CHAPTER 1

INTRODUCTION: The importance of community-based organizations for equitable water governance in times of climate change

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Climate change affects all of us, wherever on Earth we live. Weather is changing and storms are increasing in intensity, stressing agriculture and infrastructure. As carbon dioxide and other gases emitted by burning fossil fuels cause the earth to heat up, more water evaporates into the atmosphere, and the sun's heat, caught in the thickening atmosphere, drives powerful winds and weather cells, causing droughts, storms and floods more extreme than humans have ever witnessed before.

International strategies for addressing climate change are in disarray. Even if a global consensus had been reached on the United Nations Kyoto Protocol, and its provisions had been implemented and had succeeded in reducing global carbon emissions to 1990 levels, global temperatures would still have risen at least 2 degrees c., meaning that much of Bangladesh and Florida, Manhattan and many small island nations, could be underwater by 2050. But the Kyoto Protocol was NOT agreed upon; the wealthy nations which have benefited from fossil fuel based economic growth over the past 200 years refuse to curtail their consumption, and

the surging growth in the rest of the world also requires fossil fuels to maintain its impetus. It now appears certain that global temperatures will rise by at least 3 degrees c. The complicated financial and carbon-trading mechanisms promoted by the United Nations Framework Convention on Climate Change, the World Bank, and other global institutions are far too bureaucratic, weak, internally-inconsistent, and far-fetched to represent meaningful solutions to climate change. And the housing, health, and livelihoods of marginalized people worldwide are already being threatened by climate-change-related impacts.

This means that the marginalized in every community have both the necessity and the means to take direct action. Their lived experience gives them expertise in how priorities should be set to address climate change. Their knowledge and views must be part of local, regional, national and international governance – including urban planning and housing, water management, infrastructure, agriculture, health, and finance policies. Women's special knowledge, in particular, is crucial, because of women's socially-constructed responsibilities throughout the world for fetching water, cooking, cleaning, agriculture, healthcare, and maintaining housing – all water-dependent activities. Given the immediacy of humanity's common climate problem, and the shortage of resources to address it, we must address these challenges efficiently and develop resilience to face them – at the community level.

What are some of the challenges that low and middle-income countries face as a result of climate change? "(M)ost of the world's urban population live in cities or smaller urban centres ill-equipped for adaptation – with weak and ineffective

local governments and with very inadequate provision for the infrastructure and services needed to reduce climate-change-related risks and vulnerabilities. A key part of adaptation concerns infrastructure and buildings – but much of the urban population in Africa, Asia and Latin America have no infrastructure to adapt – no all-weather roads, piped water supplies or drains – and live in poor-quality housing in floodplains or on slopes at risk of landslides. Most international agencies have long refused to support urban programmes, especially those that address these problems" (Satterthwaite et. al., 2007, p. vi).

The World Wildlife Fund's (WWF) review of the scientific literature on climate change impacts in East Africa underscores the importance of changes in precipitation and weather, sea-level rise, water availability, and other water-related problems as climate change impacts, and states that, "Climate change impacts have the potential to undermine and even undo progress made in improving the socio-economic well-being of East Africans…. For every USD$1 spent preparing for disaster, USD$7 is spent recovering from disaster" (WWF, 2006, p. 1 and p. 9). The equity implications of climate change impacts are underscored in a third recent report which addresses urban flooding and the rights of the urban poor in Africa: "Climate change will increase the vulnerability of the urban poor throughout Africa….The management of localized flooding due to inadequate drainage should be undertaken by local communities themselves….Local voluntary groups, assisted by national or international NGOs and with support from both local government and national disaster reduction organisations, could be highly effective…. Local authorities are (also) best placed to cope with flooding from small streams whose

catchment areas lie almost entirely within the built-up area….Poor people's participation is a must" (ActionAid, 2006, p. 2 and p. 6).

In the coming years, countries around the world will face increasingly severe problems stemming from global climate change. While the details vary from place to place, the impacts are especially grave for marginalized people, whose access to food, drinking water, and safe shelter is most often threatened due to fluctuations in rainfall and temperature, and to extreme weather events. Climate change thus worsens problems related to poverty and inequality, which persist everywhere despite decades of "sustainable development" programming.

Climate change adaptation cannot be standardized. The details of each particular community's situation – ecological, social, political – affect its own priorities. How does each community organize socially and politically to meet the material and weather-related changes that affect people's livelihoods? How are the needs of the most vulnerable addressed in local communities? The chapters in this book describe how civil society organizations (CSOs) which are already working in low-income neighbourhoods can incorporate climate change education and adaptation into their activities. University students, by working as interns with the CSOs, can learn how to do community outreach and share their academic knowledge, while helping the CSOs to document their organizing initiatives and workshops. When local CSOs have connections within universities, this strengthens them politically and builds communication channels between vulnerable people – the experts on climate change impacts – and government officials who are responsible for developing climate adaptation policies.

The goal of this book is to contribute to a "bottom-up" response to climate change by describing and demonstrating how community-based climate change strategies can be initiated, and how international collaboration can strengthen and foster such grassroots initiatives. Thus, this is an action-oriented book about the PROCESS of climate change response and adaptation, starting in local communities.

Climate Change and water governance in Durban, Maputo and Nairobi

According to the Intergovernmental Panel on Climate Change (IPCC), "Africa is one of the most vulnerable continents to climate change and climate variability. This vulnerability is exacerbated by existing developmental challenges such as endemic poverty, limited access to capital, ecosystem degradation, and complex disasters and conflicts" (IPCC 2007). Income inequality in South Africa, Mozambique, and Kenya is among the largest in the world; in all three countries, equity struggles related to water are growing in social, political and ecological significance, which is both a symptom and a cause of urban vulnerabilities related to climate change.

In Maputo, Mozambique, climate change is causing coastal erosion and periodic flooding along scenic coastal roadways; saltwater intrusion, wind erosion, and desertification in urban food-producing areas; flooding in coastal slum areas; degradation of water quality in wells and potable water scarcity; and the destruction of mangroves and threats to the locally-important shrimp fishery. There are clear signs that the sea level is rising, which has led to the need for expensive coastal management efforts in Maputo municipality. On three offshore islands mangroves are disappearing, water quality is declining, and desertification and

erosion are increasing (UN Habitat, p. 2). The United Nations Habitat Cities in Climate Change Initiative, which has begun a pilot project in Maputo, emphasizes local government capacity-building, policy dialogue, climate change awareness, public education, and developing coordination mechanisms between all levels of government as priorities to help address these risks. Mozambique's national water law (1991) considers all water as state-owned, to be governed by the state for the benefit of the population, with water access for people, sustainability, and stakeholder participation as priorities. Four water basin committees have been established in Mozambique, with seats for civil society representatives.

As in Mozambique, South Africa is implementing watershed committees or "catchment management agencies" (CMAs) to decentralize decision-making and create a framework for integrating the needs of all stakeholders in water governance. Durban's municipal government has already developed a local climate change adaptation strategy; like Maputo, Durban faces coastal floods and storm surges related to sea level rise, hotter temperatures and heat waves, changed rainfall and storm patterns, slum flooding and reduced drinking water supplies due to climate change. Environmental education and confidence-building are recognized as crucial needs; for example, the Inkomati CMA has initiated outreach programs targeting rural poor, emerging farmers, women and youth. Grounded participatory research leading to accessible public education and responsive community-based programs with civil society organizations are needed to help address these significant water governance challenges. This type of action research

is well developed in Durban, partly due to the work of the Centre for Civil Society at the University of KwaZulu-Natal and its partner CSOs.

In Nairobi, severe infrastructure needs are being exacerbated by water supply fluctuations and slum flooding related to climate change. Just as in Maputo and Durban, environmental awareness and education leading to more equitable governance processes are needed. As noted by the Kenyan delegation to the 2007 UN conference on climate change in Nairobi, Kenya's adaptation focuses include education, good governance, human resources development and training, institutional capacity building and management change, public finance improvement, and better national resources management. Nairobi, one of the largest and most complex cities in the world, provides a challenging arena for participatory governance research.

Democratic mediation of equity conflicts related to water, and sustainable long-term management of water resources in the face of climate change, requires public participation, in particular by low-income marginalized women – the experts. But many people's lack of awareness of how water governance institutions function, and inability to participate for a range of reasons, mean that low-income people are nearly always underrepresented.

"Strengthening the role of civil society in water sector governance towards climate change adaptation in African cities—Durban, Maputo, Nairobi" is a three-year project linking African CSO and university-based partners in these three cities. Its goal is to improve watershed governance for climate change adaptation and enhance resilience and adaptive capacity of vulnerable and marginalized groups,

especially women, by developing methods for strengthening the voices of marginalized people and especially women in water governance and linking communities with other water actors to help bridge the knowledge gap in local water management and enhance a broader social perspective on water, climate change, and sustainability.

This project, which started in 2010, is supported by the Climate Change Adaptation in Africa (CCAA) program—a joint initiative of Canada's International Development Research Centre (IDRC) and the United Kingdom's Department for International Development (DFID). This project's methodology includes collaboration between students, NGOs and academics as well as community-based research and environmental education. Project partners based in universities and several NGOs in Nairobi, Maputo and Durban are working together to achieve the following objectives:

- To characterize the institutional framework for urban water governance in the three cities, and explain how different actors within this framework cope with climate change and variability;
- To identify and test viable alternatives for enhancing civil society's role towards adaptation to climate change and variability by vulnerable groups (e.g. by developing education, training and awareness programmes); and
- To share widely the knowledge generated for potential adoption by other cities in Africa.

The project is being implemented by the following community-based NGOs in Africa: Kilimanjaro Initiative (KI) and Kenya Debt Relief Network (KENDREN) in

Nairobi; Women, Gender and Development (MuGeDe) and Justiça Ambiental (JA) in Maputo; and Umphilo waManzi (Water for Life) and the South Durban Community Environmental Alliance (SDCEA) in Durban. The University of Nairobi (Nairobi), Eduardo Mondlane University (Maputo), and the Centre for Civil Society at the University of KwaZulu-Natal (Durban) provide academic research coordination and student supervision for this project. Their chapters in this book describe the starting-points for all of these partner organizations in their approaches to climate change-related work.

Participatory climate change awareness-building

In general, all the partners share a commitment to focusing on low-income areas of each city; these tend to be most severely affected by periodic flooding and other climate change impacts. Residents of low-income areas often lack the ability to protect themselves against the impacts of extreme weather events. The project includes training and research sponsorship for students and faculty in the partner universities; support for community-based research, workshops in low-income communities and secondary schools, curriculum and materials development, and skills development within the partner NGOs; training of environmental educators and organizers; contributions to the pool of experienced and qualified community workers in each country; strengthening of all the partner institutions' capabilities to carry out international projects; and contributions to the international literature and professional knowledge concerning water issues, environmental education techniques, and community organizing for improved civil society involvement in

governance. The networks being built extend from local and community-based linkages through regional and national-level policy groupings to international academic and policy networks on civil society, watershed management, and governance.

The political process of climate change policy development and implementation depends on the interchange between civil society groups, researchers generating information on current realities, and government. We are attempting to challenge the conventional notion that only educational institutions "produce" knowledge. Understanding community needs and what helps particular civil society groups to see and act to strengthen their role in democratic governance, for example, is something in which community organizations and CSOs have eminent expertise. This collaborative approach, also known as participatory action research (PAR) is broadly defined as "research by, with, and for people affected by a particular problem, which takes place in collaboration with academic researchers. It seeks to democratize knowledge production and foster opportunities for empowerment by those involved" (Kindon *et al*. 2008, p. 90).

Partnerships between academics and non-academics can be especially productive and effective. This type of partnership encourages and allows the partner CSOs to reflect on and analyze their activities and to document "learning" more systematically than they are often able to do, by bringing student researchers into the CSOIs as collaborators/interns. It also encourages universities to be more pragmatic about teaching and research, and to "field-test" approaches towards community organization, equity, and popular education. Students committed to the

project's goals of supporting participatory engagement by local people in municipal water decision-making are given practical opportunities to develop their skills, as a way of hastening each city's climate change preparedness.

The integration and meaningful participation of women in formal decision-making processes is especially important in times of climate change, given women's gendered responsibilities for household food, fuel, and water provision as well as healthcare, childcare, elder care and community supports. This requires attention to women's adaptive capacity and special supports for women's resilience and ability to cope with climate change.

Specific examples of how climate change responses combine well with gender-aware community organizing, all of which are now underway, include the following:

- The Kilimanjaro Initiative (KI), a youth-focused NGO, is currently upgrading a sports field in Nairobi's Kibera slum, on the banks of the Nairobi River, which will prevent housing from being flooded during extreme weather events. In addition, KI organizes community forums on sustainable water management and environmental education, as well as community and river clean-ups. Young women's leadership is central to their organizing. (See the chapter by Sadique Bilal.)
- In Durban, women activists from Umphilo waManzi and the South Durban Community Environmental Alliance are coordinating "learning journeys" where government officials visit low-income neighbourhoods to hear about local women's experiences with flooding, sanitation and other types of

climate change stresses, which helps them to bring these views into policy discourse. (See the chapters by Mary Galvin and Lushendrie Naidu).

- Maputo university environmental education students are working with intermediate school youth on after-school activities related to climate change. Most participants are women. (See the chapters by Eugenia Cossa, and by Erika Mendes and Tiago Ismael).

Community-based education and organizing are fundamental to creating the conditions for local knowledge to be shared and utilized, through equitable democratic participation. Building inclusive governance structures and strengthening the role of civil society, especially women, in water governance are essential components for addressing climate change vulnerability and fostering resilience and sustainability in urban centres as well as rural areas. According to the Intergovernmental Panel on Climate Change, "adaptation is shown to be successful and sustainable when linked to effective governance systems, civil and political rights and literacy" (Parry *et al.*, 2007, p. 151). Non-governmental civil society organizations in the Global South have expertise in such initiatives, which is potentially transferable to other places – including places in the Global North.

Community-based environmental education initiatives which are relevant and interesting for local residents and increase their job opportunities, knowledge of watershed issues, understanding of basic political and ecological principles, and their confidence to express and act on their views, can serve as the basis of a climate change intervention approach which is progressive, constructive and democratic.

This, in turn, increases the resilience and sustainability of watershed and climate change decision-making processes. It also lays the groundwork for community organizing and extension of the environmental education activities to larger constituencies in local areas affected by climate change. Such grassroots initiatives — and the global sharing of ideas on how to design and implement them, freely available for adaptation in other places — stand in contrast to top-down climate change adaptation mechanisms controlled from the Global North. In this sense, climate justice is a new manifestation of the bottom-up perspective in Development Studies more generally. Furthermore, it is a movement which "best fuses a variety of progressive political-economic and political-ecological currents to combat climate change" (Bond and Dorsey 2010, p. 286).

Climate justice – addressing the impacts of climate change on the poorest first – is a powerful imperative at every level, from the local to the global. Civil society groups worldwide are using online and in-person networking tools to share ideas on how to promote climate justice, to obtain funding, and to press politically for policies addressing the needs of marginalized people. This bottom-up movement builds resilience in the face of the social and political repercussions of extreme weather events.

Our strategy in designing and carrying out this work has been to start where groups and people are, jointly analyze the local situations, name and build on partners' strengths, collaborate in creating new initiatives, share our results at each stage, build bridges between academic and community groups through student

work and exchange visits, and share perspectives to foster a global vision, gaining energy and ideas from each other.

Our work emphasizes that progressive participatory governance is needed in order to achieve sustainable water resources management and community resilience in the face of climate change. This type of progressive governance requires the recognition that water resources are a "commons" rather than a "commodity".

In the following chapters, academics and activists discuss climate change and water challenges in Durban, Maputo and Nairobi and how their own current work is helping to address these challenges. Each chapter describes the current work of each partner organization related to water and climate change, including a description of the apparent local challenges and how they are being addresses. In the concluding chapter, we summarize our joint strategy and describe our frameworks for supporting each other as we move forward.

Our goal in presenting these stories is to show the diversity and creativity of grassroots, non-governmental responses to climate change in urban Africa today. Our hope is that these stories will resonate with and inspire others who are working together to build frameworks for community resilience and action in the face of humanity's greatest challenge to date: climate change.