



**Climate Change
Symposium
sur le
Changement
Climatique
2011**
www.adaptation2011.net

Panel 13

Links between adaptation mitigation & low carbon or climate compatible development (Sponsored by the Climate and Development Knowledge Network)

CZS[d 5arl Wesselink (CDKN/South South North)

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Marek Harsdorff: Climate compatible productive and decent work – a major way out of poverty and the climate trap in Ethiopia

Maurice Onyango: Climate Smart Disaster Risk Management - an approach for climate compatible development

Leisa Perch: Reconciling participation and benefits-sharing - policy implications for how Africa adapts to climate change

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Introduction

Carl Wesselink from Climate Development Knowledge Network/South South North chaired this Climate Development Knowledge Network funded interactive panel discussion. Carl noted that three issues had strongly arisen by the presenters: how complex the climate change and development system is; how important it is to embed climate change into the national processes; and people - ordinary individuals and communities on the ground that face the challenges of sustaining themselves and their families in the face of climate change.

Strengthening the South African water sector's links to climate change

Imasiku Nyambe from One World Sustainable Investments presented around strengthening the science-policy-institutional-finance dialogue in Africa with a specific case study around Zambia and Integrated Water Resource Management (IWRM).

With reference to river basins, the presenter discussed the need for institutions to integrate climate change into development plans as well as robust governance structures to ensure that all the appropriate checks and balances are ticked. Without the above, climate finance will not flow towards this sector. Currently, Imasiku noted, the finance absorptive capacity is low as the right institutional frameworks and systems still need to be strengthened.

Getting a job - a major way out of the climate trap?

Marek Harsdorff from the International Labour Organisation shared a story about his chat with a taxi driver in Addis Ababa about the national economy and what he saw as the major challenges. The taxi driver responded that the major cause for concern for most Ethiopians is employment opportunities.

To contextualise this discussion, Marek highlighted that Ethiopia needs an 11% increase in GDP growth to become a middle income country. In 2003 however, due to drought the economy only grew by 3%. Agriculture dominates the economy which has taken external shocks like the financial crisis - people like farmers, women and the youth are most vulnerable and affected by these shocks.

MDG 1 (Millennium Development Goal) is to eradicate poverty and hunger. For young people in Africa, employment is a major priority and a route out of poverty. In Africa, with most employment prospects being associated with natural resources, an integrated approach to

addressing climate change and development could be a win-win solution for all. Marek suggests employment-led climate compatible development, which can be broken into 2 possible options:

1. 'Hard' adaptation. For e.g. in the water and climate change sector where there is employment intensive infrastructure (like water harvesting, flood control ,etc)
2. 'Soft' adaptation in skills training focusing on productive employment – for e.g. organic farming

Marek went on to describe how there is also need for economic diversification – for instance in the renewable energy in Africa where a pro-poor green value chain development can be developed.

A Climate smart approach to disaster risk management

Maurice Onyango from Christian Aid presented on the CSDRM approach that has brought a consortium of organisations together on a project titled Strengthening Climate Resilience. CSDRM focuses on the synergy between climate adaptation disaster risk management and development approaches.

Maurice described this approach as being consultative where more than 500 practitioners, policy makers, scientists and academics from the climate change, disasters and development communities have been engaged. He added that this approach combines scientific, indigenous and other forms of knowledge making it a holistic approach.

Enhancing participation and benefit sharing

Leisa Perch, Coordinator at the International Policy Centre for Inclusive Growth (IPC-IG) discussed reconciling participation and benefits-sharing and the implications this will have on climate change adaptation policy in Africa. Uneven development and climate change just adds to more challenges for the south, especially Africa.

Leisa focused on two areas. Firstly, National Adaptation Plans of Action (NAPAs) as an instrument for both participation and benefit-sharing. The research found that few of the NAPA guidelines have been able to effectively link poverty and inequality to vulnerability to climate change. Due to this disconnect, south-south learning can be further engaged to enhance cooperation and learning around participation and benefit sharing around NAPAs within Africa. The other issue highlighted was around making adaptation and mitigation more compatible – not just in terms of funding but in terms of shaping practice.

Toward Climate Resilient Development: Strengthening the Science-Policy-Institutional-Finance Dialogue in Africa

Imasiku Nyambe and Belynda Petrie

OneWorld Sustainable Investments and the Regional Climate Change Programme in collaboration with the Governments of Mozambique and Zambia, and SADC Infrastructure and Services Secretariat.

Climate change impacts on most aspects of Africa's environment, economies and livelihoods. In rain-fed dependent Africa, where global temperature increases are experienced more intensely, where few systems and communities have the resilience needed to cope, and where contributions to greenhouse gas emissions are a fraction of the global problem, responses to climate change are primarily adaptive. Thus for most of Africa, adaptation is the primary consideration and urgent action is imperative, regardless of whether or not the world manages to limit the extent of the climate problem through emission reductions.

Climate change is an additional stress factor in Africa, where adaptive capacity and resilience to climate change is inherently low. The need to integrate climate change into policy and practice through effective planning is critical in strengthening resilience, in reducing vulnerability to climate change and in strengthening capacity to adapt to climate change. Poverty alleviation and related planning and implementation processes, at all levels, require governing policy with parameters for action. Climate resilient investment and a comprehensive, integrated approach to financing climate responses is also a critical success factor in Africa's pathway to adapting to climate change.

Generally speaking funding sources for adaptation in developing countries can come from private sector flows, public sector flows and international community flows. Climate funds can provide some of the public funding available but these are unlikely to be adequate to secure sustained solutions to the climate change problem. Ensuring that climate risks are incorporated into development plans and policies not only strengthens the policy makers ability to access emerging climate funds, it also helps ensure that climate change challenges are prioritised in development plans thus enabling access to other sources of public finance such as treasury funds, development banking and private sector investment, to include asset management and infrastructure finance.

Evidence of low adaptive capacity and little resilience to climate change is needed to facilitate both policy development and access to climate finance. Coherent strategies for adaptation and climate resilience are critical if southern Africa is to achieve its development objectives in a changing climate. The evidence base, which informs these strategies, also constitutes the basis of funding proposals and justification for financial investment in a proposed solution. That the proposed solution can demonstrate a positive impact on development objectives will enhance the prospects of financial awards being made.

Furthermore, governance needs to be robust to absorb finance for adaptation, meaning that clear institutional arrangements in addition to governance structures is needed to ensure flow of finance for the action.

At the same time as Africa is considering how to adapt to the challenges of climate change on the domestic front, international policy on climate change is evolving, through multilateral negotiation processes, which include representation of most African states, the latter primarily through the Africa Negotiators Group (ANG). These international outputs, which include the evolving climate funding architecture, need to both be influenced by Africans and informed by African experience and be translated to enhance policy and practice 'at home' in a process that is well aligned with and integrated into development planning. Moreover, integrating climate change responses into development and investment planning processes will help improve the Continent's ability to access and absorb climate and related finance, otherwise referred to as improving Africa's climate finance absorptive capacity.

This paper focuses on three specific case study examples of how international and national policy can be linked to practice to effect adaptation and climate resilient development through policy and development plans and through informing climate finance. Two countries in Southern Africa have recent experiences that are useful in demonstrating methods and approaches in considering links between climate change and sustainable development: Zambia's Sixth National Development Plan integrates climate change to strengthen the country's resilience in their poverty alleviation and development planning processes and Mozambique is effectively incorporating climate change into their Disaster Risk Reduction and Prevention processes, with an emerging emphasis on implementing mechanisms to increase their related climate finance absorptive capacity to enable implementation. At a Regional Economic Centre (REC) level, the Southern African Development Community (SADC), through their Infrastructure and Services Secretariat (Water Division) is beginning to demonstrate how international and national policy is informing regional policy development with a view to ensuring a climate resilient future for Southern Africa. The Secretariat is simultaneously considering how best to develop its climate finance access, encourage investment and access international and regional finance. Integral is the Secretariat's approach to effective prioritisation of its climate change response strategies at a regional level, taking into account national and transboundary interests. .

In addition, the paper presents the potentially important role of the Regional Economic Centres and other regional entities in effectively linking international and national policy with resilient development given both long term, more gradual and short term extreme event related climate impacts. In so doing, the paper considers the inescapable transboundary nature of climate change and the importance of locating adaptation within a system or systems. This is to ensure relevance, understanding of sovereign interests in a transboundary situation, leading to buy-in, clear institutional arrangements, evidence based decision making and good governance in enabling transboundary responses. The studies consider the practical implications of implementing frameworks and approaches discussed in available literature, as well as those adapted to specific situations. The paper concludes on the fundamental importance of the why climate resilient development planning and policy is important, how to effect this and what the expected benefits will be, within a regional and national context. It further explores the need for strengthened dialogue between science, institutions and communities and how this informs policy. It equally considers how this strengthened dialogue can in turn, inform financing decision and increase Africa's absorptive capacity. The latter is based on the assumption that historical and current capacity to absorb climate finance in Africa is low.

Marek Harsdorff

Climate compatible productive and decent work – A way out of poverty and the climate trap in Ethiopia

Marek Harsdorff and Kees Van Der Ree¹

Abstract

Ethiopia is facing two major and mutually reinforcing challenges: Ending poverty while coping with climate extremes, variability and change. Ethiopia ranks 157 on the Human Development Index. Life expectancy at birth is 56 years, mean years of schooling are 1.5 and youth unemployment stands at 25% (ILO 2008). While 46% of the population of 83 million is under 15 labor markets' capacity will be increasingly threatened (AfDB&OECD 2008). In addition, over 92% of the 32,2 million large labor force work in informally while only 8% are formally employed with the majority working for the government. Gross national income (GNI) per capita in purchase power parity (PPP) is US\$ 992 (UNDP 2010) constraining 76% of the population to live with less than 2\$ day (World Bank 2007).

This development status is closely linked to Ethiopia's highly variable climate and fragile mountainous ecosystem making it one of the most vulnerable the world (IPCC 2007): Agriculture accounts for 46% of GDP and 60% of export earnings providing 80% of employment and livelihoods. With only 2.5% of irrigated land climate extremes and notably droughts have a major impact on GDP and export earnings affecting the entire population (UNDP 2010, World Bank 2007).

The results of economic modeling confirm the close inter linkages between the climate and the economy showing significant effects of rainfall on consumption and economic growth. Positive climatic conditions have a positive and significant effect on output while economic agents are greatly affected by risks and uncertainty. Uncertainties about the weather condition hinder the investment and use of improved agricultural technologies because of the associated risk i.e. financial loss. While about 60 percent of those who

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associate future risk do not practice soil conservation this may indicate that those who attach risk premium on their future land holding tend to be reluctant to invest which in turn leads to even lower level of output. (Geda and Degefe 2005, Dercon 2003)

Against this background Ethiopia's Government addresses these two challenges through its Growth and Transformation Plan (GTP) and its Climate Change National Adaptation Programme of Action (NAPA 2007).

While a large number of policies, action plans and initiatives exist to address one or the other challenge, this paper analyzes the inter linkages between poverty and climate and suggests an integrated climate-employment approach. MDG target 1.B states 'full and productive employment and decent work for all' as the main route to escape poverty. Conversely 'hard' infrastructure and 'soft' capacity building solutions are hailed to address the climate challenge (World Bank 2010, UNFCCC 2010, and Climate & Development 2010). Combining employment focused analysis with climatic and environmental solutions 'green productive climate compatible and resilient employment' is believed to show a way out of poverty and the climate trap.

This paper will draw on ILO's experience in Employment Intensive Investment (EIIP) and Public Employment Programs (PEP) to propose climate resilient and productive infrastructure adaptation programs, hence focussing on adaptation to climate change being employment intensive as well as local natural resource based. Hereby lessons learned from past projects using labour-based rehabilitation brigades and labour-based approaches in the provision of infrastructure in the urban sector in Ethiopia will be included. Innovative integrated solutions in combining employment programmes such as the Ethiopian Productive Safety Net Programme (PSNP) with micro insurance and finance will be presented: 'Insurance and micro finance for work' instead of 'cash for work' (World Bank 2009).

Such an integrated employment-climate approach will use lessons learned from ILO's Decent Work Programme in Ethiopia (ILO 2010) and combine it with the adaptation priorities as identified by the Government in the NAPA. It will showcase how to integrate climate change adaptation in development co-operation (OECD 2009) and how climate change vulnerability and impact scenarios can be mapped (UNDP 2010a) so as to

design 'climate compatible productive and decent work adaptation programs' (UNDP 2010b). While crop insurance, food security, infrastructure, and economic diversification ranks highest this paper develops further current work on 'Opportunities and challenges for micro insurance in Ethiopia' (ILO 2010, OECD 2010) and 'The Contribution of Organic Agriculture to Climate Change Adaptation in Africa' (UNCTAD/UNEP 2008, IFOAM 2010) and explores the links between the environment, economy and employment (GHK/ILO 2010).

While the paper will conclude with key recommendations the working hypothesis is that degradation of the natural environment, climate extremes, variability and change and poverty are mutually reinforcing development trends which can be tackled through climate compatible productive and decent work in Ethiopia.

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Maurice Onyango

Climate Smart Disaster Risk Management - an approach for climate compatible development

Introduction

This paper explores the synergy between climate change adaptation, disaster risk management and other development approaches. Climate change is affecting the frequency and severity of some natural hazards across East and Horn of Africa; it is compounding people's vulnerability and exposure; and is creating greater uncertainty. The disasters community across East Africa are more attuned to dealing with slow onset disasters such as drought. However, as flooding in parts of Sudan in July 2010 demonstrated, disaster trends appear to be changing, and with this, recognition that the impacts of climate change on disasters are more varied than was perhaps anticipated. The Stern Report of 2006 predicts that the cost of climate change in Africa could be as high as 7-10% of GDP by 2100, whereas a recent study on the economic impacts of climate change in Kenya has estimated that the annual cost of climate change impacts will be in the tune of USD 1 to 3 billion by the year 2030.

As we pass the mid-point of the Hyogo Framework for Action (HFA), countries striving to meet global commitments on disaster reduction are calling for a smarter, more integrated approach to DRM (GFDRR Stockholm Policy Forum 2009 and UNISDR 2009). As the impact of natural disasters on people's livelihoods increases, 'business-as-usual' disaster risk management will become progressively ineffective if organisations, policies and practices do not take climate change into account.

A holistic Climate Smart Disaster Risk Management (CSDRM) approach is needed that tackles changing disaster risks and uncertainties, enhances adaptive capacity and addresses poverty and vulnerability and their structural causes. The CSDRM approach also presents considerable opportunities for attracting resources from swelling adaptation funds, as it is a legitimate first step in adapting to climate change and climate variability. In this regard, CSDRM aims to offer a viable delivery mechanism for climate change adaptation resources at national and sub-national levels.

² Kenya Climate change strategy page 12

The paper will focus on the experience of developing the CSDRM approach and its relevance to the East African context, specifically Sudan, Kenya and Tanzania. The CSDRM approach has been developed through extensive consultation with more than 500 practitioners, policymakers, scientists and academics drawn from climate change, disasters and development communities. In addition, the paper will reflect on the case studies including the Inades Formation, Tanzania, as a way to demonstrate different components of the CSDRM approach.

What the project was about?

Climate Smart Disaster Risk Management (CSDRM) Approach

The impacts of climate change on disaster risks are profound, complex and somewhat uncertain. We already know that trends in economic and livelihoods-related disaster losses are on an upward curve and the majority are associated with extreme weather events. In Africa the gradual yet dramatic disappearance of glaciers on Mount Kilimanjaro has been attributed to global warming (IPCC 2001). Climate change also has critical health implications. Changes in rainfall will affect the presence and absence of vector- and water-borne pathogens (IPCC 2001). These trends are likely to continue and may even accelerate as some hazards become more severe and unpredictable and greater numbers of vulnerable people are living in harm's way. Despite this reality, there is little collective understanding of how current efforts to manage disaster risk can be enhanced and scaled-up to cope with the impacts of climate change. The focus on immediate disaster relief has slowed meaningful global investment in disaster risk management (DRM), even as expenditure on humanitarian response is increasing to meet ever more serious need. The difficult truth is that the way we are approaching disaster risks today is almost certainly not good enough to meet tomorrow's challenges. Relying on 'business-as-usual' DRM will lead to failure without a significant shift in the way in which risks are calculated, interventions designed, investments made, capacities developed and partnerships progressed. Only by switching to this climate-smart version of disaster risk management can we feel confident that our efforts will enhance disaster resilience in a changing climate.

What are the impacts of climate change on disaster risk in Africa?

Climate Change is increasing the frequency and severity of some, but not all, hazards. The Intergovernmental Panel on Climate Change (IPCC, 2007) concluded that the frequency and severity of hot and cold extremes and heavy precipitation events is increasing and this trend will continue. At the moment no clear patterns are seen with tropical cyclones. Confidence in understanding or projecting changes in hazards and extreme events depends on the type of extreme event, as well as on the region and season.

Climate change is decreasing crop yields, increasing water scarcity, leading to a loss of biodiversity and natural assets provided by ecosystems, causing new patterns of disease and increasing respiratory illnesses, and possibly has become one of the triggers of migration and new patterns of conflict. These trends are projected to worsen (IPCC, 2007). This means vulnerability is increasing and disaster losses may worsen even without any discernable change to the severity or frequency of hazards. Increasing uncertainty and unexpected events, the complexity of the physical and human system and their interactions dictate that scientific models about future climate change impacts remain uncertain. Accordingly, the inability to predict the exact magnitude or timing of extreme climate-related events means that people must be prepared for the unexpected, whether related to the type or severity of the hazard or in the way in which the human system responds to it. In Sudan for example other climate-related phenomena—such as dust storms, thunderstorms, and heat waves—also pose a serious threat to local livelihoods, though they occur less frequently. Climate change is expected to see these hazards intensify, and the frequency of extreme events in Sudan has already increased in the last 20 years (Fadel-El Moula, 2005; NAPA, 2007). The NAPA (2007) assessed the likely impacts of future climate change on agriculture. It states that, combined with growing socioeconomic pressures, climate variability and climate change are likely to intensify the desertification of arable areas. It also predicts that the humid agro-climatic zones are likely to shift southward, rendering areas of the North increasingly unsuitable for agriculture. In addition, crop production is predicted to decline substantially for both millet and sorghum, because of decreasing rainfall and increasing variability in its distribution. The areas suitable for arable land, as well as the important gum Arabic belt, are also expected to decrease in size, with negative impacts for both local incomes and food security

As we pass the mid-point of the Hyogo Framework for Action (HFA), countries striving to meet global commitments on disaster reduction are calling for a smarter, more integrated approach to DRM (GFDRR Stockholm Policy Forum 2009 and UNISDR 2009). In this context, a Climate Smart Disaster Risk Management (CSDRM) approach presents considerable opportunities for governments and civil society. It is a legitimate first step in adapting to climate change and climate variability, will help ensure DRM investments are durable and value-for-money, and offers practical guidance at both national and local scales to deal with new and evolving threats. Existing rich capacity and expertise on DRM provides an excellent foundation for effective CSDRM and climate-smart development strategies.

CSDRM builds on this foundation by offering:

- A conceptual guide to increased coherence and complementarity with climate change adaptation goals.

- A call to refocus DRM efforts on tackling poverty and other root causes of vulnerability.
- Evidence of the benefits of promoting the longer-term adaptive capacity of people and organisations to shape their own sustainable solutions to changing risks.
- Lessons on the importance of forming innovative partnerships in order to better equip us to manage uncertainty and unexpected events.

CSDRM: in a nutshell

Responding to the need for an integrated approach to disasters, development and climate change, CSDRM is: an integrated social development and disaster risk management approach that aims simultaneously to tackle changing disaster risks, enhance adaptive capacity, address poverty, exposure, vulnerability and their structural causes and promote environmentally sustainable development in a changing climate.

The CSDRM approach (see Figure 1) provides a guide to strategic planning, programme development and policymaking and should be used to assess the effectiveness of existing DRM policies, projects and programmes in the context of a changing climate. It is intended for those responsible for managing disaster risks at national, sub national or community level and has been developed through extensive consultation with policymakers and practitioners at these scales. The approach has three interlinked pillars of action, which are founded on longstanding concepts – mainly related to the progression of vulnerability from root causes to unsafe conditions (Wisner et al, 2004) and to those associated with resilience, adaptive capacity and uncertainty (Holling, 1973 and Folke, 2006 for example). The three pillars of action are:

Tackle changing disaster risk and uncertainties

Pillar one supports the priority areas of the HFA, highlighting the importance of collaboration between multiple actors. It calls for improved information on risks by conducting detailed risk assessments which recognises the value of multiple sources of knowledge. It highlights the importance of increasing access to information by all stakeholders through education, early warning and the media while foregrounding measures to understand and address vulnerability and the conditions creating risks. The CSDRM approach treats climate change as a key consideration and attempts to insert climate change into the most critical, climate-sensitive elements of the HFA.

Enhance adaptive capacity

Adaptive capacity refers to our ability to manage change sustainably by strengthening resilience. Promoting adaptive capacity means that institutions and networks learn and use knowledge and experience and create flexibility in problem solving (Scheffer et al, 2000 and Berkes et al, 2003). The key characteristics which enhance adaptive capacity have been identified as: promoting diversity; creating flexible, effective institutions; accepting non-equilibrium; adopting multi-level perspectives; integrating uncertainty; ensuring community involvement; promoting learning; advocating for equity; recognising the importance of social values and structures and working towards preparedness, planning and readiness. Enhancing adaptive capacity is a key strategy for managing increasing uncertainty associated with a changing climate and allows people and organisations to respond to shocks and unexpected events more effectively. The CSDRM approach weaves together many of the characteristics of adaptive capacity highlighted above and offers guidance on how to consider these in a practical way.

Address poverty, vulnerability and their structural causes. Pillar three is strongly influenced by the 'pressure and release' model (Wisner et al, 2004) and longstanding research that attributes the causes of disasters to failures in development (Bankoff et al, 2003, for example). Wisner et al's model treats root causes, dynamic pressures, unsafe conditions and hazards as all contributing to disaster risk. Root causes underscore the importance of access to power, structures and resources. A lack of skills and institutions (markets and press freedom) coupled with macro forces, such as urbanisation and population growth, contribute to vulnerability. The CSDRM approach recognises the complexities and interdependencies of any one intervention and thus promotes the interrelation of the three pillars. Guiding questions that supplement the actions depicted in Figure 1 are examples to stimulate discussion, planning and action in a specific context. They are not exhaustive and the CSDRM approach needs to be tailored to local realities and specific challenges.

How has CSDRM been developed? Who was involved?

During the development of the CSDRM approach in Kenya, Sudan and Tanzania, the inputs gathered from over 100 experts, NGO staff and government officials created the approach. In Kenya participants including the Kenya Climate change working group (a consortium of over 40 NGOs working on Climate change issues), International NGOs, Government officials and academic representatives highlighted the manner in which DRR, CCA and other development policies are scattered in various ministries making it difficult to holistically address DRR, sustainable development and emergency response. In most cases governments and agencies are reactive to disasters as opposed to ensuring integrated policy formulations that address these issues. In Kenya for example the increased frequency of drought and its negative impact on development is fully understood, however, the policies related to DRR, Emergency response and development are still done in Silos, scattered in the ministries of environment, special programs,

while climate change sits in both the environment ministry and the office of the prime minister . This has led to a difficulty in developing holistic /integrated policies and action on disaster response, DRR, and CCA. The participants were in agreement on the need for integrated DRR, CCA and sustainable development. In Tanzania poor awareness on existing policies on DRR, CCA and other related development issues was noted as the major barrier to integration since in most cases policies exist but are not fully implemented. The East Africa consultation was part of a broader consultation process with more than 500 practitioners, policymakers, scientists and academics from climate change, disasters response and development communities in ten 'at-risk' countries in Africa and Asia (Bangladesh, India, Nepal, Sri Lanka, Kenya, Tanzania, Sudan, Cambodia, Indonesia and the Philippines). More intensive fieldwork was conducted in Cambodia (Polack,2010), India (Hedger et al, 2010) and Sri Lanka (Ibrahim, 2010) to test the use and applicability of the emerging approach in different contexts. A further study is planned for Sudan's Darfur in 2011.

In addition, studies were also commissioned to examine: (a) the applications of the concept of resilience to DRM and adaptation (Bahadur et al, 2010); (b) the convergence between DRM and adaptation in funding, policy and practice (Mitchell et al, 2010); and (c) the extent to which environmental and low carbon considerations are included in DRM interventions (Urban et al, 2010). These studies, along with the three country studies, compliment this document and should be viewed as supporting material. They have been published as the first six papers in the 'Strengthening Climate Resilience Discussion Series' which can be found at www.csdrm.org

How does CSDRM support and build on other frameworks and approaches?

The CSDRM approach builds on DRM, climate change adaptation and development concepts and approaches with the purpose of accelerating progress on the HFA and efforts to promote 'disaster-resilient communities' (Twigg, 2007). However, added emphasis is placed on strategies to manage uncertainty, particularly through enhancing adaptive capacity and on the critical importance of addressing poverty and vulnerability holistically, which includes focusing on their root causes and on integrating principles of environmental sustainability. It could be argued that these elements have been underplayed in the HFA or practical approaches to community-based DRM to date.

How to use the CSDRM approach

CSDRM brings together the three pillars set out above in an integrated approach to DRM, adaptation and development. Many actions cut across the three pillars, which should not be treated separately, but more as a way of ordering thoughts and discussions. The twelve actions

should be treated as a menu and any project, programme or policy should seek to integrate actions from each pillar, rather than focus on just one. No single CSDRM intervention could possibly integrate every one of the twelve actions. Nonetheless, actions across the three pillars provide a way of prompting those managing disaster risks to develop processes to ensure they are not accentuating poverty or vulnerability or creating new risks. Naturally there are limits to what disaster risk managers can achieve alone, so the CSDRM approach highlights the importance of working in partnership with development and climate change stakeholders to ensure DRM and development outcomes are more robust to changing disaster risks. To stimulate discussion, inform climate smart planning and action, and to take account of specific contexts, guiding questions are provided for each of the three pillars. These are not exhaustive and need to be tailored to local realities and specific challenges. We are in the process of identifying and developing ideas and guidance notes on how to implement specific action points.

Geographical scope

In East Africa, national consultations took place in Sudan, Kenya and Tanzania; the regional consultation in Nairobi, Kenya.

Should DRM refocus on addressing vulnerabilities?

The disaster community from the East African countries were more attuned to dealing with slow onset disasters such as drought. However, as flooding in parts of Sudan in July 2010 demonstrated, disaster trends appear to be changing, and with this, recognition that the impacts of climate change on disasters are more varied than was perhaps anticipated. Whilst recognising the changes in the physical impacts of climate change, practitioners, policymakers, researchers and scientists highlighted that the challenging contexts in which individuals and communities live are affected by multiple factors beyond disasters and climate change. Understanding and differentiating between the multiple drivers of risk – changing root causes, dynamic pressures, unsafe conditions and hazards – that result in a changing environment (in the broadest sense) remains a challenge. This issue was echoed in other consultations, for example in the UK consultation a participant argued that, 'Disaster risk managers cannot be all things to all people, but we do need to make more concerted efforts to get back to our roots – of addressing vulnerabilities'.

DRM in spite of a changing climate, is it enough?

One debate looked at the need to differentiate between DRM happening in the context of a changing climate, and DRM work that is proactively considering climate change in its analysis of

risks, and thus demonstrating a CSDRM Approach. There are examples of the integration of local knowledge, climatological and meteorological information with social sciences. However, efforts to synthesise that knowledge to inform programming and policy in a proactive, systematic and structured manner remains a goal to be achieved. Practical limitations need to be addressed, such as the lack of local level or downscaled meteorological data or the fragmented nature of policy, which act as barriers to a coherent way forward.

How can DRM overcome barriers to change?

Many practitioners felt that, in the East African context, donors prefer, encourage and support short-term programming on emergency response. There are limited funds available for DRM practitioners to pursue an integrated approach and this is cited as one of the main barriers to a shift in approach. DRM practitioners are still trying to decipher how to overcome the predominantly sectoral focus of donors, who reinforce clear divides between development, emergency response, DRR and climate change. Moreover, gaining access to finances that can address all the three pillars of the CSDRM approach, without having to amalgamate different budgets, remains a very practical challenge.

The barriers can also be overcome by enhancing risk management and adaptation to climate change and variability using local and scientific knowledge and appropriate farming technologies.

Case Studies: In the Tanzania case study, a project implemented by INNADES formation Tanzania

Title of the project: Using local and scientific knowledge on seasonal climate Forecasting for enhancing community adaptation to climate Variability and change in drought-prone villages of Manyoni and Chamwino districts, showed the importance of integration of DRR, CCA and sustainable development.

Implemented Period two phases December 2008-April 2010

Background to the project and Challenges it seeks to address

The unpredictability of rainfall resulting from a changing climate is upsetting farming cycles, making agriculture an increasingly risky undertaking. Rainfall shortages cause serious droughts

and lead to crop loss, food shortages and famines, as well as competition and conflict over natural resources. The changing seasons make traditional farming calendars less reliable, calling for interventions to help farmers plan and prepare for the unexpected. This includes reliable weather forecasts for assessing when to sow and when to harvest, and seasonal forecasts on what to sow and how to manage the risks.

Recent observations, studies and research suggest that many semi-arid farmers have managed to cope with and even prepare for climate change. They have minimised crop failure through increased use of drought tolerant local varieties, water harvesting, extensive planting, mixed cropping, agroforestry, opportunistic weeding and a series of other traditional farming system techniques, including using local knowledge in weather and seasonal climate forecasting. This project is responding to the call for more action-research on the use of indigenous technology as a key source of information on adaptive capacity, particularly in relation to the inherent selective, experimental and resilient capabilities of semi-arid farmers in dealing with climate variability.

Activities

This project uses an action-research method and seeks to combine strategies for risk reduction with those for coping with the impacts of drought. Activities include: establishing demonstration plots and testing options for improving soil moisture retention capacity; innovative rain-water harvesting methods; encouraging the use of drought resistant crop varieties such as sorghum, sunflower and maize; alternative tillage practices (using tools such as the spring jembe, magoye ripper and ox-ridger) instead of local slash-and-burn practices; simple rain gauges and meteorological data to monitor rainfall and soil moisture and compare this with local forecasting knowledge. Combining knowledge from different sources involved collecting and analysing meteorological information, identifying and conducting participatory assessments of local knowledge on climate and weather forecasting, as well as climate risk assessments of the likely impacts of climate change on agriculture.

Using this information, community-based adaptation strategies are implemented to address and respond to vulnerabilities created by the changing climate. This includes training to strengthen the capacity of communities and local institutions to respond to the future disaster scenarios and supporting vulnerable communities to influence and engage in decision-making processes on adaptation strategies.

Partners

In order to facilitate a joint-learning process the project brought together various actors including: Trainers from Inades Formation Tanzania (IFTZ); extension officers from Manyoni and Chamwino District Agriculture Departments; Dodoma meteorological station; regional meteorological staff and researchers from Hombolo Research Institute; and local communities from four target villages (with an estimated population of 12,000 people) and their governance structures. The villages are: Makoja and Ikowa in Chamwino district, Dodoma region and Kitopeni and Mbwasa villages in Manyino district, Singida region.

Funder

Christian Aid through DFID's Innovative Fund on Climate Change Adaptation

Key Lessons

Improved seasonal climate forecasting, use of drought-resistant crops and moisture retention agronomic practices are risk management options that can facilitate improved adaptation to climate change. If used effectively, such practices can enhance decision-making and ownership of adaptation strategies by the users. Other risk management options, particularly concerning livelihood diversification, such as casual labour or cereal purchase and selling, are critically important for reducing vulnerability during seasons of low productivity. Farmers attach particular importance to the value of local knowledge for predicting seasonal trends and variation. However, understanding local perceptions of climate change requires a more in-depth, shared understanding of people's knowledge and perceptions of adaptation strategies.

The right balance needs to be struck between learning from other examples of effective risk reduction and adaptation and ensuring proper understanding of local livelihood systems in the target communities, to ensure viable and appropriate risk reduction and adaptation options are proposed and invested in. Attention must be paid to the need to conserve traditional forests and other sources of local predictors for sustaining local knowledge on weather forecasting. These include forests used for traditional ceremonies and those with abundance of plants and trees species used for forecasting purposes. Communicating information on disasters, risk and climate in a user-friendly way helps to increase awareness, understanding and responsiveness of communities and other actors to make changes to deal with a changing and uncertain climate.

Action research and learning processes, particularly when involving rural communities, requires experienced facilitators who have a desire to ensure a strong participatory learning process. Moreover, to ensure strong buy-in and increase the chances of success on the ground, the

project must support the priorities identified by the communities through action learning. Facilitating interaction between communities and other actors, particularly government departments, helps to ensure buy-in and scale-up of innovative ideas. Demonstration farms provided an opportunity to influence the government, which can adopt the lessons and replicate them on a larger scale.

Working across the pillars

The intervention is working across the three pillars but best demonstrates how to interlink aspects 1b, 1c and 2d.

1b Periodically assess the effects of climate change on current and future disaster risks and uncertainties.

The project facilitated a process of analysing and assessing meteorological information, data and trends on climate forecasts relevant to the project's target villages, as well as devising an inventory and participatory assessment of local knowledge of climate and weather forecasting. This process involved gathering relevant scientific data from meteorological and research institutes, which were then interpreted and presented in plain local language understandable to community members. The process also involved community members measuring local indicators of weather patterns and establishing what type of information about rainfall and climate variability would be most useful to inform risk reduction and adaptation planning. An example of the complementarity of data from different sources is shown in the prediction of rainfall patterns and the seasonal migration pattern of birds. The predictors of bird migration, known locally as Yobwa and Koronga, have been proved by meteorological scientists to be perfectly correlated with the Inter Tropical Convergence zone – the dominant cause of rainfall patterns in East Africa. This confirmed the reliability of local predictive methods and strengthened the case for communities to continue applying their local methods and indigenous knowledge for forecasting. However, more research is needed to ascertain the potential of other local predictors of weather and climate forecast in order to understand how local capacities for predicting can be supported by scientific sources.

1c Integrate knowledge of changing risks and uncertainties into planning, policy and programme design to reduce the vulnerability and exposure of people's lives and livelihoods.

The process of information collation described above is a key component of participatory climate risk assessments undertaken by communities at risk of increased vulnerability. The project focuses on the agriculture sector and rural livelihoods and uses these climate risk assessments to guide the development of adaptation options for managing potential drought

risk. The risk assessments then become the foundation on which participants develop community-led adaptation strategies that seek to reduce and mitigate the risks identified.

2d Use tools and methods to plan for uncertainty and unexpected events

Participatory tools and methods were used for climate risk assessment and forecasting. For example: open-ended interviews and focus group discussions with farmers, elders and local experts; checklists to access the knowledge bank of local communities; and tools such as timelines, seasonal calendars, Venn diagrams and preference ranking. Checklists and interviews were also used to gather information on how seasonal forecasts are actually used. These were supported by fieldwork which employed ethnographic research methods to collect and assess local methods and indicators for climate forecasting used by farmers. Two guides were also used, with some tailoring and modifications: the Community Risk Assessment Guide; and the facilitators' training guide, *Climate Change and Variability: Adaptation to Drought* (Ramamasy and Baas, 2007). The use of participatory tools helped to mobilise an exchange of ideas and decisions among different community members and others, and fostered a sense of mutual commitment to addressing identified risks.

Challenges faced

Communicating scientific information and data on adaptation options in a user friendly format is a challenge, but is vital to increasing the awareness, understanding and responsiveness of communities and other actors to the potential risks exacerbated by a changing climate. Overcoming this challenge requires significant time and attention to detail, to ensure the data is relevant for each particular local context.

Using evidence gathered from the project to influence the development of government policies on climate change adaptation and disaster risk management continues to be a challenge. This is partly due to the length of time it takes to demonstrate impact and partly due to the need for dedicated expertise and skills in advocacy and communication in order to be able to use lessons learnt to effect change at this level.

A significant constraint and on-going challenge for the implementation and monitoring of the project is a lack of available, accessible meteorological information during the rainy season. Timely availability of data, together with indigenous knowledge, helped farmers improve the planning of their agricultural activities. Weather stations are needed in each village to monitor

temperature, evaporation and rainfall and their changing trends, due to increased localised variability of rainfall patterns, even between neighbouring villages.

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4.1 Common challenges across Africa

The extensive consultation outlined in this report leaves no doubt that there is substantial appetite for a new, climate-smart disaster risk management approach. As one participant concluded, the real added value of this approach is its potential to break down the artificial thematic boundaries that are impeding current efforts to better understand and manage disaster risks: 'It is exciting to have an approach that could be owned by all communities of practice'.

The CSDRM approach will help make meaningful links between humanitarian policy and practice and areas of development which are seeking to deal with underlying vulnerabilities and exposure to hazards: 'Adaptive capacity issues are at the centre of the CSDRM Approach, in a way that isn't captured by other [disasters] frameworks'.

Local experiences and lessons should be recognised, adopted and integrated into ongoing and future initiatives: 'Disasters and development organisations must see themselves as learning agents, not change agents; our role is facilitation'. East Africa consultation participant

The consultation process has highlighted challenges in all three regions, from which the DRM, climate and development community can all learn. For humanitarian action to truly target the most vulnerable, DRM must address the challenges set out.

From the initial testing and investigation of the CSDRM approach set out in this report, a series of key challenges are evident, from which we can draw initial conclusions, as follows.

- The integration of climate, disasters and development interventions is occurring on an ad hoc basis. Guidance is needed to aid practitioners to overcome institutional constraints and foster collaboration.
- Adaptive capacity is central to improving ways of working and will require systematic investment in skills and innovation.
- Rights and access to services provide the foundation on which DRM can be promoted.
- Dealing with changing risk and uncertainty requires new knowledge that can be blended and brokered in a way that aids effective implementation.
- Assessing and integrating new knowledge is a challenge that requires partnerships, new technical skills, tools and procedures and the inclusion of skilled intermediaries in decision-making processes.
- Climate-smart DRM will bring benefits. Greater awareness is needed around the potential for environmental harm caused by DRM interventions and the choice of climate-smart alternatives.
- Donors and governments must support flexibility and innovation, and demonstrate their own commitment to a joined-up, strategic, collaborative approach to CSDRM.

‘The DRM community hasn’t been good at looking at long term timeframes or capacities to enhance people’s ability to progress over longer terms; this approach encourages us to do this. The CSDRM approach challenges us to have a forward thinking analysis’. East Africa consultation participant

Next steps: the future of CSDRM

The reality of climate change challenges the DRM community to meet new challenges and plan in different ways. CSDRM integrates key pillars of action and provides guiding questions to identify gaps and opportunities for new collaboration. Climate change is a driver for the change and innovation in the DRM sector. The SCR programme recognises this opportunity and will focus on deepening the evidence base for a CSDRM approach and advocating for its uptake by practitioners, policymakers and academics.

Future outputs include:

- a) Guidance on implementing the 12 actions of the CSDRM approach, drawing on the rich existing guidance already available.

b) A multi-media evidence base of CSDRM in policy and practice, drawn from across the ten SCR focus countries.

c) Reflections from organisations and policy departments about their experiences of applying CSDRM in their own work.

d). In Kenya, Sudan and Tanzania the project will introduce, lobby and advocate for the adoption of climate smart DRM approach by key stakeholders including key government departments, lobby for integrated policy changes by government institutions and civil society, document best case studies and strengthen evidence base on the approach.

The above outputs will be achieved by working closely with approximately one hundred organisations that have already been involved in the consultation process. This 'friends of SCR' network will also help to influence other key initiatives that are attempting to integrate DRM, climate change responses and development and encourage them to explore the benefits of adopting the CSDRM approach. The SCR web platform will be a valuable source of resources on the convergence of disasters, climate change and development – through sharing field cases that best demonstrate aspects of the CSDRM approach, information about the latest and forthcoming evidence, videos, audio material and presentations from SCR consultations and spaces where the challenges and ways of applying CSDRM in different contexts are discussed.

'When I first saw the CSDRM approach I thought it was a bit scary as it demands multi-institutional approach

to implement it - but I want to understand it further as it has made me rethink the way we work'

Participant at East Africa Consultation1

Leisa Perch

Extended Abstract: Reconciling participation and benefit-sharing: Policy implications for how Africa adapts to climate change

AfricaAdapt Symposium March 9-11,2011

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Key Words: Participation, Benefit-sharing, Adaptation, Africa, Social Risk

INTRODUCTION

The International Policy Centre for Inclusive Growth (IPC-IG) defines inclusive growth as “both an outcome and a process. On the one hand, it ensures that everyone can participate in the growth process, both in terms of decision-making for organising the growth progression as well as in participating in the growth itself. On the other hand, it makes sure that everyone shares equitably the benefits of growth. Inclusive growth implies participation and benefit-sharing. Participation without benefit-sharing makes growth unjust, and sharing benefits without participation makes it a welfare outcome” (IPC-IG, n.d.). This is used as the principle methodological lens for defining participation and benefits-sharing in this paper.

In this context, participation is understood to be beyond consultation and the securing of consent; it denotes the seeking of inputs before a policy decision or strategy is formed, finding out how the various stakeholders perceive the problem and how it will affect them. It also means their active engagement in defining solutions and trade-offs as opposed to these being decided for them. O'Brien and Wolf (2010: 233) note that “*Vulnerability is not simply about the negative material outcomes associated to climate change ... Consequently, what is considered legitimate and successful adaptation depends on what people perceive to be worth preserving and achieving, including their culture and identity*”. Benefit-sharing equally can be complex and involves considerations of benefits as privately-derived (specific to an individual or a group) and publicly-derived (those which benefits society as whole or a cross-section of interests e.g. through public action) and speak to adaptation as an outcome and adaptive capacity as a process. In the case of the latter “benefits” are likely to be intangible and thus harder to “count” but not impossible.

In the context of climate change, such considerations are shaped also by macro structural factors such as the supply and allocation of resources and also in terms of how these are allocated and who has access, who does not and who has more and who has less. Broadly, the implications resonate at the level to which the global influences the national, the national influences the local and the local influences the global through the national; the inputs and outputs are mutually-reinforcing.

For Sub-Saharan Africa, as elsewhere, this is a complex undertaking. Key features which shape development in Africa include, but are not limited to, (i) significant energy poverty; (ii) persistent droughts and or floods, intensification of rural poverty and working poverty amongst small holder farmers particular women farmers (IFAD, 2010); (iii) relatively low adult literacy levels, on average 60% (Ibid); (iv) inconsistency of access to food and quality food with high levels of under-nourishment (Ibid); (v) lower life-expectancy at birth than other regions and (vi) multiplied challenges in health and nutrition due to lack of access to safe water and sanitation, high maternal mortality and high prevalence of HIV and AIDS. When climate change is added on top of these realities, the following inter-connections between growth, gender, poverty and the environment define the shape of the challenge in achieving inclusive and sustainable development:

- Maintaining adequate levels of food product is important for household security, and for sustaining health and education gains which then contribute to productivity and production both locally and at the macro level. It is difficult to sustain growth in the context of a labour force which is under-nourished and susceptible to a number of illnesses.
- Continued food production both as a source of good food, economic security and growth depends significantly on adequate and consistent access to water. 96% of Sub-Saharan Africa's population is dependent on rain-fed agriculture (Madzwamuse, 2011) and the link between the lack of water and crop failure is well known.
- Given the high participation of women in agriculture, small farm production and fish processing, the failure to address structural inequalities such as access to credit, lack of tenure or insecurity of tenure and women's burden of care will likely result in it being that much harder for them to sustain a livelihood and for these activities to contribute to growth in the rural sector.
- The enhanced production of food and the expansion/diversification to non-farm and other productive sectors is constrained significantly by the lack of access to energy. In this way, mitigation to climate change can significantly enable adaptation to climate change and as well as socially-sustainable development.

At the household level, systemic vulnerabilities arising from income inequality and volatility, lack of opportunities, unequal distribution of and access to resources and a high dependence by the poor and vulnerable on climate-sensitive sectors (Perch et al, 2010) add to the urgency and difficulty in defining the right "mix" of actions. By seeking to better understand the how "climate-compatible development" (CCD) - tackling both vulnerability and green growth in the same policy framework, as well as the relationships between them (CDKN, 2010) - could work, the paper examines four issues:

- Resource Access and Allocation (From Global to Local): Signposts for Structural Inequalities including moving the discussion from burden-sharing to benefit sharing;
- Policy and Practice: Minding the Gap;
- Reconciling Participation and Benefits-sharing: The Potential of Social Technologies; and
- Policy Implications for How Africa Adapts: Focusing the Agenda to take account of social risks and social benefits

DATA AND METHODS

Taking Sen's (1999) argument that development policy needs to move beyond the existence of primary social goods, to the capacity for people to use them, the paper takes the position that

adaptation (and mitigation) must bring direct benefits to the poor and vulnerable and that to do so requires more than technology and finance.

Thus, the paper explores how definitions and concepts of vulnerability are likely to lead to certain forms of participation and involvement of the poor and vulnerable and at what levels and consolidates these in a table. It does this by analyzing the literature, policy guidance in the UNFCCC, the WB and GEF and the Adaptation fund, governance arrangements, NAPAs and select adaptation projects through two key questions: “who participates, how this is decided and why they participate” and “how the poor and vulnerable participate and when”.

20 of 32 NAPAs which were examined were from Africa and these were selected based on their availability in English for more rapid analysis and consolidation. The assessment of the NAPAs was carried out using defined criteria based on words and expressions used in the NAPA e.g. poverty, the poor, women and gender, ethnicity or ethnic groups, vulnerability or vulnerable groups as well as participation. This is based explicitly on what is reported in the NAPAs themselves.

To better understand “benefit-sharing” in practice, the same NAPAs are explored and combined with a condensed analysis of social risks emerging from critiques of the Clean Development Mechanism and REDD. This helps to better define the links between adaptation and mitigation meet in the context of development and the types of risk which currently exist from the failure to translate policy into practice and thus potentially undermining the sustainability of investments. In response to these emerging gaps, a number of “co-benefits approach” –like interventions are analyzed to consider the extent to which they provide lessons in adopting a broader development approach in policy. The potential for social technology transfer to serve the broader policy framework for reconciling climate change is also briefly explored.

RESULTS

From the above, the following results and policy implications, amongst others, are identified:

- The absence of a consistent, sub-national frame or micro-level scale of analysis, which takes account of the type, source and shape of vulnerability, complicates verification of the impacts on and benefits for the poor and vulnerable within a country. It also makes it much more difficult to gauge the cumulative impact of adaptation efforts at the global level which is important for treating with global climate change.
- The current structure of global public policy makes for some contradictions in terms of efforts to respond to the needs of the poor and vulnerable in the context of participation and benefit-sharing. The multilateral system tends to take it for granted that countries represent all the interests of their citizens.
- “Who participates and why (re the interests they represent)” was often not fully reflective of the inter-secting realities of poverty, gender and ethnicity. These were generally defined by geographical location or income or by institutional representation. Often, scope (breadth of the problem) was better defined than scale (depth of the problem).
- Countries, as represented by their NAPAs, were generally able to define the link between *climate change and the environment* (the largest group by a wide margin), a little less so on *climate change and poverty* (second largest) and the least on *climate change and gender* (the smallest number). Thus, making the link between climate change and other

environmental benefits (which helps mitigation), and climate change and poverty, has been easiest in the context of climate change and development. African NAPAs seemed to do better on tackling climate change and poverty more consistently and also on vulnerability (see Table 1 below). Though they were largely consistent in recognizing women’s specific needs and gender differences, assigning this priority was only slightly better than non-African NAPAs.

- Of the 12 NAPAs which demonstrated a much broader multi-dimensional framework to adaptation above the rest of the NAPAs, 11 were from African countries. This suggests that broadly Africa may be making doing better in translating the spirit of climate-change and development. Still, there is a need for caution as good analysis does not always mean good practice.
- Where NAPAs from Africa seemed to reflect a policy struggle was on the issue of ethnicity which does have a complicated and complex context in the region and potentially makes it difficult to mediate between particularistic demands and needs in a national context or at arriving at strategic actions which can benefit across vulnerabilities and inequalities.
- There is no clear or broad-scale effort in NAPAs to-date to address “safeguards” as a risk management approach as seen in REDD more than elsewhere. Despite some success on “climate change and development”, a number of consistencies exist between defined actions and priorities and what the data tells us about human development in countries.

TABLE 1

Analysis of Inclusion by Group or by Vulnerability in NAPAs to Date

(see coding process in Annex 2)*

Inclusivity factor	Yes - % of available NAPAs	No - % of available NAPAs	Yes - % of African NAPAs reviewed	No - % of African NAPAs reviewed
Mentions gender	78.	22	80	20
Prioritises gender	37.5	62.5	45	55
Mentions poverty	97	3	100	0
Prioritises poverty	81	19	100	0
Mentions ethnicity	22	re78	15	85
Prioritises ethnicity	97	3	0	100

Inclusivity factor	Yes - % of available NAPAs	No - % of available NAPAs	Yes - % of African NAPAs reviewed	No - % of African NAPAs reviewed
Lists vulnerable groups	65.5	34.5	75	25
Identifies participatory actions*	56	6	55	45

* NB. It is important to note that for the last element, it was often not clear for many re the level of participation. Thus we used "not clear" and "No" above speaks to this rather than a lack of participation in itself.

- Soft-adaptation options such as education and literacy have largely not been prioritized (only 1 out of the 11 top African NAPAs denoted education as a key pathway). This can limit participation and benefit-sharing if one considers the role of education and knowledge as a key factor for being able to engage in the dialogue and more critical define risks and benefits for one-self.
- Adaptation is still being relatively done for the benefit of the poor rather than the experience and successes of the poor (in coping with change and volatility) also serving as a resource in itself.
- Benefit-sharing in a multi-dimensional sense implies that risk is shared and potentially mitigated (i.e. linked to risk-sharing principles), the need for greater attention to the specialized (complex) circumstances of vulnerable groups is two-fold. A de-link between benefit-sharing and risk-sharing potentially undermines the sustainability of benefits – either due to them being impacted upon or wiped away by other shocks, negated by other realities (i.e. earnings by women that they are unable to spend due to inability to open bank accounts for example) or which are superficial in nature (these are largely communal or group-owned and no real impact/change occurs in assets, livelihood opportunities and development status).
- While the mitigation discourse tends to be framed largely in the language of "trading", "offsets", and "transfers", the one area which has been neglected is the transfer of social technologies. By this, reference is made to the use of social science approaches (which may include programmes, methodologies, techniques e.g. social protection, conditional cash transfers) to inform the necessary inter-sectoral policy and cross-disciplinary research which is needed to tackle climate change.
- The forced exodus of the rural poor to more urban environments and cities presents a process-oriented and scalable impact of climate change. This has been a key gap to-date in adaptation approaches and lessons from Zambia in 2010 and other countries highlight the need for urgent pro-active solutions in terms of urban planning and expanded sanitation services as well as complementary efforts to incentivize rural development including off-farm income-generating activities.

CONCLUSIONS

One of the key conclusions from the review is that perhaps one of the greatest flaws in policy efforts to date, of which climate change is the latest example, has been the inability to effectively treat the economic, environmental and social dimensions as equally important and mutually supportive preconditions for development. Another broad failure of efforts has been to assume that benefits for the poor are automatically derived in public policy and that poverty reduction and conservation are natural bedfellows. This has clearly not been the case. **A clear focus on the additionality of development-oriented adaptation and mitigation interventions is needed.** The linking of sustainable livelihoods approaches to social risk management mechanisms, writ large, can potentially close this gap by facilitating the recognition of the links, the necessary mediation between short and long-term and direct (micro) and in-direct benefits (macro) and by ensuring that benefit-sharing is complemented by risk-sharing.

Specifically, the paper argues that, juxtaposed to the gaps between policy and practice in adaptation, existing multi-dimensional policies such as public works programme (South Africa's EPWP and Ethiopia's PSNP and food security programmes such as Purchase for Progress (P4P, coordinated by WFP) offer important policy contributions to adaptation and mitigation efforts by securing returns in efficiency, effectiveness and equity. In the context of short-term and long-term needs, they can serve as pathways for mitigating social risk through reduced sensitivity to shocks by enhancing income security, reduced poverty and lower inequality and more broadly helping to increase adaptive capacity.

Finally, the paper identifies four significant areas of policy action for Africa: (i) **Programme Convergence (based on the co-benefits approach); (ii) Policy Coherence (between economic, social and environmental policy); (iii) Participation through public instruments for Resource Allocation and (iv) Benefits-sharing via Public Actions.**

In summary, the paper argues that Africa, like elsewhere, faces a triple challenge for inclusive and sustainable development. The first is to mitigate the worst impacts of environmental change, in whatever form it takes, including climate change. The second is to safeguard the social and economic progress achieved, including the sharing of the risks and benefits of development actions, avoiding both "free riding" and "overburdening of the poor". The third is to ensure the compatibility of development actions at various levels. It makes the point that solutions that cater only to needs such as finance, technology, infrastructure or access and availability, but that do not address "agency" i.e. the capability to deploy such resources when needed, miss a significant piece of the puzzle (Perch, 2011) and potentially create other challenges which require additional finance and resources. Successful policy, it

suggests, will depend on a delicate balance of effective steering by government and rowing by the private sector and civil society.

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