a, “Durban adapts to climate change”, case study in *id21 insights* 71, January 2008, IDS.

Roberts, Debra and Nicci Diederichs, 2002, “A summary of Durban’s Local Agenda 21 programme: the sustainable development challenge”, Working Paper Series on Urban Environmental Action Plans and Local Agenda 21, Working Paper 8, IIED.

Robinson, Jennifer, 2008, “Developing ordinary cities: city visioning processes in Durban and Johannesburg”, Environment and Planning A, 2008, Volume 40, pages 74 - 87.

Satterthwaite, David, 2006, “Climate change and cities”, Sustainable Development Opinion, 2006, IIED.

Satterthwaite, David, 2007, “Climate Change and Urbanization: Effects and Implications for Urban Governance” for the United Nations Expert Group Meeting on *Population Distribution, Urbanization, Internal Migration and Development*, United Nations Secretariat, New York, 21-23 January 2008.

Satterthwaite, David, Saleemul Huq, Hannah Reid, Mark Pelling and Patricia Romero Lankao, 2007, “Adapting to climate change in urban areas: the possibilities and constraints in low and middle income nations”, IIED.

Satterthwaite, David, 2008, “Integrating Adaptation to Climate Change in Decision-making at the Urban/Municipal Level in Low and Middle-income Nations”, unpublished 2nd draft, IIED.

Schipper, Lisa and Mark Pelling, 2006, “Disaster risk, climate change and international development: scope for and challenges to, integration”, *Disasters*, 2006, 30(1), pp 19-18, ODI.

Sida, 2007, “Urban Development Programme: Integrated Municipal Development Programme”, Sida.

Southern African Regional Poverty Network (SARPN), 2004, “Factsheet: Poverty in South Africa” http://www.sarpn.org.za/documents/d0000990/ (Accessed on 24 August 2008)

Storey, Donovan, 2005, “Urban water pollution, communities and the State in Southeast Asia”, paper presented to the workshop on Water in Mainland Southeast Asia, Siem Reap, 30 November to 2 December 2005, Massey University.

Statistics South Africa, 2007, “Community Survey 2007 Basic Results: Municipalities”, Statistical Release, Statistics South Africa, Pretoria.

Stephens, C., G. McGranahan, M. Bobak, A Fletcher and G. Leonardi, 1996, “Urban environment and human health”, Chapter 2 in *World Resources, 1996-97; The Urban Environment*, Oxcford Univeresity Press, Oxford and New York, pp. 31-55.

United Nations, 1999, “Secretary-General to decade for natural disaster reduction efforts, number and cost of natural disaster continue to rise”, Press Release 6 July 1999. http://www.un.org/News/Press/docs/1999/19990706.SGSM7060.html (accessed 12 August 2008)

United Nations Centre for Human Settlements (UN HABITAT), 1986, “Executive Summary of the Global Report on Human Settlements”, UN HABITAT.

United Nations Office of the High Commissioner for Human Rights (UN OHCHR), n.d., “South Africa - Overview of the current Housing Rights situation and related activities”, posted on United Nations Office of the High Commissioner for Human Rights website http://lib.ohchr.org/HRBodies/UPR/Documents/Session1/ZA/UNHABITAT_ZAF_UPR_S1_2008_UnitedNationsHabitat_uprsubmission.pdf (Accessed 21 August 2008)

UN HABITAT, 2001, “Globalization, cities and the urban poor”, a chapter in *The state of the world’s cities*, United Nations Centre for Human Settlements (Habitat), Nairobi, pp 18-19.

UN HABITAT, 2003, “Provision for Water and Sanitation in Cities”, Chapter 1 in *Water and Sanitation in the World’s Cities – Local Action for Global Goals*, Earthscan Publications, London, pp1-56.

United Nations Framework Convention on Climate Change (UNFCCC), 2008a, “Adaptation Fund”, http://unfccc.int/cooperation_and_support/financial_mechanism/items/3659.php (accessed 21 August 2008)

UNFCCC, 2008b, “Database on local coping strategies”, http://maindb.unfccc.int/public/adaptation/ (accessed 25 July 2008)

UNFCCC, 2008c, “Kyoto Protocol”, http://unfccc.int/kyoto_protocol/items/2830.php (accessed 2 August 2008)

Victoria, Lorna P., 2003, “Community based disaster management in the Philippines: Making a difference in people’s lives,” Asian Disaster Preparedness Center, Bangkok.

Vincentian Missionaries Social Development Foundation Incorporated (VMSDFI), 2001, "Meet the Philippines Homeless People's Federation", *Environment and Urbanization*, Vol 13 No 2, pages 73-84.

Wurfel, David, 2003, “Civil Society and Democratization in the Philippines”, Chapter 17 in *Growth and Governance in Asia* edited by Yoichiro Sato, Asia-Pacific Center for Security Studies, Honolulu, Hawaii. pp. 215–224.

World Bank, 1978, “World Development Report”, World Bank, Washington D.C.

World Bank, 2002, “World Development Indicators Online”, World Bank, Washington D.C.

World Bank, 2005, “Natural disaster risk management in the Philippines: enhancing poverty alleviation through disaster reduction”, World Bank, Washington D.C.

World Bank, 2007, “Focus A: Declining rural poverty has been a key factor in aggregate poverty reduction”, in the *World Development Report 2008: Agriculture for Development*, World Bank, Washington D.C.

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