# Climate-Eval

**Sharing good practices on climate change and development evaluation**

# A Framework for Monitoring and Evaluating Adaptation to Climate Change

Haris E. Sanahuja, Consultant

August 2011

# Tracking Progress for Effective Action

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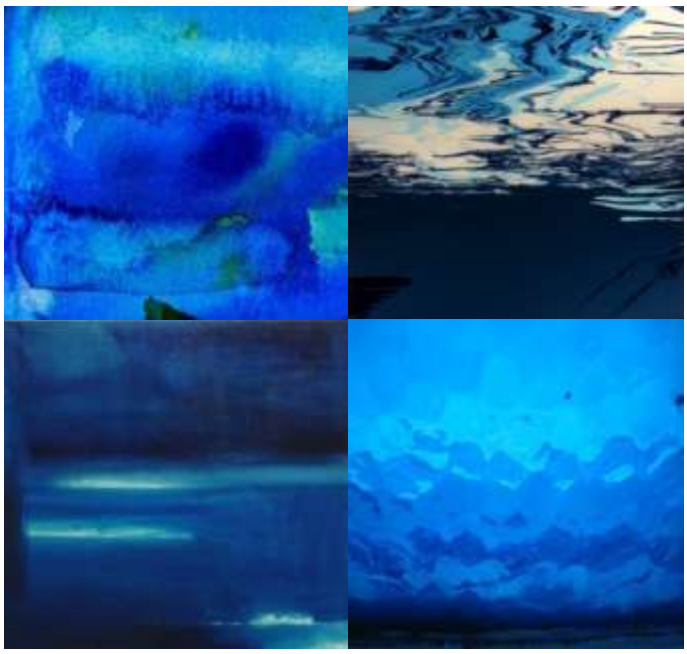

Community of Practice

Global Environment Facility

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# Contents

# PART ONE – Background and Conceptual Discussions for M&E of ACC

## Foreword

This report is the final output generated from a short term consultancy with the purpose to, *with the GEF, Climate-Eval Community of Practice*, build a framework for guiding monitoring and evaluating of adaptation to climate change (Disaster Risk Reduction focus) efforts. ***For simplicity in this report, when the term Adaptation to Climate Change or ACC is used, it will be implicit that there is a focus or slant on Disaster Risk Reduction (DRR).***

This framework paper is largely about the application of sound monitoring and evaluation methodologies and processes to initiatives of adaptation to climate change. It is intended as a practical guide to allow for more fluid progress towards capacity development for monitoring and evaluating adaptation to climate change interventions.

There are three parts of the report with numerous sub-sections and appendices. In Part One, the functional structure of the framework is laid forth, primarily. Following, a background context is set with a general review of much of the present thinking, in terms of conceptual discussions. Further, Part One looks at common visions and overall methodologies related to M&E for ACC. Part Two examines key challenges and opportunities for monitoring and evaluating adaptation to climate change. Part Three is highly practical, and presents ideas behind like-minded and key frameworks for M&E for ACC, including:



a. UNDP´s Proposed Framework for Monitoring Adaptation to Climate Change;
b. IDS Sussex GEF DFID: Evaluation of Adaptation to Climate Change from a Development Perspective; and
c. UNFCCC 2010: Synthesis Report on M&E for ACC.

Additionally, numerous guiding questions for situational assessments, as well as for capacity development, are presented. Also included in Part Three, is pertinent information on the development of sound indicators, with sample ACC indicators selected from the field, as examples. Finally, Part Three presents several methodological case studies, looks at the commonalities from nine national adaptation frameworks, and concludes the main body of the report with summary remarks. The Appendices include a Compilation of Case Studies, with nine examples of National Frameworks for Adaptation, the elements of National Adaptation Plans of Action (NAPA´s), as in accordance with the IPCC / UNFCCC processes, a number of sub-national relevant case studies, and then highlights regarding key stakeholder groups. A directory of related websites is also included in the appendices.

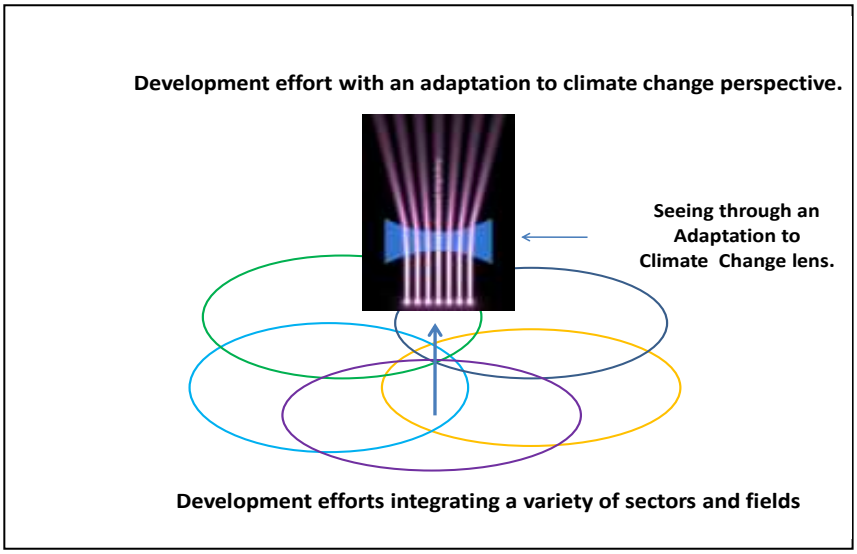
# 1. Introduction and Methodology

> *From,* ***Lessons on M&E from GEF Climate Change Adaptation Projects, Ivan Dario Valencia*** *"The goal for an M&E system for adaptation is to identify the aspects that are working, those that are not working, and the reasons why, as well as providing mechanisms and feedback to adjust the adaptation process accordingly." (van den Berg, 2009, p. 269)*

Climate change is one of the most important global issues, with broad and far reaching ecological, social, economic, and political impact. In order to cope with the effects of climate changes, various adaptation efforts are being implemented. To understand the value or efficacy of these interventions, sound monitoring and evaluation of these interventions is imperative for ensuring results, cost-effectiveness, and impact-level outcomes.

The elements necessary for conventional project M&E will all generally apply to ACC. One fundamental difference is that for ACC efforts, one will need to view the entire process through a climate change lens. Adaptation to Climate Change is not a discreet subject area, but rather joins into a number of other existing areas, such as Disaster Risk Reduction (DRR), integrative planning, environmental management, and also shares the waters with other branches of climate change. Where one subject area, for example, such as DRR, generally merges with another, such as ACC, then *overlapping* would result. There would be other areas, for example, where DRR and ACC, would be *divergent* and go their separate ways.

It is neither possible, nor beneficial, to separate Disaster Risk Reduction from Adaptation to Climate Change from Development generally, nor is it reflective of reality to represent the context in some form of Cartesian system, and this will be discussed at length in the conceptual section of the report. At the same time, theorists and practitioners alike, do need to structure and organize ideas in some manner, and there are certain distinctions which make each sphere unique, yet the areas of crossing over and merging, are in the vast majority. Just as one needs to see development through a climate change lens (see diagram below), this study has been approached as looking at monitoring and evaluation of adaptation to climate change efforts through a disaster risk reduction lens.



In keeping with a more holistic viewpoint, and towards maintaining an integrative methodology to the study, a comprehensive matrix was created in stage one of the Consultancy. This matrix is meant to ensure that the approach to constructing all outputs leading up to, and including the framework, which is the final output, are done in as comprehensive and rigorous a manner as possible. Towards this effort, a number of tasks were planned, the first being an assessment of the documentation. This was done in order to ascertain which documents would be most applicable from the approximately 400 file library of Climate-Eval, *Community of Practice,* which is hosted and moderator by The Evaluation Office of the Global Environment Facility (GEF). A list of thirty (30) documents, related to Disaster Risk Reduction and Adaptation to Climate Change were deemed to be applicable and this list was distributed to the *Community of Practice (CoP)* for their interest and comments.

When analysis was started, a simplified method, based upon the ideas in the matrix to ensure continuity and flow, was ascertained for extracting the most salient points from the thirty documents reviewed. **Evaluating Climate Change and Development, Rob D. van den Berg and Osvaldo Feinstein, Editors - *World Bank Series on Development, Volume 8*,** 2009 by Transaction Publishers, New Brunswick, New Jersey was also reviewed.

Each report was reviewed against this list of questions and ideas, as a general guide, yet many times, new information, apart from the guiding questions was recorded also. The information collected was organized and summarized, and then edited into and Interim Summary Report. (Please see Annex One.) Findings were translated into Findings – Challenges, and Findings – Opportunities, for ease of reference and brevity for the readers. Practical examples were presented as encapsulated briefs from the field, to illustrate real life issues and opportunities.

Looking at the thirty evaluations and reports carefully and mapping out the information vis a vi a matrix, patterns emerged. Lessons learned, challenges expressed, potential opportunities, innovations, good practices, process experiences and others were summarized in the matrix and then compiled into a summary report (included as an Annex of this document).

Once the analysis of the GEF Library was complete, a search outside to other sources was undertaken to help inform the development of the framework presented in this document. This additional material was shared with the *CoP*, again for their interest and comments, and then this new documentation was analyzed, and incorporated into findings thus making the development of the Framework more comprehensive.

Once all feedback was collated, a Final Draft Framework Guiding the Monitoring and Evaluating of Disaster Risk Reduction/Adaptation to Climate Change Efforts, is presented herewith and will be shared one final time to the *CoP* for their final comments vis a vi a webinar, with the GEF Climate Eval Community of Practice. The Final Framework will then be finalized and distributed accordingly.

The methodology used throughout this study was one mainly of action research or action learning. The undertaking of the review of the thirty evaluations and related documents from the GEF - many of which are significant in terms of partnerships, ambition, scope, and funding – presented, first hand, a fairly good thumbnail sketch of what is being implemented under the name of adaptation on the ground today, at least within a circle of some of the main development partners.

Once an understanding, even if still rudimentary and based upon a sample of only thirty evaluations, was gained based on this analysis and compilation, what became quite clear was the chasm between

what appears to be the thinking about adaptation amongst the organizations working at regional and international levels, and what is actually going on in the field. That is not to say that there is any great discrepancy, but rather to note that much of the literature being generated at the headquarters level of many of the regional and international organizations, from all the main arenas - UN, donor, NGO, academic and research – remains still far more conceptual in nature, than what appears on the ground. The literature generated by the national governments themselves, is on the whole, more practical and action oriented.

This document, as a Guiding Framework for M&E for AC, which is presented herewith, was developed with the intention of filling the niche of meeting the interest and needs of the everyday practitioner. Today, much of M&E for ACC today remains mostly in hands of donors or international banks and organizations. While this is appropriate and necessary at this time, there exists a continual drive to expand the responsibilities to adapt to climate change, and the mechanisms to monitor and evaluate adaptation interventions, throughout communities, sectors and nations. As ACC evolves and responsibilities shift from donors to nations, the need for capacity development for M&E of ACC among national multi-sector practitioners is vital.

Anticipating the questions an ACC practitioner would be asking themselves when considering capacity development for M&E for ACC to be realized, this report is written as a helpful guide that distills much of the key related literature and brings real life issues and examples into the discussion. It starts with a conceptual discussion about the scope of ACC and how it inter-relates with DRR and with development. Examples from the field are used to illustrate cases where structures have been created based on hybrids of climate change and development and also for climate change and DRR. Following, three main existent frameworks for M&E for ACC are described. Presenting them in brief and very simple summary form, allows the reader to access this information, which is unlikely they would have fully digested previously. The synthesis allows the common elements of the three main frameworks to be clearly seen, and their uniqueness discerned.

Once the terminology and concepts are presented, and then the three main frameworks analyzed, the Guiding Questions are presented, along with a substantial section focused on the many aspects of indicators and including examples of indicators employed. This is followed by a summary of numerous Adaptation to Climate Change Frameworks developed by national governments and partners from both developing and more developed countries. This summary provides the reader with an idea of what adaptation looks like at the national strategic planning level, thus making the idea of adaptation more discernable. Once the reader has a clear concept of adaptation, the idea of developing adequate M&E structures and mechanisms is far less daunting. There are a multitude of interesting ideas portrayed in short boxes throughout the report which highlight key points drawn from many sources of literature. Key websites of interest to M&E of ACC are also presented.

In terms of added value, this report compiles sound bites from much of the key literature related to M&E for ACC and presents many ideas, from many different organizations and parts of the world, representing efforts at community, sub-national, national, regional and international levels and with examples taken from all sectors.

Drawing upon good practices of various adaptation interventions world-wide, to develop this guidance tool, it is intended that the Framework become highly practical for practitioners. It is a simple guide, written to assist the ACC practitioner in taking action. As seen in the evaluations,

reporting the current challenges and capability for M&E for ACC at this time, there is need to target efforts in meeting these needs with realistic expectations. Many times, the political will, sustainable funding, skilled human resources, practical information, network and other elements necessary to build capacity for M&E for ACC, remains less than ideal.

In sum, after review of what the practitioners in the field are facing, along with quite extensive review of the literature related to building frameworks for developing M&E capacity for adaptation to climate change efforts, it appeared most needed to create a tool which is unique, yet complementary to the main frameworks existent. While the emphasis of the report rests on discussing monitoring and evaluation of adaptation, a discussion of adaptation in a general sense is also provided.

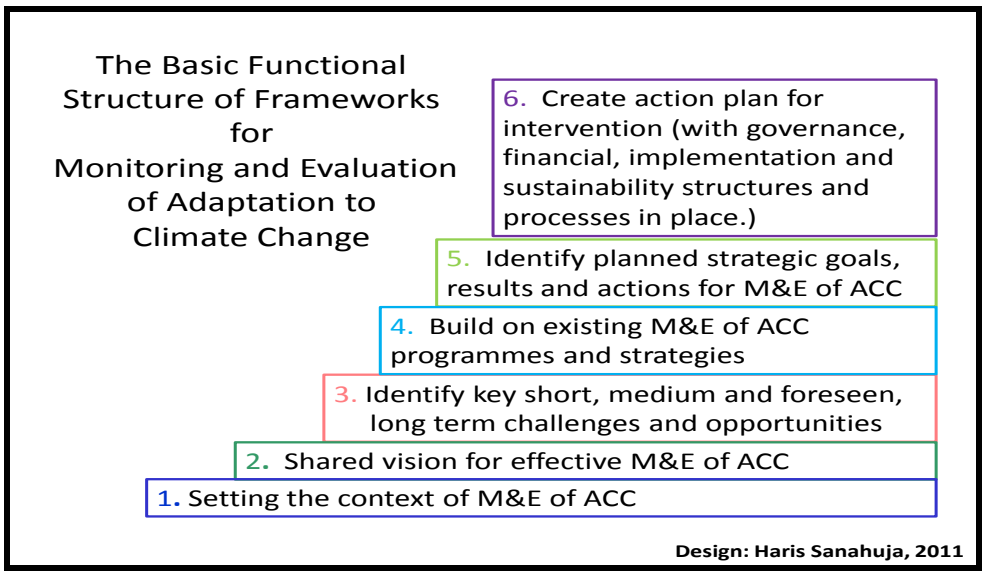
## The Functional Structure of Frameworks for Monitoring and Evaluation of Adaptation to Climate Change Interventions

As seen in the figure below, building a framework for capacity development for monitoring and evaluation adaptation to climate change interventions is a step by step process. There are six principle steps, from gaining a fully comprehensive understanding of the context at hand, to the eventual implementation of an action plan for intervention. They are as follows:

1. Setting the Context
2. A Shared Vision for Effective M&E for ACC
3. Identifying Key Challenges and Opportunities
4. Building on Existing Programmes and Strategies
5. Identifying Planned Strategic Goals, Result and Actions
6. Creating an Action Plan for Intervention



Such a framework, once drafted, proposes a collective vision, as well as guiding principles and areas for strategic intervention, that will enable the development of the M&E for ACC strategy and action plan. This co-produced comprehensive and coherent framework, inclusive of multi-stakeholder participation and ownership, articulates the context, and sets out a common vision, as well as key challenges, opportunities and priorities for furthering M&E for ACC. The framework goes on to work toward action planning by providing guiding questions for assessment and capacity development along with key information on indicators. Further, this framework builds on current thinking and well regarded like-minded initiatives. From theoretical and field research, from a wide array of sources, the framework identifies key, short, medium and long–term challenges, and also defines strategic focus areas for intervention. It is envisaged that the information and examples provided in this Framework will facilitate preparing and planning for action, including at some point, the preliminary stages of the development of a detailed action plan, resource mobilization, roll-out, and implementation.




# 2. Setting the Context

## 2.1. What is adaptation?

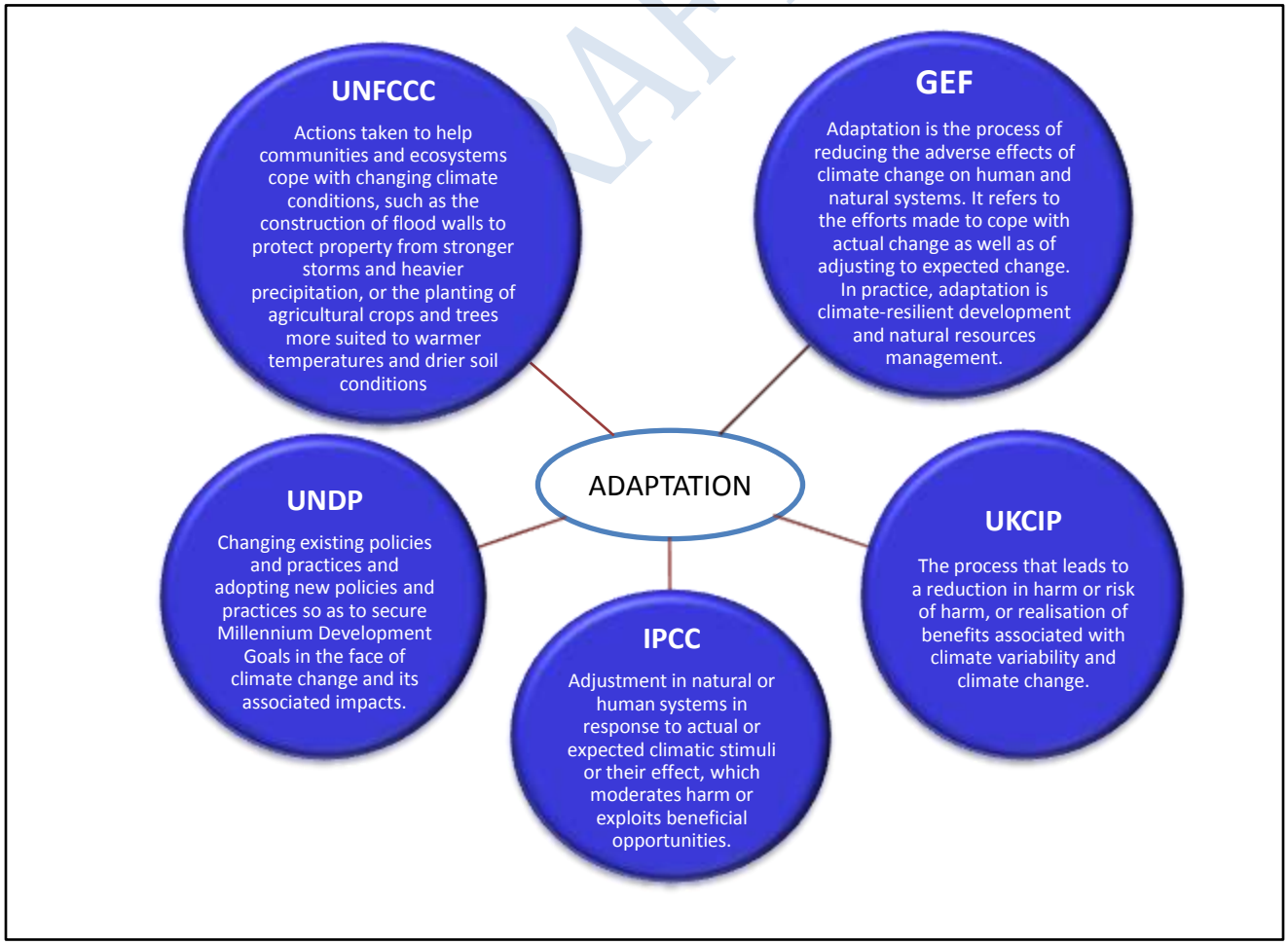
Four years ago, in 2007, the intergovernmental Panel on Climate Change (IPCC) concluded that the warming of the climate is now "unequivocal".[1] Climate change is upon us. Even if today, we stop emitting carbon emissions into the atmosphere, global average surface temperature will continue to rise, causing serious climate-related hazards. Consequently, we must adapt - adapt to extreme weather events, rising sea levels, droughts, loss of natural resources, threats to food security, an increase in natural resource conflicts, the acidification of the ocean, and the spread of infectious diseases, and all the other risks and hazards born of a changing climate.

There has been, and continually will be, disproportionate impact of climate change. Climate change will disproportionately impact the world's poorest nations, despite the fact that they are the least responsible for carbon emissions. The world's rural poor are the most vulnerable to climate-related hazards given their reliance on fragile ecosystems and their lack of financial or institutional resources to withstand the effects of climate-related hazards. For development agendas to be successful, especially those focused on poverty alleviation, adaptation efforts must focus on building the resilience and decreasing the vulnerability of the world's poorest nations to the impacts of climate change.

[1] Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change Available at <IPCC, 2007: Climate Change 2007: The Physical Science Basis. >

The number of challenges associated directly or indirectly with adaptation to climate change are many. Largely they relate foundationally to the nature of ACC itself. Indeed it is a tall order, with ACC being a fairly new, only somewhat predictable, and emerging arena of research and development, which affects all sectors, and which requires all stake-holders to take action at a fairly urgent pace, and which is also affected by highly influential economic, industrial and political factors and interests. The scope of the challenges before the global community at this nexus in history, and the magnitude of the consequences of collective inaction, are of such proportion that psychological factors have also come into play, and many turn away from thinking about, and working on, climate change issues and action.

At the same time, governments, municipalities, business, NGO´s and individuals are going ahead and also gathering formally and informally, and are taking leadership in adaptation to climate change. But continued and expanded capacity development for adaptation to climate change requires increased and sustained resources. One of the best ways to access resources is to show, with as rigorous data as possible, that the ACC efforts being made have indeed produced the anticipated results, and that these results are showing impact, or at least progress towards impact. Monitoring and evaluation of ACC initiatives, for their life cycle or even beyond their life cycle, with adequate and credible M&E methodologies, is the best way to ensure measurement of positive gains and impact level results for adaptation to climate change.



Adaptation is being defined in a variety of ways, many of which contain the same or similar concepts. Attempting to corral the myriad of elements, aspects, scales, sectors, stakeholders, process and other interests which adaptation need contain, is neither possible nor wanted. At the same time, some form of conceptual organization and structure is necessary. Addressing adaptation to climate change demands holistic thinking and action. Multi-discipline, multi-sector and multi-stakeholder arenas require different ways of thinking and working together than do conventional, more structured thematic areas. The diagram below is crafted to demonstrate how organizations are working towards defining adaptation at this time.

### Europe gets Together with Overarching Guiding Principles for Adaptation

Guiding Principles offer a wider scoped and open ended structuring for ACC, which greatly assists in broadening any definitions being used. Being at an outcome level generally, guiding principles are especially useful in acting as unifiers for ACC action at all scales. Since they are general in nature, they act as universal goals, which greatly help harmonize and streamline efforts. In 2010, Europe produced the following Guiding Principles for ACC.


**Source: Guiding Principles for Adaptation to Climate Change in Europe,** ETC/ACC Technical Paper 2010/6, http://www.scribd.com/doc/58754961/ETC-Guiding-Principles-for-Adaptation-to-Climate-Change-in-Europe

## 2.2 The Interrelationship of Adaptation & Development

Adaptation is evolving. At its conception, it was pertinent to differentiate adaptation from development. Doing so, made it the case that adaptation to climate change was going to address scenarios that standard development or "development as usual" had never encountered, such as coping with rising sea levels. It was necessary for policy makers and practitioners to understand that aspects of adaptation were far out of the scope of standard development objectives and priorities. This clarification also helped to incorporate adaptation priorities into national policy agendas as well

as secure donor funding designed specifically for adaptation interventions. Yet, as adaptation matures, a more nuanced relationship between adaptation and development has emerged. In the publication *"Weathering the Storm"* adaptation efforts are placed on 'a continuum of approaches'. "At one far end of the continuum, adaptation efforts overlap almost completely with traditional development practice, where activities take little or no account of specific climate change impacts. At the far opposite end, highly specialized activities are developed in response to observed or anticipated changes in climate (and their effects), and fall outside the realm of development as we know it. In between, lies a broad spectrum of activities with gradations of "normal" development and climate change-focused activities."[2]

More recently, there has been a progression towards the integration of adaptation and disaster risk management, development, and poverty alleviation. This integration offers a more coherent approach to tackling the challenges, risks and hazards related to a changing climate.

**Adapted from Weathering the Storm**

While climate impacts are increasingly observed, the debate over managing adaptation has progressed very slowly. This in part is due to confusion about the relationship between adaptation and development—a definitional problem that has hindered not only project design, but also the allocation of funding for adaptation efforts. Notwithstanding the difficulty in developing a concise operational definition, failure to clarify this relationship has meant that funding mechanisms create redundancies or leave gaps in the landscape of critical adaptation and development activities.

*It will be important for any adaptation project to define its purpose in terms of how exactly it will address adaptation. A concise operational definition provides the donor knowledge of what type of project it is funding (where on the adaptation/development scale the project falls) ensuring that there is no gap or overlap in project funding within the scope of the donor.*

Three ways how adaptation coincide with development

1. "Serendipitous"Adaptation: Activities undertaken to achieve development objectives incidentally achieve adaptation objectives. The adaptation components of a given activity may even be noticed or emphasized only after the fact.

2. Climate-Proofing of Ongoing Development Efforts: Activities added to an ongoing development initiative to ensure its success under a changing climate. Adaptation thus serves as means to achieve development ends.

3. Discrete Adaptation: Activities undertaken specifically to achieve climate adaptation objectives. Development activities may be used as means to achieve adaptation ends. communities against climate trends or shocks. Sample activities include efforts to improve livelihoods, literacy, and women's rights, and even projects that address HIV/AIDS.

[2] WRI (2008) McGray, H., Bradley, R. and Hammil, A. *Weathering the Storm: Options for Framing Adaptation and Development*. WRI: Washington, DC. http://pdf.wri.org/weathering_the_storm.pdf

## A Synergistic Paring: Adaptation and DRR

As the need to adapt to climate change reverberates throughout the development community, practitioners and policymakers from other disciplines are becoming part of the adaptation community by applying their expertise to adaption efforts.

### Climate Smart Disaster Risk Management

'Business-as-usual' DRM will fail without a significant shift in how risk calculation and intervention design incorporate climate modeling and associated uncertainty. Climate change may not necessarily increase the number or severity of hazards however it will likely increase the vulnerability and exposure of people to 'normal' hazards in that it will it (decreases crop yields, increases water scarcity, increases infection, loss of biodiversity, loss of ecosystem assets and maybe increase of migration and new patterns of conflict).

The three pillars of action include of CSDRM: 1. Tackle changing disaster risk and uncertainties; 2. Enhance adaptive capacity; and 3. Address poverty, vulnerability and their structural causes.

**Case against a sectoral approach**:

Compartmentalised, sectoral approaches are not effective in meeting the complexity of the realities and challenges on the ground. Integrated approaches are needed to incorporate different approaches to diverse drivers of vulnerability. Adopting an integrated approach requires a commitment to deal with new risks, to work in partnership, and recognise the importance of getting the governance right. A major critique of other frameworks has been a failure to incorporate institutional processes effectively.

**From the initial testing and investigation of the CSDRM approach, a series of key challenges are evident, from which initial conclusions can be drawn, 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.

While the adaptation community is an amalgamation of many disciplines, the field of disaster risk reduction (DRR) is one of the best-suited disciplines to tackle the challenges of ACC. Both ACC and DRR share a common objective of reducing vulnerability to climate-related disasters. DRR, at both the conceptual and practical level, has extensive knowledge, experience and technical skills in the types of efforts inherent to ACC, such as: land use planning, infrastructure reinforcement, increasing community awareness in disaster preparedness, establishing and monitoring early warning systems and changing natural resource management practices.

Indeed, as climatic changes increase the number and the severity of climate-related disasters, both communities will benefit tremendously from the integration of their disciplines. More recently, there has been a convergence of the climate change, development and disaster community in what is being called a 'climate smart disaster reduction management' (CMDRM) approach. This approach integrates the latter disciplines as a way of creating a coherent integrated approach to managing and adapting to the climatic hazards resultant of climate change.[3] Please see the following box for more details.

## 2.3. Climate compatible development - an integrated approach

An integrated approach looks at development through one unifying climate change lens. Much of the current climate change debate focuses on mitigation and adaptation. These are important pillars of international climate policy, and provide the framework for ongoing global climate talks. But does this approach make sense when policy makers come to grapple with the impact of climate change on people's lives and livelihoods in their countries? (See box)

### Defining climate compatible development

*(Adapted from Climate and Development Knowledge Network, Mairi Dupar 2011. CDKN) http://cdkn.org/2011/06/defining-climate-compatible-development/)*

There is proposed a more integrated approach, 'climate compatible development'. Climate compatible development not only moves beyond the traditional separation of climate adaptation and mitigation, but puts poverty reduction and human development at the heart of both.

#### Why development must be at the heart of adaptation and mitigation policy: a 'triple win'

The smartest climate policy choices should add a wider development dimension to adaptation and mitigation goals. Of course, it makes no sense to build a society's defences against climate change in carbon-intensive ways. Similarly, attempts to lower greenhouse gas emissions and pursue low carbon development paths should be planned through a lens of climate resilience. Climate policies that are both low carbon and that create more resilience against future climate change are, then, an imperative.

Adaptation and mitigation policies can and must advance human development. It is possible to identify climate strategies that embrace development goals and development strategies that integrate the threats and opportunities of a changing climate. Where adaptation, mitigation and development come together in a 'triple win', we call it climate compatible development. Many countries are moving along this path, including Rwanda, Ghana, Kenya, Colombia, Ecuador, and Pakistan, to combine these strategies into a coherent approach.

The process of identifying the climate compatible roadmap requires careful work with a range of stakeholders. It first requires an understanding of the impact of a changing climate over time, and then combining that understanding with the development of a low emissions economic pathway stretching some decades from today. What follows is the development of the drivers and measurement systems that keep us on that pathway. This entire process requires political will, capacity and patience.

[3] Mitchell, T.; Ibrahim, M.; Harris, K.; Hedger, M.; Polack, E.; Ahmed, A.; Hall, N.; Hawrylyshyn, K.; Nightingale, K.; Onyango, M.; Adow, M., and Sajjad Mohammed, S. (2010), Climate Smart Disaster Risk Management, Strengthening Climate Resilience, Brighton: IDS

## 2.4. Resilience as a Main Organizing Principle or Universal Goal

The one unifying centre-point concept is resilience – or vulnerability, depending which side of the coin one is looking at. The figure below well illustrates what resilience looks like within five different thematic areas related to Adaptation to Climate Change.

| | Thematic area | Components of resilience |
|---|---|---|
| 1 | Governance | • Policy, planning, priorities and political commitment.<br>• Legal and regulatory systems<br>• Integration with development policies and planning<br>• Integration with emergency response and recovery<br>• Institutional mechanisms, capacities and structures; allocation of responsibilities<br>• Partnerships<br>• Accountability and community participation |
| 2 | Risk assessment | • Hazards/risk data and assessment<br>• Vulnerability and impact data and assessment<br>• Scientific and technical capacities and innovation |
| 3 | Knowledge and education | • Public awareness, knowledge and skills<br>• Information management and sharing<br>• Education and training<br>• Cultures, attitudes, motivation<br>• Learning and research |
| 4 | Risk management and vulnerability reduction | • Environmental and natural resource management<br>• Health and well being<br>• Sustainable livelihoods<br>• Social protection<br>• Financial instruments<br>• Physical protection; structural and technical measures<br>• Planning régimes |
| 5 | Disaster preparedness and response | • Organisational capacities and coordination<br>• Early warning systems<br>• Preparedness and contingency planning<br>• Emergency resources and infrastructure<br>• Emergency response and recovery<br>• Participation, voluntarism, accountability |

(http://www.esdevaluation.org/documents/IDS_Report_on_Evaluating_Adaptation_for_GE_publication_version.pdf)

# 3. Visions and Methodologies for Monitoring and Evaluation in a Changing Climate

## 3.1 Importance of M&E for ACC

> *Achieving truly climate-compatible development: low carbon growth that simultaneously reduces poverty and builds a more resilient future, is challenging but possible. The little time remaining to lock in low-carbon development paths adds urgency to the task.* ***That's why it's so important that emerging experience of climate-compatible development is well evaluated: for its impact on society, on economies, and on the natural environment.*** *CDKN 2011 http://cdkn.org/themes/evaluation/*

First and foremost, adaptation interventions must be evaluated in order to determine whether an intervention was successful. Further reasons to evaluate adaptation interventions are provided in "Evaluation to Adaptation to Climate Change from a Development Perspective".[4] The reasons presented are as follows:

- Increases in funding
- Gathers political momentum
- Evolving approaches to evaluation of development assistance
- Increasing understanding of adaptation and its relationship with development

Further, the **UNFCCC M&E Synthesis Report** states that:

*¨Monitoring and evaluation of projects, policies and programmes forms an important part of the adaptation process. Ultimately, successful adaptation will be measured by how well different measures contribute to effectively reducing vulnerability and building resilience. Lessons learned, good practices, gaps and needs identified during the monitoring and evaluation of ongoing and completed projects, policies and programmes will inform future measures, creating an iterative and evolutionary adaptation process.¨*

In general, and also in the climate change context, a primary concern of programme implementation is that of assurance of the deliverables. The envisaged results in terms of planned outcomes and impacts should be the result of adaptation interventions. With baselines targets and indicators in place, monitoring continuously tracks activities, assess deviations and correct course of action; along with ensuring that the deliverables are being achieved. Further, with substantial financial investment in climate change interventions in the coming years, impact evaluation will become a key component in measuring progress and effective performance of expenditures.

[4] Merlyn McKenzie Hedger, Lisa Horrocks, Tom Mitchell, Jennifer Leavy, and Martin Greeley "Evaluation of Adaptation to Climate Change from a Development Perspective" in Rob D.van den Berg and Osvaldo Feinstein, ed., *Evaluating Climate Change and Development* (New Brunswick, New Jersey: Transaction Publishers, 2009), 241-264.

*Substantial and increasing amounts of money are available for countries to undertake climate change interventions. Currently the evidence base on the impact of climate change interventions is almost non-existent and there is a need for wider application of rigorous impact evaluation in the field. However, if calls for increasing financing of climate change mitigation and adaptation by hundreds of billions of dollars a year are to remain credible and gain support, evidence of the effectiveness of current spending is essential. Donors will likely remain hesitant to provide additional funding unless it is clear that interventions are reaching their environmental and developmental objectives.*

Source: From **Impact Evaluation and Interventions to Address Climate Change (2009)**
Martin Prowse, Institute of Development Policy and Management, University of Antwerp, Belgium
(http://www.3ieimpact.org/reports/Impact_Evaluation_and_Interventions_to_Address_Climate_Change_FINAL_December2009.pdf)

## 3.2. Complexity of Measurement for ACC – Focus on Impact

Measuring the effectiveness of adaptation projects, programmes, policies and national systems is inherently complex. Conventional M&E methodologies remain applicable to evaluating an ACC project´s progress, and ascertaining whether or not the results have been achieved - at least up to the output level of ACC initiatives, yet, the higher outcome level and the impact level are however more difficult to evaluate. This is where the evaluation team need to have someone on it who understands the capacity issues of what it takes to make a country or area capable of adapting to climate change. This needs to be understood clearly if the evaluation team wishes to be able to have a solid grasp on evaluating the impact level.

There are two levels of evaluation mainly:

1) M&E as in conventional methodologies ensuring that the ACC projects progress towards and meet their results and outputs / lower level outcomes; and –

2) A deeper substantive analysis at the higher outcome and impact levels to see if the project is indeed having any impact on progressing towards adaptation. For this one needs to have an appreciation of the elements that are needed to ensure the capacity for adaptation. The box below well describes the process of monitoring and evaluating ACC in a clear and simple way.

**Adapted from: Climate Change Adaptation, Monitoring and Evaluation. 2010.** GSDRC, AusAID, Coffey International Development, DFID, IDS Sussex, Social Development Direct, University of Birmingham

To begin with, there remains a great deal of conceptual uncertainty about what to measure (adaptive capacity, resilience, vulnerability reduction etc.). Adaptation interventions tend to cut across many sectors, are implemented at different scales (from international to household level), over different timescales, and take a broad range of approaches (from hard structural adaptation measures, e.g infrastructure and technological projects, to soft policy measures e.g information exchange and behavioural change). Thus, a range of different approaches are needed depending on where interventions sit on the development – adaptation continuum (see Adaptation and development). Monitoring and evaluation of policies and national systems is complex as it requires strong coordination across sectors and levels and is more susceptible to external factors. There are additional challenges with regards to attributing cause and effect in adaptation interventions and accounting for unintended consequences. Practical difficulties in undertaking assessments stem from a general lack of financial, human and technical resources and capacities, a lack of baseline data and historical trends, uncertainty of projected climate change impacts, and insufficient sharing of information across stakeholder groups, levels and sectors. As a result, monitoring and evaluation (M&E) of adaptation is one of the weakest areas of adaptation practice. Of those evaluations carried out to date, most have been undertaken as part of ongoing implementation, whilst only a few have focused on evaluating interventions after completion. Given this panorama, there are increasing calls for an integrated M&E framework for adaptation which is more closely aligned with development planning, through, for example, the incorporation of adaptation M&E into existing national poverty reduction frameworks such as Poverty Reduction Strategy Papers (PRSPs) and sectoral plans (see national-level adaptation planning). This would enable adaptation interventions to make use of existing monitoring and evaluation systems rather than create an additional layer of reporting. There are also calls to incorporate M&E approaches from the field of disaster risk reduction (DRR) given that many of the existing DRR indicators and data are relevant for adaptation.

Source: http://www.gsdrc.org/go/topic-guides/climate-change-adaptation/monitoring-and-evaluating-adaptation

**The Paris agenda of harmonisation** and alignment has focused attention on improving the effectiveness of the international aid system, an important component of which is **the use of rigorous impact evaluation (IE)** designs to assess the impact of development programs on people's well-being

http://www.3ieimpact.org/reports/Impact_Evaluation_and_Interventions_to_Address_Climate_Change_

There remains a limited amount of literature and reports regarding impact level evaluation for climate change adaptation, although existent ones, although small in number do provide a wealth of valuable information. At the same time, it seems the application of rigorous IE techniques to assess the effectiveness of climate change interventions has so far been limited. Generally speaking, at this time, in the subject area, there is a relatively minimal amount of literature, especially that is pragmatic in manner, yet there are a collection of tools, methodologies and experiences on the ground.

The compilation of information and knowledge and the evolution of the process in general is still embryonic in many ways, especially for those outside of the regular development partner circles. Note has been made that there are significant gaps in the application of IE and they particularly highlight the lack of studies on environmental protection, agriculture, health and gender issues. (Jones et al. 2008) (Hedger et al., 2008) assessed the current state of climate change adaptation evaluations and found quality impact evaluations minimal.

## 3.3 Examples of Impact Evaluation Methodology

The following excerpt as below clearly depicts popular examples of current methodologies used in the subject. [5]

**Impact Evaluation Methodology** assesses impact of an intervention using *counterfactual* analysis. The estimated impact of the intervention is calculated as the difference in mean outcomes between a 'treatment group' (those receiving the intervention) and a 'control group' (those who don't). The single difference estimator compares mean outcomes at end-line and is valid where treatment and control groups have the same outcome values at baseline. The difference-in-difference (or double difference) estimator uses baseline and end-line data to calculate the change in outcomes over time across the two groups. There are various approaches to determining an appropriate control group for *counterfactual* analysis.

**Randomisation:** the experimental approach to impact evaluation involves the random selection of participants into the intervention and control groups. When this method is well implemented over a sufficiently large sample the only difference between the two groups is that the control group does not receive the intervention. The experimental approach is often held up as the 'gold standard' of evaluation, but is not applicable to all interventions. See for instance Skoufias (2001) for an example.

**Pipeline:** This approach uses people, households, communities or businesses already chosen to participate in a project at a later stage as the comparison group. The assumption is that as they have been selected to receive the intervention in the future they are similar to the treatment group, and therefore comparable in terms of outcome variables of interest. See for instance Edmonds (2002) for an example.

**Matching:** This approach involves matching programme participants to nonparticipants based on a number of observed criteria. One such approach is that of propensity score matching (PSM), which uses a statistical model to calculate propensity of participation on the basis of the set of observable characteristics. Participants and non-participants are then matched on the basis of similar propensity scores.



[5] Adapted from:
http://www.3ieimpact.org/reports/Impact_Evaluation_and_Interventions_to_Address_Climate_Change_FINAL_December2009.pdf

# PART TWO –Key Challenges and Opportunities for M&E of ACC

## 4. Some Key Conceptual and Practical Challenges in Monitoring and Evaluating Adaptation

Challenges will be discussed extensively as the report continues but it appeared prudent at this time to note a few of the more all purveying ones to set the stage for the forthcoming discussions of the key frameworks presented and analyzed.

There are both *conceptual and practical* challenges to monitoring and evaluating adaptation interventions. On a conceptual level, the lack of a consensus on a definition for adaptation creates a challenge when determining what successful adaptation is. The challenges attribution, relevance and calibration inherent to monitoring and evaluating adaptation interventions have been adapted from the UNDP framework.[6]

***Attribution***

For the challenge of attribution, which the UNDP framework explains as the difficulty of trying to decouple climate change risks from other drivers and stressors, it recommends a combination of qualitative and quantitative indicators, supplemented by narrative information.

***Relevance***

For the challenge of relevance, which stems from difficulty in trying to determine the success of a project many years after the project lifetime has ended, the UNDP framework recommends using proxy measures toward adaptive capacity.

***Calibration***

For the challenge of calibration, which is described as trying to assess the impact of an adaptation intervention against the backdrop of changing hazard profiles, the UNDP framework states that indicators should be 'normalized'.



[6] UNDP. 2008. Proposed Framework for Monitoring Adaptation to Climate Change. Draft. United Nations Development Programme.

## General Challenges of Adaptation

- **The nature of adaptation**
  - The long timescales associated with climate change and its impacts.
  - The uncertainty associated with projected impacts and the related challenges of defining a long-term vision of the outcome of adaptation and agreeing on levels of acceptable risk.
  - The multi-sectoral and multi-stakeholder nature of adaptation.
  - Reversed logic, which means that the measure is successful by default when nothing happens.
- **Adaptation lacks an agreed metric to determine effectiveness**
  - The outcomes of evaluations of adaptation projects, policies and programmes may not always be directly comparable.
  - Vulnerability assessments require value judgments, and any attempt to define and measure vulnerability must be the result of a consultative, stakeholder-driven process, rather than the result of technical analysis resulting in a simple metric.
- **The difficulty of attributing cause and effect**
  - As adaptation entails a range of projects, policies and programmes across sectors and levels, their effect may be difficult to distinguish from the effects of other sectoral activities.
  - If indicators are needed in order to show that a particular project, policy or programme has been cost- effective, then it will be essential to find ways to attribute measured successes to those individual actions.
- **Unintended negative side effects**
  - The Organization for Economic Co-operation and Development (OECD) recommends caution in using indicators, as their application may have unintended negative side effects.

**Source**: Adapted from UNFCCC/SBSTA/2010/5



## 4.1. Highlighting Priority Upscaling areas for M&E of ACC

Following is a highlight of some of the main challenges noted and priority areas for up-scaling for monitoring and evaluation for ACC in the annexed Interim Report - Summary of Analysis, **Monitoring and Evaluating Efforts in ACC (DRR Focus)** *A Discussion Paper for The Global Environment Facility-hosted Climate-Eval Community of Practice* **May/June 2011 ,** *Haris E. Sanahuja, Consultant to the GEF*

## i) Information and Knowledge Management and M&E

It appeared from the challenges listed throughout the evaluations that there are two basic issues which make much of the M&E for ACC literature of limited access to the everyday practitioners. While a more comprehensive discussion of challenges is presented later in this report, the following challenges appear to be the most elemental and those were as follows. There are others and these will be discussed in detail within this report, but these appear to be the most critical.

First, there is a language issue. Much of the literature is lexicon-rich. This alone is one thing and understandable especially when new subjects are coming on board, but what makes this an issue, is that the terminology used in the literature is nowhere near consistent. Different meanings are attached to the same words. For this report, the OECD Standard has been selected to avoid confusion (see Annex 1 – Please refer to the Appendices).

Secondly, most of the key concepts are all described a little differently – many are similar, but not the same, and some are quite different indeed. Generally speaking, there is some confusion in terms of concepts and paradigms, not in a negative sense as all new fields or study emerge into some order from chaos and then continue to evolve, but the stage that ACC is at now, makes capacity development for ACC a real challenge.

The amalgamation and its dissemination of knowledge between all stakeholders and sectors are important for being able to predict patterns in Climate Change, as technology and understanding allow, and then to be able to take action for ACC thereafter.

Evaluations should carefully examine transferring knowledge and information, especially in the climate change context. Information was always extremely important, yet is now critical to understanding climate change. Conventionally, the context was such which used to be where information was more patterned, and therefore more predictable to a degree, but now patterns show a tendency towards unpredictability.

Capacity building for ACC is not only a matter of transferring information and knowledge, but also involving all stakeholders in all sectors to actually plan, and even think, together.

## ii) Quality and Availability of Data for M&E

- **Sound Economic Data for ACC (DRR focus) to Back Up Policy Decisions -** It is very important to ensure solid evidence, with numbers and economics behind it, in terms of demonstrating the connections between ACC and poverty alleviation. If a country or district has a poverty reduction strategy, it is important that this is fully understood and brought to the table at the outset of ACC project design. For M&E, it is also important for the evaluators to refer to the association between ACC and poverty reduction while evaluating especially at the outcome and impact levels. M&E need also keep up to date with advancements, or changes, in the related economic sectors, and of course, with the insurance and reinsurance arenas.

- **Triangulation of data** –One method commonly suggested for verification of data generally was that findings were triangulated with the use of multiple sources of information when possible. From **A Framework for Evaluating Adaptation to Climate Change: Evaluating Climate Change and Development, Chapter 18,** Jennifer Frankel-Reed, Nick Brooks, Pradeep Kurukulasuriya, and Bo Lim, "Balancing quantitative, qualitative, and narrative M&E tools: Ensuring that a mix of indicator types are used so results can be "triangulated" to give the most accurate picture possible of progress toward adaptation and the factors involved." (p.292) This can be especially important in the case of small to medium sized disasters and also in many cases for climate information as information may not be accredited, plentiful, nor timely.

- **Baselines and Indicators** A number of reports touched on the topic of baselines and indicators, and noted for example that existing vulnerability indices could be used and new one adapted from the many already in existence. For example, among others, : the Disaster Risk Index (UNDP, 2005), vulnerability indicators by Brooks et al. (2005), impact vulnerability index (Buys et al., 2007) and the Disaster Deficit Index (Cardona, 2005).

- **Ensure Data Meets Level of M&E Intervention-** Encouraged is that levels of data are appropriate for levels of M&E. For example, the development of indicators requires very different data than, for example, a Performance Evaluation, and different again from an Overall Performance Study.

- **Programme or Project Documentation-** A project can only as good as the project document. By this it is meant that needed are very solid project objectives, anticipated outcomes, planned results, detailed activities, and the human and financial resources, along with sound institutional and governance structures to make it all happen. Therefore it pays to ensure a lot of time and thought expertise and most importantly collective and participatory planning are invested at the outset.

- **Information on Slow onset climate-related risks**

  *"Within the development and DRR contexts very many evaluations have been undertaken. One important point, which does emerge, is for the need for attention to be given to the evaluation of risk reduction associated with slow onset climate-related risks. Substantially more attention has been given to rapid onset disasters. Working to evaluate slow onset disasters requires the establishment of vulnerabilities at the outset, the establishment of baseline scenarios and development of the capacity to monitor change over long timescales, retain the information and provide it in usable format at the right time." (van den Berg, 2009, p. 259)*

### iii) Language and Expression for M&E for ACC

- Consistent terminology remains an issue.
- Writing style remains somewhat of an issue. Over complication and misuse of key terms was noted as a fairly frequently encountered issue.

- The main language of a project should always be in the language spoken in the country hosting the project with facilities supported to translate key documents into the donor's language, other key languages, as well as into English.

### iv) Ensuring Lessons are Learned and Acted Upon

A widely reported challenge of ACC evaluators is that of ensuring that reports do focus on constructive analysis, and record as much information on lessons learned, as appropriate. Further, there need be more structure in the mechanisms or feedback planned, which ensure that this valuable information is indeed not only recorded and transferred, but actually becomes part of actual learning and decision making at some future point.

### v) Capacity Development for M&E for ACC

Technical skills have been evaluated as quite effectively transferred in many cases but exchanges or creative thought and the formulation of new ideas collectively, has overall remained quite weak.

M&R planning remains weak generally. In terms of policy level, planning and budgeting for M&E, many times resources, structures and policy and procedure run short of needs for effective M&E at all levels.

### vi) M&E Participation for ACC

Partnership opportunities were rarely noted to reach their potential. It was mostly recorded as being comprised of only public sector with development players. The project plans indicated often more broad participation than actually occurred on a day to day basis, mostly resulting not from a lack of interest from all the stakeholders, but from a lack of time.

The issue of languages was, mentioned numerous times, as one of real importance that is easily solved, yet goes on without much change.

In terms of gender issues, much work needs to be done in ascertaining not only which gender is most motivated and most able to undertake different tasks in ACC, but also which age level and which group within a community, is most motivated, and able.

Many times external consultants are hired for project design, and for M&E tasks. The implementing partners may not work with this consultant very much and vice-versa. This is continuing to prove not beneficial to the project lifecycle for a number of reasons. One way of rectifying this issue is to ensure that at the design stage significant funds are allocated to ensure that the project designer, monitor and evaluator are kept on board, even on a part-time basis, thus insuring some continuity.

### vii) Attribution and M&E

Since at this time, many efforts in DRR and ACC are only recognized at national and international levels, a challenge is that the many community level, academic, NGO and even individual efforts are not collected and not recognized.

If efforts are not recognized how can they be monitored? In other words, as long as the efforts within the community at large are not organized, recognized and recorded they remain largely invisible to M&E.

In the view of the evaluator, the lack of a uniform methodology, to link formal national efforts with local actors and processes, has been the primarily cause why the local experiences in each country were not collected centrally, to generate input for tracking success and for imputing to follow up efforts.

Two other key points are well quoted as follows. "Another key component in monitoring and evaluation of projects and programs is that of attribution of outcomes with and without the intervention. Evaluating and attributing "success" in the absence of an event is necessary." (van den Berg p. 254)

"The adaptation concept involves making changes to another policy area because of climatic change; so there are inevitably overlaps and problems of attribution. This means that indicators may well require sector-specific dimensions. One key area is likely to be DRR." (van den Berg p. 256).

**viii) Rationale behind Sound M&E. A thorough appreciation of the critical importance of M&E was widely reported to need more awareness raising**

M&E contributes to demonstrating accountability for timely achievement of goal-associated results, and achieving outcomes, based mainly on sustainability of results, impact of results, performance and effectiveness of the operation and management. Information and Knowledge Management continue to play increasingly important roles overall in Monitoring and Evaluating, and vice versa.

**ix) Evaluation and Strategic Planning. More Need to Relate to Over Arching Agendas for ACC - Especially Regional and Sub-Regional Agendas**

There were not many references to specific links with the programme or project evaluated to formal over arching agendas, especially with over arching sub-regional or regional agendas. The donor´s strategic plans were generally related to. Main national-level related agendas, policy and important legislation were also commonly referred to.

**x) Monitoring and Evaluation Policy**

There was much reference to the needs for improving M&E policies – and only some suggested practice highlighted.

Within the body of literature, there was very little reference to the actual hands on or practical ways in which to improve M&E specific policies. There was reference to the *need* to improve M&E policy and practice, but the actual ways to regarding good practices or lessons learned was limited.

One area which was recommended to be furthered is to ensure that the practical lessons of M&E be applied on the ground and shared with the actors to be incorporated into policy development, and that this M&E policy development also be coordinated between the local and national levels.

A need was also noted from environmental generalists, DRR and ACC Communities collectively that there is demand for the general adoption of policies and regulatory frameworks, including M&E mechanisms, promoting equitable and sustainable natural resources management regimes. It was suggested that if this connecting of critical interlinking spheres of ACC and DRR, Sustainable Development and Human –Rights based Poverty Reduction can be managed by developing more mainstreamed policy frameworks, that this is highly sustainable, seeing as it is something developed within the existing national structures and processes.

Overall, the links between environmental degradation, poverty reduction and social inclusion were noted to be not fully appreciated by policy decision makers. Disaster risk and environmental issues, including climate change still largely remain marginalized in comparison to economic growth. If these elemental links are not formed, then monitoring and evaluating of whatever efforts are made would still continue, but they would be measuring only half, or a quarter of the issue in reality. This is why M&E, can also act as a good reality check, especially if much time and thought is invested into asking appropriate questions*.*

### xi) Vision for Future M&E Policy

Frameworks that are flexible would better allow the monitoring and evaluating of various initiatives which will inevitably be ongoing simultaneously, with some difference, but also with many central core issues shared, and M&E actually has the potential to act as a coordinator with the many efforts. There could be some form of shared venue for all M&E work under one CCA UNDAF for example.

### xii) M&E Requirements

The following were continually noted as basic requirements for M&E:

- Standards and Codes of Practice for M&E with a goal to more efficient M&E, e.g., systematized, less intense and less frequent reporting.
- ToR´s for All Related Functions
- Filled posts for all related functions
- Adequate Funding for M&E

### xiii) Involvement of Focal Points.

This was scattered, meaning that in the majority of reports, the importance of good and strategic M & E focal points was indeed mentioned. How the focal points were to operate, to interact, and sample Terms of Reference for Focal Points were not represented well in the literature. There was also references to minimum expected qualifications and ToR´s for Focal Points.

### xiv) Other Challenges

- Monitoring and evaluation in general, and increasingly important for ACC, needs to ensure that M&E pertains also to the outcome and impact level, as well as to the conventional measuring outputs.
- A common challenge reported in from many evaluations points to remaining and significant challenges or problems in finding interagency synergies and in promoting more interdisciplinary capacities for analysis and response.
- Technical skills have been evaluated as quite effectively transferred in many cases but exchanges or creative thought, and the formulation of new ideas collectively, has overall remained quite weak.
- In M&E with development demands being more and more holistic in nature, there is a shift moving from relatively clear definable targets, to more processes and outcome driven goals.
- A general challenge for development partner efforts will be to make a concerted effort to ensure that local and provincial levels, and not only national levels, are included and participate fully.
- There needs to be rigorous and concrete methodologies designed to demonstrate the links between DRR and poverty. There also needs to be concrete and demonstrated links between DRR and poverty with governance and human rights.
- The development context is changing quickly in that the numbers of needs are exponentially superseding the resources available. This means that broadening participation, not just through lip service, but also by real and manifested involvement, of the other stakeholder groups, especially the private sector, is more needed than ever.
- Additionally, issue based and multi-sector and multi-stakeholder communities of practice need to be formalized, recognized, and respective attribution granted.

Below are four key points from the UNFCCC Synthesis Report 2010 ***The Way Forward Issues for further consideration***

In view of the information in this document, it is clear that monitoring and evaluation of adaptation projects, policies and programmes and development and usage of indicators is still evolving and that a number of issues need to be further investigated. Parties may wish to consider the following:

(a) How can monitoring and evaluation of adaptation measures make the best use of existing monitoring and evaluation systems, including existing indicators? Could these systems be used a they are, do they need to be revised or are new and additional systems required? What are the advantages and disadvantages of each of these approaches?

(b) What kinds and combinations of process and outcome indicators would be most suitable for monitoring and evaluating adaptation policies, programmes and projects?

(c) In the light of the multi-sectoral, multi-scale and multi-stakeholder nature of adaptation, how should monitoring and evaluation of adaptation policies, programmes and projects take place? What roles and responsibilities need to be assigned?

(d) How can results from monitoring and reporting be reported and disseminated so as to ensure that they are fed back into the project, policy or programme concerned but also to allow for lessons learned and good practices identified to be shared with the wider community of adaptation planners and practitioners?

## 4.2 Special Challenges - Mainstreaming ACC Case Studies

### A ) Mainstreaming Adaptation to Climate Change (MACC)

*¨The 2009 report of the Mainstreaming Adaptation to Climate Change (MACC) project in the Caribbean stressed the importance of a functioning monitoring and evaluation system to the overall success of the project. In particular, the mid-term review proved to be crucial as it allowed changes to be made in the project design, including a change in executing agency, which eventually led to its success. However, the report also notes that a more simplified project design and the setting up of a more efficient monitoring and evaluation system that was more systematic and less intense and involved less frequent reporting would have been more effective.¨* UNFCCC 2010 M&E *Synthesis Report*

**MACC FACTS**

The Mainstreaming Adaptation to Climate Change (MACC) project was implemented from 2004 to 2007 by the World Bank, with funding of USD $5 million from GEF. The executing agency was the CARICOM Secretariat, Guyana. In-kind participants included the Governments of Canada and the United States of America through the National Oceanic and Atmospheric Administration (NOAA).

The project's main objective was to mainstream climate change adaptation strategies into the sustainable development agendas of the small island and low-lying states of CARICOM. MACC adopted a learning-by-doing approach to capacity building, consolidating the achievements of previous efforts. It built on the progress achieved in past projects by furthering institutional capacity, strengthening the knowledge base, and deepening awareness and participation.

Participating countries were: Antigua & Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Kitts & Nevis, St. Vincent & the Grenadines, and Trinidad & Tobago.

MACC had five major components. These components are: Building capacity to identify climate change risks – Among other things, this included strengthening networks to monitor impacts on regional climate, downscaling global climate models, and developing impact scenarios; Building capacity to reduce vulnerability to climate change Building capacity to effectively utilize resources to minimize the costs of ACC; Public education and outreach; and Project management.

As MACC sought to build capacity in a cost-effective way, the outcomes of this project included a full set of deliverables which are monitored, evaluated and published. This contributes to the long-term sustainability of project activities and objectives.

## B ) Looking at things the other way around – Mainstreaming Development into Adaptation

### A Guiding Frame for Mainstreaming Biodiversity and Development Into National Adaptation Programmes of Action.

[Executive Summary] In 1992, at the Rio Earth Summit the international community responded to pressing global environmental problems and adopted the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD) and agreed to start negotiations for what later became the United Nations Convention to Combat Desertification (UNCCD), all with the overarching goal of achieving sustainable development. Important linkages and potentials for synergy exist between the three conventions.

Climate change and desertification/land degradation can adversely affect natural resources and ecosystems thus decreasing biological diversity. At the same time, conservation and management of biodiversity can increase ecosystems' resilience thus lowering their vulnerability to climate change. One of the identified areas for possible synergies is adaptation to the adverse effects of climate change, which is a necessity regardless of the level of action taken to mitigate global warming. Activities that promote adaptation to climate change can also contribute to the conservation and sustainable use of biodiversity and sustainable land management.

So far the UNFCCC process has progressed farthest in the implementation of adaptation activities in least developed countries (LDCs), whereby a process to prepare and implement National Adaptation Programmes of Action (NAPAs) has been established to help communicate the urgent and immediate needs of LDCs relating to adaptation. NAPAs offer opportunities to identify and utilize synergies between the three Rio conventions. In accordance with the NAPA guidelines, NAPAs should build upon existing plans such as National Biodiversity Strategies and Action Plans (NBSAPs) under CBD; National Action Plans (NAPs) under UNCCD as well as other sustainable development plans and poverty reduction strategies. Given that all relevant stakeholders are involved during the preparation of NAPAs, a holistic bottom-up approach focusing on vulnerable livelihoods and ecosystems can be ensured thus enhancing the utilization of synergies. The search for synergy between the three Rio conventions is generally hailed as a desirable initiative.

Due to numerous barriers, however, it often remains challenging in practice to move beyond statements of goodwill and to implement concrete initiatives, even with modest initial targets. In the case of NAPAs, a focus on their country driven character could help promote synergy among conventions, including the promotion of jointly implemented activities, and the systematic exchange of information. Given that climate change is a major challenge to sustainable development and poverty eradication in LDCs, the economies of which are generally based on climate-dependent primary commodities, the pursuit of positive linkages among the activities under different MEAs, and even under other broader national priorities, is an essential cornerstone in the promotion of sustainable development in these countries. In addition to the NAPAs, other areas remain where existing linkages could be strengthened and potential synergies should be utilized.

This publication provides a valuable contribution towards enhancing joint efforts towards the achievement of the objectives of the UNFCCC and the CBD. IUCN-Regional Biodiversity Programme (RBP), Asia is working on issues of synergies among Rio Conventions using a local approach to sustainable development. This publication is a part of that effort to support national adaptation planning based on local needs and to conserve natural resources.

Source: http://data.iucn.org/dbtw-wpd/edocs/2004-110.pdf

# PART THREE – Capacity Development of M&E of ACC

## 5. Building on Existing Programmes and Strategies – Ideas behind like-minded and key frameworks for M&E for ACC

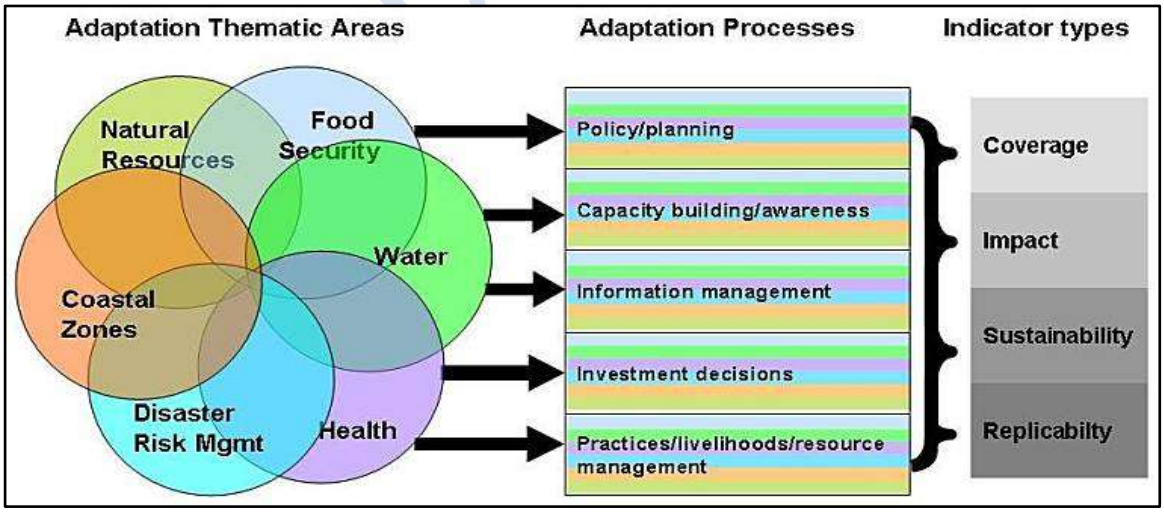
Adaptation to climate change is a complex endeavor. It is vast in scope, encompassing many disciplines, stakeholders, levels of engagement, ecosystems and technologies.

Adaptation's inherent complexity makes monitoring and evaluating adaptation a very daunting task. Standard indicators used in development and environmental monitoring and evaluating mechanisms are inadequate in the adaptation context, as "they do not reflect the nature of adaptation – which is about capacity, behavior, and risk-reducing measures for the advancement of development outcomes."[7] It is therefore imperative that a framework for monitoring and evaluating is specifically designed for adaptation. To address the complexity and vast scope of adaptation, the adaptation M&E framework is structured so that the scope of adaptation is narrowed and the interplay of adaptation components are understood. The elemental components of a framework for monitoring and evaluating adaptation are discussed in the following sections.

### 5.1 UNDP Proposed Framework for Monitoring Adaptation to Climate Change.

***Structure of UNDP's M&E Framework***

Examining UNDP´s framework, as above, illustrates key conceptual points and puts in on to a map in many ways. UNDP´s Framework will be discussed in more detail in later sections also.




[7] Jennifer Frankel-Reed, Nick Brooks, Pradeep Kurukulasuriya, and Bo Lim "A Framework for Evaluating Adaptation to Climate Change: Evaluating Climate Change and Development" in Rob D.van den Berg and Osvaldo Feinstein, ed., *Evaluating Climate Change and Development* (New Brunswick, New Jersey: Transaction Publishers, 2009), 285-298.

Summary of the United Nations Development Programme's (UNDP) Proposed Framework for Monitoring Adaptation to Climate Change

This summary serves to highlight the main elements presented in UNDP's Proposed Framework for Monitoring Adaptation to Climate Change. It does not purport to be comprehensive in its summarization of the framework.

The framework is developed from UNDP's experience with climate change adaptation projects and the unique challenges inherent to these projects. As such, "this framework focuses on two of these challenges; first, that climate change adaptation cuts across numerous development objectives, and second; that adaptation is not simply an outcome, but rather a diverse suite of ongoing processes that enable the achievement of development objectives under changing conditions."[8]

**Framework Objective:**

Provide guidance and build the capacity of adaptation stakeholders to design rigorous initiatives and monitor adaptation progress. At the initial stages of formulating an adaptation initiative, the framework can be consulted to help define the scope of adaptation interventions, identify possible outcomes…and make the logical linkage of project-level interventions to measurable indicators of adaptation progress."[9]

**Organization of framework:**

UNDP´s Framework works to address the complexity of ACC by organizing it according to the following six "Thematic areas" (TAs).[10] They are as follows:

- TA1: Agriculture/food security
- TA2: Water resources and quality
- TA3: Public health
- TA4: Disaster risk management
- TA5: Coastal zone development
- TA6: Natural resources management

UNDP acknowledges that ACC interventions will often fit into more than one TA. Accordingly, it recommends using flexibility when ACC interventions overlap with TA´s. The UNDP framework states, *"ultimately, interventions should be guided by stakeholder priorities and agency expertise, and this framework can be used as a reference for adapting a sensible monitoring approach."*[11]



[8] Brooks, N and J. Frankel Reed (2008) *Proposed framework for monitoring and evaluating adaptation to climate change*. United Nations Development Programme. Paper for the GEF International Workshop on Evaluating Climate Change and Development. p. 2.
[9] Ibid.
[10] UNDP. 2008. Proposed Framework for Monitoring Adaptation to Climate Change. Draft.
[11] Ibid.

### *Processes*

To further narrow the scope and determine the components of a specific ACC intervention, which allows for a more manageable approach to monitoring and evaluating ACC interventions, UNDP's framework[12] categorizes the following five processes involved in ACC interventions:

i. Policymaking and planning (including budget and regulatory processes),
ii. Capacity building and awareness raising,
iii. Information management (including EWS, monitoring and analysis processes),
iv. Decision-making for investment, and
v. Risk reduction practices/livelihood activities and/or resource management processes.

According to the UNDP framework, these six process categories can take place at various scales including local, national, and international. Additionally, the UNDP framework advises these six process categories are not discrete nor are they comprehensive. It acknowledges that an ACC intervention may involve more than one type of process mentioned in the list and that an ACC intervention may involve a type of process that is has not been included in the list.

### *Indicators*

It is critical that a M&E adaptation framework contain appropriate indicators. According to the UNFCCC synthesis report, the purposes of indicators are to simplify, quantify, standardize and communicate complex and often disparate data and information.[13] Additionally, the report states that indicators may provide the basis for assessing the efficiency and effectiveness of an adaptation intervention. Indicators are to be used at various scales, across adaptation processes and at the objective, output and outcome levels.



**Types of indicators used by UNDP to measure the success of projects and portfolios**

- **Coverage:** the extent to which projects reach vulnerable stakeholders (individuals, households, businesses, government agencies, policymakers, etc.)
- **Impact:** the extent to which projects reduce vulnerability and/or enhance adaptive capacity (through bringing about changes in adaptation processes: policy making/planning, capacity building/awareness raising, information management, etc.)
- **Sustainability:** the ability of stakeholders to continue the adaptation processes beyond project lifetimes, thereby sustaining development benefits

[12] UNDP. 2008. Proposed Framework for Monitoring Adaptation to Climate Change. Draft. United Nations Development Programme.

[13] FCCC/SBSTA/2010/5. *Synthesis report on efforts undertaken to monitor and evaluate the implementation of adaptation projects, policies and programmes and the costs and effectiveness of completed projects, policies and programmes, and views on lessons learned, good practices, gaps and needs. Note by the secretariat*. Available at http://unfccc.int/resource/docs/2010/sbsta/eng/05.pdf >

- **Replicability:** the extent to which projects generate and disseminate results and lessons of value in other, comparable contexts

### Considering *Maladaptation*

When developing an adaptation M&E framework it is important to consider whether the adaptation initiative may, especially in the long-term, increase, rather than decrease vulnerability to climate change. *Maladaptation* is *"an action or process that increases vulnerability to climate change-related hazards. Maladaptive actions and processes often include planned development policies and measures that deliver short-term gains or economic benefits but lead to exacerbated vulnerability in the medium to long-term."*[14] *(UNDP)*

A more pragmatic explanation of *maladaptation* is discussed in the box below.

***Examples of maladaptation***

- Inefficient use of resources compared to other options (e.g. unnecessarily displacing development funds away from other concerns)
- Ineffective (e.g. relying on scenarios of future climatic risks that are not subsequently realized and actions that have no other benefits)
- Inequitable reductions in vulnerability (or shifting vulnerability from one group to another)
- Inflexible decisions or investments that may reduce the possibility for future adaptation
-

Source: Desk Review: Evaluation of Adaptation to Climate Change from a Development Perspective (Hedge *et al*., 2008)

## 5.2 IDS Sussex GEF DFID: Evaluation of Adaptation to Climate Change from a Development Perspective – (IDS, commissioned by GEF Evaluation Office and financed by DFID).

This summary serves to highlight some of the main elements presented in this desk review. It does not purport to be comprehensive.

The desk review examines current climate change adaptation interventions (CCAI) and identifies the next steps that are required to develop frameworks for assessing CCAI.

The desk review sought answers to the following three questions:

- "What types of interventions can already be considered for evaluation with an adaptation lens?
- What additional questions should be asked when applying an 'adaptation lens' to evaluate such interventions?
- What indicators of success relating to adaptation have been used in different types of

[14] Avaliable at < http://www.undp.org/climatechange/adapt/definitions.html>

projects and programmes?"[15]

The desk review examines how evaluations of adaptation interventions fit into broader development agendas. Three types of approaches to evaluating adaptation interventions presented are as follows:

- "Those which examine development projects, which are merely re-labelled as climate change adaptation. In this case there is already sound management of investment and effort has always had monitoring and evaluation mechanisms built in from the outset, in some case within logical frameworks of projects. Development agencies and funders have mechanisms for evaluating long- standing areas of intervention. These are likely to be local level direct interventions.

- Programmes and projects where climate change is being mainstreamed into them.

- Interventions which have been framed at the outset as addressing climate change."[16]

The review states that evaluations of adaptation interventions rarely occurs and when it does it happens post-hoc. After reviewing the Global Environment Facility (GEF) database the authors noted that the evaluation methodologies could be improved by focusing on the criteria of a successful adaptation intervention. The key modifications needed to evaluate CCAIs are as follows:

"Time frames: mechanisms to provide ongoing feedback on impacts beyond the lifespan of the project; and Institutional memory - Information storage and retrieval systems.

- Methods: Participatory evaluation - 360°
- Impact indicators developed in partnership with beneficiaries

The establishment of baseline scenarios and development of the capacity to monitor change over long timescales, retain the information and provide it in usable formats at the right time."[17]

Coming to a consensus about what is a successful CCAI is noted as one of the main components in developing a framework for evaluating CCAI. The authors propose five main factors that can determine a successful CCAI. These factors are as follows:

- Effectiveness – achieving objectives
- Flexibility – to account for the uncertainty of climate change and the evolving knowledge base
- Equity – across sectors; regions and societies
- Efficiency – to address agreed acceptable levels of risk
- Sustainability – the wider implications of adaptation[18]

The authors promote the concept of embedding adaptation into broader development agendas.



[15] Dowie, A., Greeley, M., Hedger, M., Horrocks, L., Leavy, J., and Mitchell, T. (2008) *Desk Review: Evaluation to Climate Change from a Development Perspective*. A study commissioned by the GEF Evaluation Office and financed by DFID. p. 2.
[16] Ibid. p. 7.
[17] Ibid. p. 8.
[18] Ibid.

*"With the move in evaluation to larger scale, sector-wide thematic country level and synthesis evaluations, it will be important to promote integration. Rather than fostering an explosion of evaluations of the multiplicity of interventions which can be labelled as CCAI, greater efforts is required in ensuring adaptation rests within Poverty Reduction Strategy Papers (PRSPs) at the outset with consequent integration of National Adaptation Programmes of Action (NAPAs). In addition, it is vital that sectoral plans, particularly water and agriculture, have climate change fully integrated within them. So the key will be to devise indicators which can measure progress in knowledge generation, its assimilation and application and flexible institutions at all scales."*[19]

*Incorporating CCAI and disaster risk reduction (DRR) is encouraged. "Some large development agencies are already developing approaches to evaluation with methodologies, and indicators for process and outcomes being established. Coherence and coordination could be investigated also incorporating Disaster Risk Reduction (DRR). Both climate change and DRR are structured and developing separately in terms of institutional frameworks at international, national and local levels. DRR and adaptation to climate change have many similarities. There are great opportunities for synergies rather than duplication, and these should be sought."*[20]

## 5.3 UNFCCC 2010: Synthesis report on efforts undertaken to monitor and evaluate the implementation of adaptation projects, policies and programmes and the costs and effectiveness of completed projects, policies and programmes, and views on lessons learned, good practices, gaps and needs

Summary of UNFCCC report, titled: *Synthesis report on efforts undertaken to monitor and evaluate the implementation of adaptation projects, policies and programmes and the costs and effectiveness of completed projects, policies and programmes, and views on lessons learned, good practices, gaps and needs.* At the conclusion of the twenty-eighth session on the Nairobi work programme on impacts, vulnerability and adaptation to climate change, the Subsidiary Body for Scientific and Technological Advice (SBST) asked the secretariat to prepare a synthesis report1 based on information submitted by Parties and relevant organizations. The purpose of the following summary of the report is to highlight some of the report's main elements. It does purport to be comprehensive.

**Terms defined within the report**

Effectiveness: Assessing effectiveness involves two questions: first, have the objectives and targets been achieved; and second, can this be attributed to the measure taken?

Outputs: Measurable products and services which result from an adaptation project policy or programme.

Outcomes: Short- and medium-term effects of an adaptation measure's outputs.

Impact: Positive and negative long-term effects on identifiable groups and systems.

[19] Ibid.
[20] Ibid.

**The basics of monitoring and evaluating (M&E) adaptation**

According to the report, the purpose of monitoring and evaluating adaptation initiatives are the following:

- To keep track of progress made in implementing a specific adaptation measure in relation to its objectives and inputs, which include financial resources.
- Monitoring enables planners and practitioners to improve adaptation efforts by adjusting processes and targets.
- Evaluation is a process for systematically and objectively determining the effectiveness of an adaptation measure in the light of its objectives.

The report recommends that when monitoring and evaluating an adaptation project, policy or programme, the following elements need to be considered:

- The validity of the underlying scientific assumptions.
- The appropriateness of projects, policies and programmes.
- The effectiveness efficiency and overall utility of projects.

According to the report, the first questions that must addressed when monitoring and evaluating an adaptation implementation are:

- What has to be monitored and evaluated (scope)?
- Who has to monitor and evaluate it (responsibilities)?
- Monitoring, reporting and review are usually undertaken by those implementing the project, policy or programme.
- Evaluations are usually undertaken by independent experts taking into account the results of the monitoring.



**Stages of monitoring and evaluating**

The report recommends that an adaptation initiative should be monitored and evaluated at the following stages:

- During implementation (ongoing monitoring and regular evaluation to assess progress made).

- Immediately after conclusion ('terminal' evaluation to assess efficiency and preliminary effectiveness).

- Some years after conclusion (post evaluation to assess effectiveness and overall utility of the measure).

**Indicators**

Citing a technical paper from the European Topic Centre on Air and Climate Change2, the report recommends considering the following issues when developing indicators:

- Availability: do appropriate data and indicators already exist?

• Potential availability: are reliable data available in areas where indicators have not yet been developed?

• Representativeness: are indicators available to measure progress on important or determining factors, rather than less significant issues?

• Continuity: are data readily available over an unbroken time series for the indicators under consideration?

The report states that a monitoring and evaluating system should be able to define the following:

- Measures of success.
- Consider performance relative to expectations.
- Describe how results of the monitoring and evaluation will be fed back into the ongoing adaptation policy process.
- Allow for the inclusion of new information and revision of adaptation projects, policies and programmes.

According to the report, the value of indicators are as follows:

- They simplify, quantify, standardize and communicate complex and often disparate data and information.
- They may provide the basis for assessments of efficiency and effectiveness

The report analyzes why developing indicators to assess adaptation is so challenging. These challenges arise from the following issues:

- The nature of adaptation
- The long timescales associated with climate change and its impacts.
- The uncertainty associated with projected impacts and the related challenges of defining a long- term vision of the outcome of adaptation and agreeing on level of acceptable risk.
- The multi-sectoral nature of adaptation.
- The involvement at different times and places of a large number of stakeholders.
- Reversed logic, which means that the measure is successful by default when nothing happens.
- Adaptation lacks an agreed metric to determine effectiveness
- The outcomes of evaluations of adaptation projects, policies and programmes may not always be directly comparable.

- Vulnerability assessments require value judgments, and any attempt to define and measure vulnerability must be the result of a consultative, stakeholder-driven process, rather than the result of technical analysis resulting in a simple metric.

- The difficulty of attributing cause and effect

As adaptation entails a range of projects, policies and programmes across sectors and levels, their effect may be difficult to distinguish from the effects of other sectoral activities.

If indicators are needed in order to show that a particular project, policy or programme has been cost-effective, then it will be essential to find ways to attribute measured successes to those individual actions.

**Monitoring and evaluating current adaptation projects, policies and programmes**

Citing the EU submission, the report states that integrated monitoring and evaluating approaches allow:

• Allow rapid accumulation of knowledge

• Avoid duplication of work

• Are more cost-effective than running isolated projects.

• The flexibility and robustness that adaptation planning requires to adjust to uncertainties and new insights and to take account of changing stakeholder attitudes to risk.

The report discusses the development of adaptation-specific, results-based management (RBM) frameworks that have been adopted by a number of funds, including the Adaptation Fund, the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund. The following are characteristics of RBM frameworks:

- ✓ They monitor and evaluate at the programme, or fund, level; at the level of the sectors or areas of intervention; and at project level.
- ✓ They use a combination of process-based and outcome-based indicators.
- ✓ Each project requires baseline data and its own set of sector-based output and outcome indicators, in order for project managers and evaluators to assess the progress made and whether it has achieved its stated objectives.

**Lessons learned and good practices**

The report recognizes the limited experience of monitoring and evaluating adaptation projects policies and programmes. However, it states that a number of lessons learned and good practices have been identified. They are as follows:

- To make use of existing monitoring and evaluation systems to the extent possible.
- To engage broadly with stakeholders at all levels and in and across all relevant sectors.

• To agree on mechanisms, institutions and criteria, including roles and responsibilities, for monitoring and evaluation.

• That continued monitoring and regular evaluation ensures that good as well as maladaptive practices are recognized and can then be shared with a large number of adaptation stakeholders.

• Despite existing challenges, the benefits of developing and using indicators to monitor and evaluate adaptation are considerable.

• Enhancing outcome-based indicators is probably desirable to allow for an assessment of the effectiveness of the adaptation measure.

• A mix of quantitative, qualitative and narrative tools be used, including surveys and scorecards, so that results can be triangulated to give the most accurate picture possible of progress towards adaptation and the factors involved.

**Identified gaps and needs**

The report identified gaps and needs in monitoring and evaluating adapation projects, policies and programmes. They are as follows:

• Developing country-driven, indicator-based monitoring and evaluation systems for adaptation in different sectors and levels to identify good practices and maladaptation.

• Many adaptation policies and programmes lack measurable targets or clearly defined expected outcomes. Without these, indicators cannot be used to evaluate effectiveness.

• Given the range of possible adaptation indicators, the European Environment Agency sees a need for an agreement, for example on a regional scale, on the definition of key climate change indicators, including extreme weather events (e.g. floods and droughts), and to define operational ways of tracking impacts in multiple sectors, over a variety of timescales and geographical scales.

• Lack of financial, human and technical resources and capacities.

• Lack of good baseline data and historical trends to allow for an analysis of effectiveness.

• Insufficient reporting and exchange of data and information, in particular when adaptation measures are implemented by a range of stakeholders across levels and sectors.

**Further Considerations**

Given the evolving nature of monitoring and evaluating adaptation projects, policies and programmes, the report recommends further investigation into the following considerations:

- How can monitoring and evaluation of adaptation measures make the best use of existing monitoring and evaluation systems, including existing indicators?

- Could these systems be used as they are, do they need to be revised or are new and additional systems required?
- What are the advantages and disadvantages of each of these approaches?

- What kinds and combinations of process and outcome indicators would be most suitable for monitoring and evaluating adaptation policies, programmes and projects?
- In the light of the multi-sectoral, multi-scale and multi-stakeholder nature of adaptation, how should monitoring and evaluation of adaptation policies, programmes and projects take place? What roles and responsibilities need to be assigned?
- How can results from monitoring and reporting be reported and disseminated so as t ensure that they are fed back into the project, policy or programme concerned but also to allow for lessons learned and good practices identified to be shared with the wider community of adaptation planners and practitioners?

## 5.4. Some Highlights of the Three Summary Framework Reports

In highlighting some of the commonalities found within the following three reports: The United Nations Development Programme (UNDP), "Proposed Framework for Monitoring Adaptation to Climate Change", the Institute of Development Studies (IDS) "Desk Review: Evaluation of Adaptation to Climate Change from a Development Perspective" and the United Nations Framework for Convention on Climate Change (UNFCCC) "Synthesis report on efforts undertaken to monitor and evaluate the implementation of adaptation projects, policies and programmes and the costs and effectiveness of completed projects, policies and programmes, and views on lessons learned, good practices, gaps and needs". The summaries of the three reports are presented in an earlier section.

The literature acknowledges that Adaptation to climate change (ACC) is inherently complex, as it involves many disciplines, stakeholders, technologies, and actors. ACC's complexity makes monitoring and evaluating adaptation interventions a very challenging task. The literature addresses the complexity of adaptation by designing a M&E framework that narrows the scope of adaptation. This has been done by structuring the M&E framework according to scales, sectors and processes and through developing a range of indicators.

There is congruence in terms of the scope of adaptation is vast; encompassing many different actors, issues and disciplines. There is also agreement that in order to address the complexity of developing an M&E framework for ACC, there can be flexible structuring an M&E adaptation framework according to scales, sectors and processes. Additionally, as a means of synergizing with current development objectives, it recommends all adaptation efforts in some way be aligned with the Millennium Development Goals (MDGs) and integrated into Poverty Reduction Strategy Papers (PRSPs), as well as National Adaptation Programmes of Action (NAPAs), if relevant. The following section of this synthesis report describes some of the main elements of the literature regarding structuring an M&E framework of adaptation according to scales, sectors and processes.

The literature characterizes ACC interventions as occurring at different scales, including, but not limited to: the international, national and local level. Defining an ACC intervention according to scales allows an M&E framework for ACC to focus on specific stakeholders and institutions at each scale. In the publication "Adaptation to Climate Change from a Development Perspective" the authors addressed the complexity of evaluating an ACC intervention by developing a "pyramid diagram to show the interrelationship of scale, evaluation methods and indicators."

As stated earlier in this report, the UNDP framework[21] addresses the complexity of ACC by organizing their framework according to the following six "Thematic areas" (TAs): TA1: Agriculture/food security; TA2: Water resources and quality; TA3: Public health; TA4: Disaster risk management; TA5: Coastal zone development; and TA6: Natural resources management. As reiterated and importantly, UNDP framework states, "ultimately, interventions should be guided by stakeholder priorities and agency expertise, and this framework can be used as a reference for adapting a sensible monitoring approach."[22]

# 6. Guiding questions – Capacity Development for Monitoring & Evaluation Adaptation to Climate Change with Indicators

The following guiding questions are many that a practitioner would likely ask, and they highlight elements that have been repeatedly referred to as foundational to an M&E Framework. Also provided, are descriptions of a number of examples from the field, to enrich discussion.

### i) ASSESSMENT OF CLIMATE CHANGE SITUATION IN CONTEXT

**What situation are we in - in terms of climate change – Generally?** To start with, it is necessary to complete a 380 degree look at the current situation of climate change generally, a thumbnail sketch really, of the case specific context. Much of this information can be compiled from existing sources, starting with the Country Common Assessments of the United Nations Development Assistance Framework and any other relevant reports that may be produced.

**With a multi-sector and a multi stakeholder task force, generate an Assessment of ACC in Context** with the goal of gaining as complete as possible an understanding of the situation. Many institutions and sectors can be including to participate as appropriate in the assessment. The international community should also be included in discussions. The primary tasks would be:

- Assess Economic, Social and Ecological Risk, Vulnerability – and Resilience
- Access information and knowledge about how climate change is currently affecting the social, physical, economic and environmental vulnerability that a society faces.
- Complementary information and knowledge regarding the ways in which vulnerabilities are changing in the short, medium and longer term, is also required.

[21] UNDP, 2008
[22] Ibid

## ii) ASSESSMENT OF M&E IN ACC IN CONTEXT

**How are we doing in terms of <u>monitoring and evaluating adaptation to climate change</u> progress?**

a) Is a key understanding, ascertained by multi-sector process, of case specific M &E for Adaptation to Climate Change, including of all processes and dynamics that influence M&E for ACC in that particular context?

b) Is functional M&E capacity in place to examine all of the following aspects of an ACC initiative?
- Coverage / Scope
- Impact
- Results: Have all the outputs been delivered? What is the achievement in the outcome?
- Efficiency: How well the inputs have translated into Outputs?
- Effectiveness: How well the outputs have transformed into outcomes
- Sustainability: What is the contribution to the impact?
- Replicability
- Relevance M&E of ACC projects must be able to evaluate projects whose impacts will not be seen for many years after the project lifetime has ended.

c) Are the adaptation strategies or initiatives planned in line with guiding principles or characteristics? *The main 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;
- recognizing the importance of social values and structures and
- working towards preparedness, planning and readiness .

## iii) SETTING THE CRITICAL FOUNDATIONS AND PROCESSES FOR M&E FOR ACC

Although this framework is designed primarily for a national practitioner, it is quite wide in scope and comprehensive and many elements of it are applicable at all levels, and with all stake-holders. It would be applicable to all sectors. Giving collective thought to the existent functionality of the foundational structures and processes needed to build capacity for monitoring and evaluation of adaption to climate change, is the first task. The following list of questions works towards taking a fairly comprehensive approach to monitoring and evaluation for adaptation to climate change. It is not meant to be completely comprehensive, but rather to, along with the contents of this report in its

entirety, interest and equip the practitioner enabling more capacity to work towards M&E capacity development.

**M&E for ACC – Capability**

- Is there national support for working towards adaptation to climate change?
- Is Government taking and interest? Are they producing baseline reports on climate change and are they involved in efforts generally?
- Is there policy and legislation for M&E for ACC?
- Is there coordination for ACC within the government, and then with and within the international community?
- Are there technical capacity human resources to meet the M&E for Ac demands?
- Is there a set of guiding principles for the M&E for ACC?
- Are there guidelines for M&E for ACC in any of the sectors?
- Is there a management structure to be responsible for leading and coordinating M&E for ACC?
- Is there regular government funding earmarked for M&E for ACC?
- Is there a monitoring and evaluation system which not only addresses issues in relation to transparency and accountability but also facilitates a systematic approach to change and improvement as a direct consequence of progress reporting?
- Are tertiary and academic institutions able to meet educational demands in ACC, and particularly for M&E for ACC?
- Are the NGO – both local and international communities – maintaining quality M&E for their ACC efforts, and if so is it replicable?
- Is there locally available experts or private consultant specializing in M&E for ACC?
- Is there adequate DATA and Information for Climate Change Scenarios?
- Have any baselines been established?
- Is there capacity to deal with Calibration/ moving baseline , normalization of indicators?
- Is Knowledge Management for M&E for ACC well handled?

- Has there been effort in any sector to build upon tried and proven M&E methodology and experiences as applicable from disaster risk reduction, sustainable livelihoods and environmental management efforts?
- Is there stakeholder engagement in M&E for ACC?
- Is interest in M&E for ACC from the private sector also? Is Industry monitoring its advancements in M&E for ACC? Are they connecting with government?
- Is there cross sector resource mobilization for M&E for ACC?
- Is the national community staying abreast of new M&E related technological options?
- Is there capacity for vulnerability assessment available? Can the following functions be adequately met?
  - Screen for Vulnerability
  - Identify Adaptation Options
  - Conduct Analysis
- Is M&E for disaster planning and risk reduction assessments in place?
- Are there M&E for ACC capacities available, participating and working at all levels?
  - Internationally
  - Regionally
  - Nationally
  - Sub-nationally
  - Municipally
  - Locally
- Are M&E structures being designed as learning organizations?
- Have cross cutting issues been identified in M&E?

**iv) INDICATORS**

It appears from the literature review that the application of rigorous IE techniques to assess the effectiveness of climate change interventions has so far been limited. The evaluations generally tend to lack baselines, and are not generally integrated into projects.

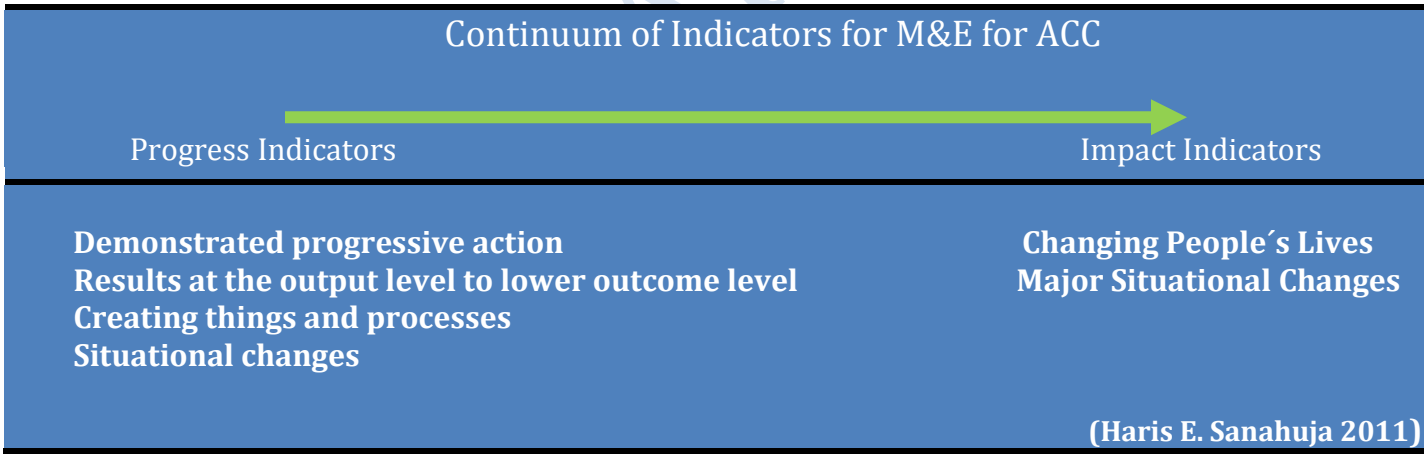
Some of the challenges

- As mentioned, the lack of baselines,
- Long time scales,
- The diversity of interventions and the lack of agreement on indicators and the definition of adaptation success.
- Impact level evaluation will be assessing impact on development outcomes.

Adaptation Indicators may be process-based (to measure progress in implementation) or outcome-based (to measure the effectiveness of the intervention). Developing indicators at the project or programme level is relatively straightforward, as many projects are undertaken within sectors where established monitoring and evaluation systems with proven indicators already exist.

The literature emphasizes the critical importance of developing and utilizing appropriate indicators in a M&E framework for adaptation. According to the UNFCCC synthesis report, the purposes of indicators are to simplify, quantify, standardize and communicate complex and often disparate data and information. Additionally, the report states that indicators may provide the basis for assessments of efficiency and effectiveness. The literature advises that indicators are to be used at various scales, across adaptation processes and at the objective, output and outcome levels. A good balance of indicators of process, outputs, outcomes and impact needs is requisite maintained; as well a indicators that cover the evaluative criteria of coverage, effectiveness, sustainability and replication. Since, climate change has become a certainty, so the projects need effective indicators to anticipate, manage, and ameliorate the burdens it will impose.

In looking at many examples of indicators currently being employed, and some of the key literature, it became soon apparent that it is far more realistic to think of indicators more on a continuum, than in distinctive categories. (Please see the diagram below). Indicators are needed to measure both the results of the ACC effort and also the impact level and developmental level results.




## 6.1. List of Sample Indicators

Below is a list of Indicators collected from ongoing initiatives**.** They are loosely categorized. The list remains only part of an almost infinite list. Indicators are case specific and thus will always be in some way unique to the effort with which they are associated. These are based on extensive review of real plans and strategies at national and sub national levels. They have been grouped into only two categories, Indicators of Action for Increasing Environmental Resilience and Indicators of Action of

Increasing Social Resilience. The vast majority rested into the latter group. These are both complementary and supplemental to existing indicators.

**Indicators of Action for Increasing Environmental Resilience**

Eg. Reduction of climate change hazards through coastal afforestation with community participation.

**Indicators of Action of Increasing Social Resilience**

- PHYSICAL INFRASTRUCTURE AND BASIC SERVICES

Examples:

  - Construction of flood shelter, and information and assistance centre to cope with enhanced recurrent floods in major floodplains.
  - Enhancing resilience of urban infrastructure and industries to impacts of climate change
  - Providing sustainable drinking water to coastal communities to combat enhanced salinity due to sea level rise.
  - Protect – Safeguard existing coastal land uses by implementing measures such as sea walls, dikes, beach nourishment and wetland restoration.
  - Engage in actions that compensate for climate-related changes (e.g. constructing raised homes on pilings to accommodate rising sea levels).

- LAND USE

Examples:

  - Promoting adaptation to coastal crop agriculture to combat increased salinity
  - Adaptation to agriculture systems in areas prone to enhanced flash flooding.
  - Focuses on governance and territorial management, stressing the relevance of local DRM and urban dimensions of risk, along with the pivotal role of local authorities.
  - Design and implement zoning regulations and building codes

- FOOD SECURITY
  - Resilience of the food production & security sector to climate change enhanced.

- CHANGES IN RESOURCE USE PRACTICES -
  - Adaptation to fisheries in areas prone to enhanced flooding through adaptive and diversified fish culture practices
  - Promoting adaptation to coastal fisheries through culture of salt tolerant fish special in coastal areas.

- WATER RESOURCES AND QUALITY
  - Targets environmental dimensions of disaster risk management, in particular adaptation to climate change and water resources management.

- Reallocation of reservoir yield
- Water conservation and demand management (including metering and price structure)
- Expand well fields
- Rainwater harvesting

❖ PUBLIC HEALTH

Mapping of the Eco-zones and the changes in vector borne diseases

❖ POLICY and PLANNING

- Mainstreaming adaptation to climate change into policies and programmes in different sectors (focusing on disaster management, water, agriculture, health and industry).
- State policies and programmes in the food production & security sector integrate climate change adaptation priorities

❖ INCREASING AWARENESS

- School Campaigns as part of Annual DRR Day.

❖ INFORMATION MANAGEMENT

- Promotion of research on drought, flood and saline tolerant varieties of crops to facilitate adaptation in future.

❖ EDUCATION

- Inclusion of climate change adaptation and other issues in curriculum at secondary and tertiary educational institution.

❖ DISASTER RISK REDUCTION

- Climate change and adaptation information dissemination to vulnerable community for emergency preparedness measures and awareness raising on enhanced climatic disasters
- Identifying of key actions to be taken at the national and sub-national levels

❖ TRADITIONAL KNOWLEDGE

.

- Development of eco-specific adaptive knowledge (including indigenous knowledge) on adaptation to climate variability to enhance adaptive capacity for future climate change.

❖ RELOCATION

- Relocate human settlement (homes, roads, etc.) away from areas of potential flooding, allowing the rising sea to advance inland

❖ GENDER ISSUES

- Acting on the Role of gender in DRR.
- Motivational Influences in gender analysis

- DEMOGRAPHIC ISSUES
  - Mapping Adaptation to Climate Change in Populations which are aging.

- MULTI-SECTOR HOLISTIC EFFORTS
  - Focus on the social development and compensatory measures to reduce vulnerability, identifying concrete tasks for the Ministry of Education, Ministry of Housing and Territorial Zoning, National Environmental Authority and the Ministry of Health, to further DRR through education, land use planning and vulnerability reduction of critical infrastructure, such as schools and health care facilities.

- HUMAN SECURITY
  - Displaced populations
  - Climate change refugees
  - Changes in migrants and migrant working
  - Increased Rural – Urban Migration
  - Increased social unrest over resources

- ECONOMICS
  - Government taking responsibility for developing financial mechanisms to reduce the vulnerability of the portfolio of public investments by introducing DRR considerations into the investment planning processes, as well as developing mechanisms for financial protection.
  - Compensation for flood damages
  - Facilitate access to credit

- INSURANCE
  - Adequately addressing loss and damage from the impacts of climate change
  - Exploring options for insurance and other emergency preparedness measures to cope with enhanced climatic disasters

- FINANCIAL SECTOR
  - Recognizing the reality of climate change and mainstream it into all business processes. It is a decision factor for business planning and strategies, portfolio management, and a individual transaction level.
  - Developing and supplying products and services for the new markets which will come with integrated adaptation e.g. at micro-level in developing countries, and for ecological services.
  - Working with policymakers to realize the transition to integrated adaptation.
  - Ensuring that contingency plans consider “worst case” disasters.

- SOCIAL MOBILIZATION
  - ACC Civil organizations active and functioning

## 6.2 Types of Indicators

The box below clearly shows the four types of indicators used by UNDP, dividing indicators into four types being coverage, impact, sustainability and replicability.

**The four types of indicators used by UNDP**

**Coverage:** the extent to which projects reach vulnerable stakeholders (individuals, households, businesses, government agencies, policymakers, etc.)

Number of households, businesses (or other appropriate units) engaged in vulnerability reduction or adaptive capacity development activities, as a proportion of households or other units in the community or region targeted by the project.

- Number of policies introduced or adjusted to incorporate climate change risks.
- Number of investment decisions revised or made to incorporate climate change risks.
- Number of stakeholders (individuals, households, communities, etc.) served by new or expanded climate information management systems (e.g. early warning systems, forecasting,

**Impact:** the extent to which projects reduce vulnerability and/or enhance adaptive capacity (through bringing about changes in adaptation processes: policy-making/planning, capacity building/awareness raising, information management, etc.

- Percent change in stakeholders' behaviours utilizing adjusted practices or resources for managing climate change risk
- Percent improvement in stakeholders' capacities to manage climate change
- Communicate climate change risks, disseminate information, or make decisions based on high quality information), as relevant,
- Percent reduction in perceived vulnerability:
- Percent improvement in stakeholder perceptions of vulnerability to a recurrence of primary climate change-related threat(s),.

*combined with*

- Perceived success of project interventions in delivering mechanisms to reduce
- vulnerability,
- Percent improvement in perceived adaptive capacity:
- Percent improvement in stakeholder perceptions of the range or robustness of
- options available to cope with recurrence of primary climate change-related
- threat(s)

*Supplementary indicators specific to the TA(s) addressed by the project should also be considered, where possible*

**Sustainability:** the ability of stakeholders to continue the adaptation processes beyond project lifetimes, thereby sustaining development benefits

- Number of beneficiaries of project receiving training in implementation of specific adaptation measures or decision-support tools.
- Local (or spatially appropriate) availability of skills and resources necessary to continual adaptation after conclusion of project
- Support for project activities among participating communities

Number of outside programmes, policies or projects incorporating project results into their processes

**Replicability:** the extent to which projects generate and disseminate results and lessons of value in other, comparable contexts.

## 6.3 How the UK and Finland are looking at Progress or Process Indicators for M&E of ACC

The following comparison provides an overview of the process-based indicators used by Finland and the United Kingdom to evaluate progress in adaptation. Besides having different foci, Finland´s indicators focuses on sectors whereas the United Kingdom´s indicator focuses on local governments.

**Adaptation to Climate Change Process Indicators used by the UK and Finland 2009/2010**
Adapted from UNFCCC 2010 Synthesis Report http://unfccc.int/resource/docs/2010/sbsta/eng/05.pdf

- Potential threats and opportunities across estate and services starting to be assessed
- Next steps to build on that assessment identified and agreed upon
- Public commitment and impacts assessment
- Public commitment made to identify, communicate and manage climate-related risk
- Local risk-based assessment of significant vulnerabilities and opportunities made
- Comprehensive risk assessment
- Comprehensive risk-based assessment undertaken and priority risks for services identified
- Most effective adaptive responses identified and incorporated in council strategies, plans
- Adaptive responses implemented in some priority areas
- Comprehensive action plan
- Climate impacts and risks embedded across council decision-making
- Comprehensive adaptation action plan developed
- Adaptive responses implemented in all priority areas
- Implementation, monitoring and continuous review
- Comprehensive adaptation action plan across the local authority area implemented
- Robust process for regular and continual monitoring and review exists to ensure progress
- Appropriate adaptive responses implemented

- Need for adaptation recognized among a group of pioneers in the sector
- Research ongoing and adequate on the impacts of, or adaptation, to climate change
- Some adaptation measures identified but not yet necessarily implemented
- Need for adaptation measures recognized to some extent in the sector
- Impacts of climate change known indicatively (qualitative information),
- Adaptation measures identified and plans made for their implementation
- Need for adaptation measures quite well recognize in the sector
- Impacts quite well known, taking into account uncertainty
- Adaptation measures identified and their implementation launched
- Cross-sectoral cooperation on adaptation measures started
- Need for adaptation measures widely recognized and accepted in the sector
- Adaptation incorporated into regular decision making processes
- Impacts well known, within the limits of uncertainty
- Implementation of adaptation measures widely launched and their benefits assessed
- Cross-sectoral cooperation on adaptation measures an established practice
- Adaptation measures under the adaptation strategy or recognized otherwise

## 6.4 ACC Building on Indicators and approaches from the Disaster Risk Reduction Arena Focus on - Hyogo Framework for Action HFA

The following box was adapted from: **Desk Review: Evaluation Of Adaptation To Climate Change From A Development Perspective (2008)** IDS, Sussex, UK[23] . This clearly shows the convergence of thinking between ACC, DRR and poverty

***Building on Indicators and approaches from DRR***

One distinctive feature of adaptation to climate change is that it involves the development of adaptive capacity and a learning process. Increasingly, DRR approaches are becoming embedded within development programming and the progress of 'mainstreaming' DRR appears to be ahead of efforts to 'mainstream' climate change adaptation. With a strong emerging realisation that DRR interventions must simultaneously tackle poverty and disaster risk at the same time to be successful, efforts to build evaluation frameworks around the Hyogo Framework for Action are increasingly drawing on indicators and methods from the evaluation approaches to measuring the success of mainstream poverty and development projects and programmes. (The Hyogo Framework for Action is a non-binding international agreement committing 168 signatory governments in 2005, to pursue efforts to reduce disaster risk in their countries. If, as many suggest, the starting point for climate change adaptation in reducing the risk to current climate variability then it makes sense for the evaluation of Climate Change Adapation Initiatives (CCAI), at least at a project and programme level, to take DRR evaluation and indicator frameworks as a starting point. Recently, an indicator framework has been developed around the Hyogo Framework for Action (HFA).

The indicators are organised around the HFA's five priorities:
*1. Ensure that DRR is a national and a local priority with a strong institutional basis for implementation*.
*2. Identify, assess and monitor disaster risks and enhance early warning.*
*3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels.*
*4. Reduce the underlying risk factors.*
5. *Strengthen disaster preparedness for effective response at all levels.*

Each of the HFA's five areas has four or five headline indicators. For example, the indicators on priority one '*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation*' are:
• National disaster risk reduction policy framework elaborated
• Multi-sectoral disaster risk reduction platform operational
• Disaster risk reduction legal framework elaborated
• Dedicated resources for disaster risk reduction allocated

These indicators reflect an international and national scale for monitoring disaster risk reduction, Twigg's (2007) *Characteristics of a Disaster Resilient Community* provides this, again organised around the five priority areas, but summarised as – (i) governance, (ii) risk assessment, (iii) knowledge and education, (iv) risk management and vulnerability reduction and (v) disaster preparedness and response. Each indicator is organised around 'components of resilience Duplicating another set of tools, norms and evaluation approaches will further entrench the barriers between DRR, adaptation and development. Simply, effective evaluation of CCAI would benefit, and even depends on, closer programmatic links across climate change, DRR and development. Although the opportunities for integration across disaster management, climate change, environment and natural resources management and poverty reduction, mean a significant payoff has been recognised for some time, little has yet happened. But both climate change and DRR are structured and developing separately in terms of institutional frameworks at international, national and local levels. DRR and adaptation to climate change have many similarities. There are great opportunities for synergies and this is what any new initiative on establishing evaluation for CCAI should support.

[23] Source: http://www.preventionweb.net/files/7845_GEF20final20report20Oct20081.pdf

# 7. Monitoring and Evaluation of ACC - How Nations are Adapting to Climate Change - Nine ACC Strategic Frameworks from around the World

There are nineNational Adaptation to Climate Change Strategic Frameworks that can help to il. Four are from more developed countries, namely Australia, Scotland UK., Belgium, and Germany, and five are from developing countries – Bangladesh, Cape Verde, Mauritania, Mozambique and Sudan. Germany is highlighted in a box as one example of frameworks rich in process details.

A national adaptation framework will be shaped, in part, by the specifics of the country. Indeed, among the national frameworks discussed here, there are some differences in the frameworks, as each country comes to the table with different levels of resources, vulnerabilities, strengths and weaknesses. However, despite these differences, many commonalities are shared among the national frameworks. These commonalities and topics for further consideration are presented.



**Commonalities**

**Identifying the Context**
Most of the national frameworks identify the context in which adaptation to climate change will occur. In identifying the context, the national frameworks specifically look at some of the following issues, including: geographical information, the socio-economic situation, demographic information and key environmental stressors.

**Vulnerability Assessment**
Each of the national frameworks include an assessment of current observed impacts of climate change, as well as an assessment of current vulnerability and future vulnerability to climate change. Within the vulnerability assessments, vulnerabilities to specific climatic hazards are identified, such as: droughts, cyclones and floods.

**National Adaptation Programmes of Action (NAPAs)**
Each of the national frameworks of the Least Developed Countries (LDCs), include provisions for preparing for NAPAs, as well as identifying obstacles to NAPAs implementation. As part of NAPA, each LCD is to prioritize their adaptation needs. Accordingly, each of these national frameworks identifies specific sectors, communities and regions that are the most vulnerable to climate change. Additionally, prioritization criteria are included.

**Sectors**
Each of the national frameworks categorizes vulnerability assessments and adaptation objectives according to sectors, such as: agriculture, fisheries and infrastructure, health and tourism.

**Objectives & Strategies of Action**
Each of the national frameworks shares a general objective of reducing vulnerability and increasing resilience to climate change. How each national framework plans to achieve this objective differs

according to the specifics of their needs and resources and context in which they are adapting. Yet, despite these differences, there are many shared strategies for adaptation among the national frameworks, including: increased capacity development of stakeholders, increased cooperation and integration among stakeholders, natural resource management, increased technical capacity of national experts, and an increased awareness of climate change across all levels of government and among all stakeholders.

**Further Considerations**

According to the adaptation literature, indicators are the best way to assess the efficiency and effectiveness of an adaptation implementation. Among the national frameworks discussed here, there is virtually no discussion of indicators. Indeed, if adaptation implementations are to be properly assessed, indicators will need to be developed and incorporated into all national adaptation frameworks. Other issues that are relatively absent in these national adaptation frameworks, but deserve further consideration, include: maladaptation, gender, indigenous peoples, information collection and dissemination and aligning and integrating adaptation efforts with current development agendas, like poverty alleviation and disaster risk reduction.

*For details regarding all nine case studies, please refer to Appendices following the Summary Remarks*

# 8. Summary Remarks



It is envisaged that this document, a suggested Framework for Capacity Development for Monitoring and Evaluating Adaptation to Climate Change Intervention, will assist practitioners and facilitate their further positive plans and actions.

As an addition to the many rich resources related to M&E for ACC, this Framework works to complement the current array of literature, mainly by means of presenting a simple and straight forward approach to capacity development for monitoring and evaluating adaptation of climate change interventions. A considerable part of the report is devoted to more conceptual, yet foundational discussion, as a backdrop for action. Much of the information presented has been obtained from direct action research of evaluations of ACC and DRR projects completed, and ongoing.

One of the main lessons learned from this study is the importance of having all parties or stakeholders actually work – and plan- together, with real buy-in, interest and support. The leading role in government leadership, or Director´s level leadership in civil society, or CEO´s level support in the private sector, is vital for action in ACC, and as well in M&E for ACC.

Economic considerations and factors cannot be overestimated in terms of swaying public and political will, thus it is good practice to ensure that economic considerations are demonstrated clearly and openly, comparing the costs of action with the almost always, exponentially higher, costs of inaction.

Monitoring and evaluation for adaptation to climate change interventions is a relatively straightforward process, once it is approached by means of a structured, yet dynamic and coherent

framework. Extensive terminology and conceptual discussions are better kept to a minimum outside of more academic circles, as this tends to put off practitioners, who are often given M&E as one additional task to their other duties, both in the public and private sector.

Monitoring and evaluating of adaptation to climate change interventions is as critically needed as it is endlessly dynamic an area of study and practice. As climate change continues to impact global society, more interventions will be needed, supported and implemented, and thus demand will respectively increase for sound and solid ways and means by which to measure their effectiveness and ACC progress generally. It is timely for experts and practitioners alike, to meet with leaders from the other stakeholder groups, and set forth the necessary policy and legislative tools, along with the support needed to implement effective monitoring and evaluation for adaptation to climate change.

# APPENDICES

# 1- Compilation of Case Studies

## A. National Frameworks

Following are nine National Frameworks for Adaptation to Climate Change as taken verbatim from the official sites.

### 1 Australia

(http://www.coag.gov.au/coag_meeting_outcomes/2007-0413/docs/national_climate_change_adaption_framework.pdf)

**Increasing RESILIENCE- Building Understanding and Adaptive Capacity –**

- Australian centre for climate change adaptation
- Regional climate change information
- Integrated regional vulnerability assessments
- Communication, information and tools
- International connections and partnerships

**Reducing VULNERABILITY - Reducing Sectoral and Regional Vulnerability**

- Water resources
- Coastal regions
- Biodiversity
- Agriculture, fisheries and forestry
- Human health
- Tourism
- Settlements, infrastructure and planning
- Natural disaster management



### 2 Bangladesh NAPA

(http://unfccc.int/resource/docs/napa/ban01.pdf)

**Context**

**Characteristics**

- Physiographic Condition
- Demographic Situation
- Socio-economic Condition
- Infrastructure, Industries and Technologies
- Policy, Planning, Institutions and Governance
- Key Environmental Stresses

- Land and Soil
- Water
- Biodiversity
- Disasters

**Adverse Effects** of Climate Change and Variability on Biophysical and Key Sectors

**Framework for Adaptation Programme**

- An overview of Climate Variability and Change
- Observed Change
- Future Scenarios
- Actual and Potential Adverse Effects of Climate Change
- Present Impact of Climate Variability and Extreme
- Potential Future Vulnerability
  - Water Resources
  - Coastal Zone
  - Crop Agriculture and Food Security
  - Forestry and Biodiversity
  - Human health
  - Peoples Perception of Impacts of Climate variability and Change
  - Impacts on Livelihood
  - Summary of Important Climate Change Aspects for Bangladesh
  - NAPA Framework and Relationship with Development Goals
  - Urgency and Immediacy of Adaptation Measures
  - Complementary with National Goals and other MEAs
  - Potential Barriers for Implementation

**Identification of Key Adaptation Needs**

- Existing Knowledge on Coping Strategies
- Future Coping Strategies and Mechanisms
- List of Measures/Activities
  - Intervention Type Measures
  - Facilitating Type Measures

**Prioritization Criteria and Indicators**

**List of Priority Activities**

**NAPA Preparation Process**

## 3. Belgium

http://www.lne.be/themas/klimaatverandering/adaptatie/nationale-adaptatie-strategie/Belgian%20National%20Adaptation%20Strategy.pdf

CLIMATE FRAMEWORK
Towards a widespread international attention for climate change
The scientific basis - Global
The scientific basis - Belgium

IMPACTS OF CLIMATE CHANGE IN BELGIUM
Introduction
Main impacts in the different sectors
a) Health
b) Tourism
c) Agriculture
d) Forestry
e) Biodiversity, ecosystems and water
f) Coastal, marine and tidal areas
g) Production systems and physical infrastructure

ADAPTATION IN BELGIUM
The Belgian institutional structure
Adaptation actions on a sectoral level
a) Health
b) Tourism
c) Agriculture
d) Forestry
e) Biodiversity, ecosystems and water
f) Coastal, marine and tidal areas
g) Production systems and physical infrastructure

Adaptation actions on an inter-sectoral level
a) Research
b) International Cooperation

STRATEGY
Principles
Outline
A Roadmap to a future National climate change adaptation plan

## 4. Cape Verde - -NAPA

http://unfccc.int/resource/docs/napa/cpv01.pdf

**Vulnerability Assessments – Noting Points of Resilience**

- National Geography and Socio-Economic Circumstances

- Climatic Situation
- Natural Resources

**Adaptation Programme Framework**

**i. Impacts of Climate Change**
- Current - Observed Impacts of Climate Change.
- Forecasted- Forecasted Impacts of Climate Change on Key Sectors

**ii. Climate Change and the National Development Process**

**iii. Barriers to Implementing NAPA**

**iv. Identification of the Priority Adaptation Needs - Goals, Objectives And Priority Sectors**
- Integrated water resources management
- Improvement and security of agro-pastoral production
- The protection of coastal zones/impact related to tourism

**v. Strategies for Action**

- Capacity development for stakeholders in matters related to adaptation to climate change and climate variability.
- Increased investment in adaptive conservation and soil protection measures
- Action research in order to improve the resistance of the population and the ecosystems
- Information, education and communication campaigns for stakeholders on the risks due to the climate change and climate variability



## 5. Mauritania NAPA

(http://www.uneca.org/acpc/adaptation/docs/Mauritania_en.pdf)

**Country presentation**
General country characteristics
Pressure on environment
Biophysical processes and climate change
Key sectors and climate change

**Framework of Adaptation Programme**
Adverse effects of climate change
Background to NAPA
Obstacles to NAPA implementation

**Identification of basic adaptation needs**
Previous and current adaptation practices
Appropriate solutions to adaptation to climate change

**Criteria for selection of priority options**
Need for criteria
Basis for identification of criteria
Identified and validated criteria

**Project profiles of priority adaptation projects by sector**
Livestock sector
Forestry sector
Agricultural sector
Water sector
Arid and semi arid ecosystems
Marine and coastal ecosystems

**6. Mozambique NAPA**
(http://unfccc.int/resource/docs/napa/moz01.pdfINDEX)

**Context**
General Characteristics of Mozambique
Geophysical Information
Figure 1: Map illustrating the geographical location of Mozambique in southern Africa.
The Relief
Climate
Population and economic activities
**Characterization of Mozambique's Vulnerability to Extreme Events**
Drought
Floods
Tropical Cyclones
**Proposed Actions**
First Action: Strengthening Of An Early Warning System
Second Action: Strengthening Capacities Of Agricultural Producers to Cope With Climate Change
Third Activity: Reduction Of Climate Change Impacts In Coastal Zones
Fourth Action: Management Of Water Resources Under Climate Change

**7. Scotland -** Climate Change Adaptation Framework
(http://www.scotland.gov.uk/Resource/Doc/295110/0091310.pdf)

- **Assessment -** How the Climate is Changing in Scotland

- **Building Resilience** to the Impacts of Climate Change

  Pillar I: Provide the evidence base
  Pillar II: Equip decision makers with skills & tools

Pillar III: Integrate adaptation into regulation & public policy

- **Sector Roles and Responsibilities**

- **Measuring and Reporting Progress**

## 8. Sudan NAPA

(Taken from written document as not available on website)

### National Adaptation Programme of Action for Climate Change

### Background

Climate change poses serious challenges to Sudan's overriding development priorities in agriculture, forestry, water resource management, and health.

### Objectives

The primary goal of this programme is to broadly communicate to the international community the priority activities that address Sudan's urgent needs for adapting to the adverse impacts of climate change through consultations with numerous actors, including local communities, the public sector, the private sector, NGOs and civil society groups. The project's specific objectives are:

- Ensure adequate stakeholder representation in the development of the NAPA document.
- Identify a comprehensive range of climate change adaptation strategies.
- Establish country-driven criteria with which to evaluate and prioritize climate change adaptation measures.
- Make consensus-based recommendations for adaptation to climate change activities.
- As needed, recommend capacity building, policy, programme, and institutional integration, as part of climate change adaptation priority activities.

### Snapshots of the project's major achievements

- In preparing the National Adaptation Programme of Action for climate change undertook intensive scoping, comprehensive consultative and prioritization processes, involving a wide range of partners based in Gedarif, North Kordofan, South Darfur, River Nile and Central Equatoria States in Sudan, representing different ecological settings in Sudan. Three sectors were targeted - agriculture, water resources and public health.
- The National Adapation Programme of Action (NAPA) for Climate Change document prepared, which contains Sudan's highest priorities for adaptation to the impacts of climate change.

- A significant contribution made in building the technical capacities of national experts and raising awareness at the state and local levels.
- Identified the key vulnerable groups in need of climate change adaptation activities
- Identified key adaptation activities in agriculture, water resources and public health.
- Identified the locally driven criteria for selecting priority projects.
- Finalized a list of high priority activities targeting the five ecological zones and the agriculture, health and water sectors.

## 9. Germany

**The German Strategy for Adaptation to Climate Change** was adopted by the Federal Cabinet on 17 December 2008. (Adapted)

(http://www.bmu.de/files/english/pdf/application/pdf/das_zusammenfassung_en.pdf)

This strategy creates a framework for national adaptation to the impacts of climate change and establishes a transparent and structured medium-term process which, in conjunction with the relevant actors, will progressively ascertain action needs, define appropriate objectives, identify and resolve conflicts of objectives, and develop and implement potential adaptation measures. With this strategy, the Federal Government is for the first time adopting an overall position on adaptation to the consequences of climate change and integrating the work already in progress in various ministries in a common strategic framework. This also creates transparency for other actors. The Adaptation Strategy pursues an integrated approach to assessing risks and action needs, supports sustainable development, and reflects Germany's international responsibility.



**Framework and objectives of Germany's Adaptation Strategy**

The long-term objective of the Adaptation Strategy is to reduce the vulnerability and maintain and improve the adaptability of natural, social and economic systems. This requires the following action objectives:

- Identify and communicate dangers and risks, i.e. ensure transparency of probabilities, damage potential and uncertainties
- Create awareness and raise the sensitivity of actors
- Provide a basis for decision making that enables the various actors to take precautions and to gradually incorporate the impacts of climate change in their private, business and public planning and activities
- Indicate action options, coordinate and define responsibilities, draw up and implement measures.

- The Adaptation Strategy is based on the principles of openness and cooperation; knowledge, flexibility and precaution; subsidiarity and proportionality; integrated approach; international responsibility; sustainability.

The first Cabinet Report on the Adaptation Strategy lays the foundations and creates a framework for national adaptation to the impacts of climate change. The strategy nevertheless requires further specification on the basis of a broad discussion with the federal states and societal groups.

The Federal Government is therefore aiming to present an **'Adaptation Action Plan'** drawn up jointly with the federal states by the end of March 2011. This is to include the following aspects:

- Principles and criteria for prioritising action needs;
- Prioritisation of federal measures;
- An overview of concrete measures by other actors ;
- Information about financing, especially through integration of adaptation in existing assistance programmes;
- Suggested concepts for progress review ; Further development of the strategy, and next steps.

The dialogue and participation processes set in motion during the preparation of the Adaptation Strategy, which have so far focused mainly on the federal and regional authorities and academic circles, are to be put on a broader footing by increasingly integrating industry, local authorities and other actors from the various fields of activities. To this end the Federal Government will play an active role in its various fields of competence (specialist discussions, specialist conferences, discussion of adaptation issues in consultative bodies and independent expert committees etc.).

The following measures are planned to support the actors and the process of implementing and improving the Adaptation Strategy: Further provision and expansion of the offerings and services of the Competence Centre on Global Warming and Adaptation (KomPass) at the Federal Environment Agency (UBA); KomPass will collate and evaluate information and results from the various subject areas and ministries and communicate them via an Internet portal; The establishment of a **Climate Service Centre** at the Helmholz-Gesellschaft Deutscher Forschungszentren (seed funding by the Federal Ministry of Education and Research, planned for early 2009), at the interface between climate system research and users of the data obtained from scenario and model calculations. The aim is user-oriented acceleration of knowledge dissemination and research processes in the field of climate modeling and scenario development.

## **Elements of NAPA´s** - National adaptation programmes of action

**NAPA´s** National adaptation programmes of action will serve as simplified and direct channels of communication for information relating to the urgent and immediate adaptation needs of the LDCs.
http://unfccc.int/resource/docs/2010/sbsta/eng/05.pdf

**National adaptation programmes of action should:** (a) Be easy to understand; (b) Be action-oriented and country-driven; (c) Set clear priorities for urgent and immediate adaptation activities as identified by the countries.

**The preparation of NAPAs will be guided by the following:** (a) A participatory process involving stakeholders, particularly local communities; (b) A multidisciplinary approach; (c) A complementary approach; (d) Sustainable development; (e) Gender equality; (f) A country-driven approach; (g) Sound environmental management; (h) Cost-effectiveness; (i) Simplicity; (j) Flexibility of procedures based on individual country circumstances.

**Process**
The preparation of the NAPA may proceed as follows:

(a) The setting up of a national NAPA team: the national climate change focal point will set up a NAPA team composed of a lead agency and representatives of stakeholders including government agencies and civil society. This group would be constituted using an open and flexible process that will be inclusive and transparent. The NAPA team will be responsible for preparing the NAPA and coordinating the implementation of NAPA activities;
(b) The NAPA team will assemble a multidisciplinary team:
(i) To synthesize available information on adverse effects of climate change and coping strategies, which would be collated and reviewed, including the national strategies for sustainable development, the Programme of Action for the Least Developed Countries, the United Nations development assistance frameworks, and poverty reduction strategy papers, if available in the countries;
(ii)To conduct a participatory assessment of vulnerability to current climate variability and extreme weather events, and to assess where climate change is causing increases in associated risks;
(iii) To identify key climate-change adaptation measures, based, to the extent possible, on vulnerability and adaptation assessment; such measures would also be responsive to needs identified under other relevant processes, such as the preparation of national action plans under the United Nations Convention to Combat Desertification and national biodiversity strategies and action plans under the Convention on Biological Diversity;
(iv) To identify and prioritize country-driven criteria for selecting priority activities to address needs arising from the adverse effects of climate change, drawing on the criteria referred to in section F.4 below.
(c) Development of proposals for priority activities to address needs arising from climate change
(d) The development of the NAPA document
(e) Public review and revision: the NAPA document will undergo public review and be revised accordingly;
(f) The final review process: the NAPA document, including the profiles, will be reviewed by a team of government and civil society representatives, including the private sector, who may take into consideration any advice solicited from the Least Developed Countries Expert Group;
(g) National government endorsement of the NAPA: after the NAPA has been prepared, it will be submitted to the national government for endorsement.
(h) Public dissemination: the endorsed NAPA document will be made available to the public and to the UNFCCC secretariat.

## B. Sub-national and Local Case Studies

Following are a number of interesting case studies at different sub-national levels.

### Ontario, Canada, uses Risk-based Adaptation to Climate Change

A Guide for Ontario Municipalities
Risk management, adaptation and vulnerability reduction
http://adaptation.nrcan.gc.ca/projdb/pdf/176a_e.pdf

**Climate Change Adaptation Decision-making in Ontario Municipalities**

Climate trends and projections for Ontario
The municipal planning context

**Overview of the Risk Management Approach**

The risk management process
Guiding principles

**Steps in the Risk Management Process**

STEP 1: Getting Started
STEP 2: Preliminary Analysis
STEP 3: Risk Estimation
STEP 4: Risk Evaluation
STEP 5: Risk Controls and Adaptation Decisions
STEP 6: Implementation and Monitoring
**Annex 1: Summary of Climate Change Impacts in Ontario and Canada**
**Annex 2: Introducing Adaptation to Climate Change to Local Authorities**
**Annex 3: Risk communications and Perceptions**

## The leading role of local government

Scotland's communities will often be in the front line in responding to the impacts of climate change and local authorities are ideally placed to lead the community response to climate change. With knowledge of local values, industries and landscapes, local government allows adaptation actions to be tailored effectively to localised impacts of climate change. Local authorities can also work in partnership with their broader community of local estate managers, employers, community leaders and planning partners in preparing for a changing climate.

The Climate Change (Scotland) Act places climate change duties on public bodies in Scotland. In exercising their functions, those public bodies must act:

- in the way best calculated to contribute to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programme; and
- in a way that it considers most sustainable.

The Act also contains powers to enable the Scottish Ministers to create further duties and to introduce reporting and monitoring requirements. There are no current plans to use these powers but they would be available if the Scottish Ministers determined that the public sector response was inadequate to manage the risks posed by climate change. The Scottish Government will continue to work with public sector service providers to help them understand their risk and their role in building a more resilient Scotland. The Scottish Environment Protection Agency, Forestry Commission Scotland, Historic Scotland and Scottish Natural Heritage have developed climate change actions plans and have worked together to identify synergies for taking action forward.

In 2007, all 32 Scottish local authorities showed their commitment to acting on climate change by signing Scotland's Climate Change Declaration. This represented a voluntary commitment to take action to reduce emissions and adapt to the unavoidable impacts of climate change. The Scottish Government is working with the Convention of Scottish Local Authorities (COSLA) and the Society of Local Authority Chief Executives (SOLACE) to embed the Declaration work within the Single Outcome Agreement process. Given the important role of local authorities in supporting communities to adapt to the impacts of climate change, the Scottish Government is committed to developing the adaptive capacity of local government.

The Scottish Government is encouraging local authorities, in partnership with Community Planning Partners, to assess risks and opportunities from the impacts of climate change to service provision and assets. Completion of a Local Climate Impact Profile provides a useful reference for such a risk assessment, and assistance in this work is being provided to local authorities through SCCIP. Guidance on what this duty will mean in practice will be developed in cooperation with COSLA and local authorities and will be supported by an ongoing programme of guidance and training through SCCIP. Where appropriate, the Government will encourage the development of consistent approaches to assessments and reporting, however sometimes a more specific approach will be required to take account of local geography. **Scotland's Climate Change Adaptation Framework 2009 (**http://www.scotland.gov.uk/Publications/2009/12/08130513/1)

## Local Government Stepping Out

***Yukon Government voluntarily chose not to participate because of the community nature of the planning process.***

**The Dawson Adaptation Plan** is based on a collaborative process that draws on the experience and knowledge of residents and integrates it with scientific expertise. The plan is primarily intended as a resource for community use and to support other planning and decision-making processes in the study area, the Tr'ondëk Hwëch'in Traditional Territory. The Dawson Adaptation project team itself is made up by members of the International Polar Year Dawson Community Adaptation and Vulnerability in Arctic Regions (CAVIAR)1 team, and the Northern Climate ExChange (NCE). The role of the Local Advisory Committee is to ensure community priorities were reflected in the planning process and to provide guidance on the planning process itself.

**The Dawson Adaptation Plan was developed in two parts.**

- During the **first part** of the planning process the project team worked with residents to determine **how they may be affected by climate change**. Community knowledge of how climate change may affect residents was incorporated into the planning process through a number of open houses, individual interviews completed through the Dawson CAVIAR project, and through community input sessions that brought local experts together to discuss the implications of climate change in the community. The resulting community vulnerability scenario was then enhanced by a second workshop in the community and with a Technical Advisory Committee. The Technical Advisory Committee was composed of government and academic experts from outside the community and sought to reinforce local findings through the integration of scientific/expert knowledge.

- In the **second component** of the planning process, the project team worked with the Local Advisory Committee to distill the community vulnerability scenario into a list of consequences that climate change may have for residents. Each consequence was evaluated based on a risk assessment framework. The risk assessment **evaluates the consequences of climate change based on three predetermined characteristics of resilience.** Resilience, in this context, is defined as the ability of the community to maintain its functions in the face of internal and external change and for the purposes of this plan was characterized by: the ability of the community to respond to each consequence, the severity of the consequence and the likelihood of the event. Priorities were determined based on the relative ranking of each consequence.

***Dawson City and its hinterlands will be a self sustaining society, a community that lives within the limits of the local ecosystem and serves as a haven for its residents in an uncertain world.***
*It will achieve this by:*

- ***Taking steps to increase its resilience,***
- ***Actively promoting self sufficiency***
- ***Increasing knowledge of the environment around us.***
- ***Developing ways to adapt to sudden changes in society and the climate***

Source: Dawson Climate Change Adaptation Project, Community Adaptation Project, 2009
http://www.taiga.net/nce/adaptation/Dawson_Plan_Final.pdf

# C. Some highlights from key stakeholder groups

## The Interrelationship of Indigenous Peoples and Adaptation to Climate Change

*The answers to the following questions were taken from the report, Galloway McLean, Kirsty (2010) Advance Guard: Climate Change Impacts, Adaptation, Mitigation and Indigenous Peoples – A Compendium of Case Studies. United Nations University – Traditional Knowledge Initiative, Darwin, Australia.*

**Why are Indigenous Peoples particularly vulnerable to climate change?**

Indigenous people are more vulnerable because they usually live in ecosystems particularly prone to the effects of climate change (polar regions, small islands, high altitudes, humid tropics, coastal regions, deserts), because they are heavily dependent on lands and resources for basic needs and livelihoods (food, medicine, shelter, fuel, etc.), and because they are amongst the poorest people globally.

**What type of knowledge can Indigenous Peoples lend to adaptation efforts?**

The local observations of direct effects of climate change by Indigenous Peoples corroborate scientific predictions, and include temperature and precipitation changes; coastal erosion; permafrost degradation; changes in wildlife, pest and vector-borne disease distribution; sea-level rise; increasing soil erosion, avalanches and landslides; more frequent extreme weather events, such as intense storms; changing weather patterns, including increasing aridity and drought, fire and flood patterns; and increased melting of sea-ice and ice capped mountains.

**Why are Indigenous Peoples positioned to adapt to climate change?**

Through their culture of intergenerational transmission of knowledge over thousands of years, Indigenous Peoples are unique repositories of learning and knowledge on successfully coping with local-level climate change and effectively responding to major environmental changes such as natural disasters. Historically and currently, Indigenous Peoples play a fundamental role in the conservation of biological diversity, protection of forests and other natural resources, and their traditional knowledge on climate change can also substantively enrich scientific knowledge and adaptation activities of others.

## The Media as Stake-holder – Case Study

*Information and media-rich USA reports Climate Change as Media Fail of the Millennium "The mass media coverage of climate change is not simply a random amalgam of newspaper articles and television segments; rather, it is a social relationship between scientists, policy actors and the public that is mediated by such news packages."*[24]

[24] BoykoV, M.T., BoykoV, J.M., Climate change and journalistic norms: A case-study of US mass-media coverage, Geoforum (2007), doi:10.1016/j.geoforum.2007.01.008. p. 1

A 2010 study, *Americans' Knowledge of Climate Change*, conducted by the Yale Project on Climate Change Communications and the George Mason Center for Climate Change and Communication, found that "63 percent of Americans believe that global warming is happening, but many do not understand why. In this assessment, only 8 percent of Americans have knowledge equivalent to an A or B, 40 percent would receive a C or D, and 52 percent would get an F. The study also found important gaps in knowledge and common misconceptions about climate change and the earth system. These misconceptions lead some people to doubt that global warming is happening or that human activities are a major contributor, to misunderstand the causes and therefore the solutions, and to be unaware of the risks."[25]

There is a consensus among the top scientists in the world that human activities have contributed significantly to global climate change.[26] Yet, despite this, many Americans remain unconvinced of the reality of climate change. One of the main reasons why Americans are ill informed on the basics of climate change science, rests in the failure of the mass media coverage of climate change. This section explores some of the reasons why the mass media has failed to cover what may just be the hottest topic of the 21st century.

**Journalistic Norms**

According to the publication, *Climate change and journalistic norms: A case-study of US mass-media coverage* "strict adherence to journalistic norms contributes to the impediments of the coverage of anthropomorphic climate change science".[27] The publication asserts that the following five journalistic norms are responsible for shaping the selection of the composition of the news and for ultimately impeding the coverage of climate change.

- **Personalization** – "The tendency to downplay the big social, economic, or political picture in favor of the human trials tragedies, and triumphs that sit at the surface of events"[28]

- **Dramatization** - whereby "news dramas emphasize crisis over continuity, the present over the past or future, conflicts" and "downplay complex policy information, the workings of government institutions, and the bases of power behind the central characters"[29]

- **Novelty** – "In print and on the screen, this translates into a preference for coverage of crises, rather than chronic social problems that have already been discussed on the



[25] Leiserowitz, A., Smith, N. & Marlon, J.R. (2010) *Americans' Knowledge of Climate Change.* Yale University. New Haven, CT: Yale Project on Climate Change Communication. Available at <http://environment.yale.edu/climate/files/ClimateChangeKnowledge2010.pdf >
[26] Intergovernmental Panel on Climate Change (IPCC) (2001) *Climate Change 2001:The Scientific Basis*. Cambridge: Cambridge University Press.
[27] BoykoV, M.T., BoykoV, J.M., Climate change and journalistic norms: A case-study of US mass-media coverage, Geoforum (2007), doi:10.1016/j.geoforum.2007.01.008. p. 1
[28] Bennett, W.L., 2002. News: the Politics of Illusion, Wfth ed. Longman, New York, p. 45
[29] Ibid., p. 46.

mass-media terrain"[30]

- **Authority-order bias** - is "where journalists tend to primarily, and sometimes solely, consult authority figures – government officials, business leaders, and others – who reassure the public that order, safety, and security will soon be restored"[31]

- **Balance** – "With coverage of climate change, the proclivity to personalize news dovetails in an important way with the notion of balance in that it leads to the scenario of the dueling scientists. These opposing scientists, who receive 'roughly equal attention,' create the appearance of a hot scientific debate between the upper echelons of the science community, which elides the fact that on one 'side' there are thousands of the world's most reputable climate-change scientists who vigorously engage the process of peer review, while on the other side there are only a few dozen naysayers who generally have not had their skeptical assertions published in peer-reviewed publications. The result of 'balanced' reporting, then, is an aura of scientific uncertainty. This scientific uncertainty is, in turn, a powerful political tool."[32]

"Given the potentially enormous political, social and economic implications of climate change and the strategies to slow or mitigate its potential effects, it comes as no surprise that many individuals and organizations have tried to influence media coverage of the topic."[33] In the 1990s, the concept of the "non-problematicity" of global warming that was seen in the mainstream media was fueled by an alliance between conservative think tanks, fossil fuel interests and "skeptic scientists".[34] More recently, it is now clear and public knowledge, presented by many sources of media, including a 2010 Greenpeace report[35] and a 2010 New Yorker article[36], that some points within the global oil industry have invested at minimum, tens of millions of dollars, to support groups that are working in the area of climate change skepticism, in some scientific, political and information and media arenas.

## How can private sector finance be used to support adaptation?

To date, the majority of financing mechanisms have been focusing on their potential to support *mitigation*, and the few existing climate bond products do indeed predominantly favour activities that reduce greenhouse gas emissions. This raises a question of the extent to what the market may be able to finance *adaptation*.



[30] BoykoV, M.T., BoykoV, J.M., Climate change and journalistic norms: A case-study of US mass-media coverage, Geoforum (2007), doi:10.1016/j.geoforum.2007.01.008. p. 3
[31] Bennett, W.L., 2002. News: the Politics of Illusion, Wfth ed. Longman, New York pp. 48-49.
[32] BoykoV, M.T., BoykoV, J.M., Climate change and journalistic norms: A case-study of US mass-media coverage, Geoforum (2007), doi:10.1016/j.geoforum.2007.01.008. p. 4.
[33] Carvalho, A. (2007) "Ideological cultures and media discourses on scientific knowledge: re-reading news on climate change" *Public Understanding of Science* 16(2): 223-243
[34] McCright, A. and Dunlap, R. (2003) "Defeating Kyoto: The Conservative Movement's Impact on U.S. Climate Change Policy,"*Social Problems*50(3):348–73.
[35] Greenpeace (2010) *Funding the Climate Denial Machine* .www.greenpeace.org
[36] Mayer, Jane. "Covert Operations" *The New Yorker* Aug. 2010
Available at < http://www.newyorker.com/reporting/2010/08/30/100830fa_fact_mayer >

Attracting the private sector to adaptation has been more difficult than has mitigation. Many adaptation activities such as disaster prevention infrastructure, flood and water management and health programmes will therefore not attract equity investors. They do yield economic benefits, but these accrue to the wider community and cannot be captured within the project itself.

Some projects in the agriculture or water sectors might be suitable targets for equity, although supporting adaptation through equity may otherwise be difficult. Some possible avenues for financing are through liable lending, such as for loans to public authorities, which can be attractive investments for the private sector and which will vary greatly from country to country.

There is also the opportunity of venture capital investments in new technology, and other forms of soft and concessional lending to both civil and public sectors. In the table below, recommendations for capacity development on private sector financing adaptation are highlighted.

| |
|---|
| **Raising awareness among the investor community**<br>Investor interest in directing finance towards reducing climate risks could be stimulated by raising awareness among large institutional investors of the adaptation needs of developing countries and the introduction of the right investment products, for instance "climate adaptation bonds". |
| **Raising awareness among finance institutions**<br>The UNFCCC, along with actors such as the UNEP Finance Initiative, can play an important role in raising awareness within the private finance sector of what adaptation to climate change means, both on the ground in developing countries and in commercial terms. It would be useful to map out some tangible case studies of how commercial finance can be used for adaptation measures, articulating the characteristics that will be of most interest to financial institutions. This would help stimulate the development of investment products tailored towards adaptation, and capitalise on the willingness of major investors to support adaptation. |
| **Bridging the gap between finance and projects**<br>There is a need for making potential adaptation projects clearly visible to funders, including those adaptation needs already articulated by developing countries (through NAPAs, for instance). The lack of a "project pipeline" with which private finance can engage will otherwise act as a barrier. This can be facilitated by multilateral and bilateral finance institutions, who have experience in financing |

projects in developing countries, as well as by developing countries themselves. The private finance sector may need to test new financial models in order to find ways of channeling finance to typically smaller recipients in poor regions.

**Using public finance to help spread private finance more evenly**

Using public finance for country risk guarantee schemes could help re-direct private finance towards countries that currently do not receive significant private flows.

Source: Adaptation Finance under a Copenhagen Agreed Outcome, Åsa Persson, Richard J.T. Klein, Clarisse Kehler Siebert, Aaron Atteridge, Benito Müller, Juan Hoffmaister, MichaelLazarus and Takeshi Takama, published by the Stockholm Environment Institute (2009). *http://sei-international.org/mediamanager/documents/Publications/Climate-mitigation-adaptation/policybrief-privatesectorfinance-adaptation.pdf*

# D. Methodology Case Studies

## 12.1 An interesting mapping of adaptation decision Framework

Applying Climate Information For Adaptation Decision-Making National Communications Support Programme, UNDP GEF UNEP

| Adaptation decision Framework | Objective | Target end-users | Key components/steps |
|---|---|---|---|
| **IPCC 'seven-step approach' (Carter et al., 1996)** | Guiding the assessment of climate change impacts and adaptation | • Researchers | 1. Define problem<br>2. Select method<br>3. Test method/sensitivity<br>4. Select scenarios<br>5. Assess biophysical and socio-economic impacts<br>6. Assess adjustments<br>7. Evaluate adaptation strategies |
| **UKCIP climate risk decision framework (Willows and Connell, 2003)** | Facilitating the climate risk assessment and management through informed decision-making | National and local governments<br>• Resource managers<br>• Businesses<br>• Professional associations | 1. Identify problems and objectives<br>2. Establish decision-making criteria<br>3. Assess risk<br>4. Identify options<br>5. Appraise options<br>6. Make decision<br>7. Implement decision<br>8. Monitor |

| | | | |
|---|---|---|---|
| **UNDP Adaptation Policy Framework (UNDP, 2005)** | Facilitating the climate risk assessment and management | Researchers<br>• Decision makers at different levels<br>• Donor agencies | 1. Scope and design an adaptation project<br>2. Assess current vulnerability<br>3. Assess future vulnerability<br>4. Formulate adaptation strategy<br>5. Continue the adaptation process |
| **Australian Greenhouse Office climate risk guidance (Australian Green house Office, 2006)** | Facilitating the climate risk assessment and management | National and local governmental bodies<br>• Businesses | 1. Establish the context<br>2. Identify the risks<br>3. Analyse the risks<br>4. Evaluate the risks<br>5. Treat the risks |
| **USAID guidance on integrating adaptation into development projects ( 2007)** | Establishing the context for adaptation and guiding the climate risk screening and climate proof project design | Development agencies | 1. Screen for vulnerability<br>2. Identify adaptations<br>3. Conduct analysis<br>4. Select course of action<br>5. Implement plan<br>6. Evaluate |

**The Community-based Risk Screening Tool – Adaptation and Livelihoods (CRiSTAL)** is designed to help project planners and managers integrate climate change adaptation and risk reduction into community-level projects.

**CRiSTAL: C**ommunity-based **Ri**sk **S**creening **T**ool – **A**daptation and **L**ivelihoods

The impacts of a changing climate—less predictable rainfall, more frequent droughts, rising sea levels, new pest and disease outbreaks, disappearing sea ice—are increasingly being felt by people living around the world. These changes have real implications for farmers, fishers, foresters and others who rely upon natural resources for their living. These groups suffer disproportionately from climate variability and change, particularly in developing countries.

Community-level development projects can play a critical role in helping people adapt to the impacts of climate change through activities that, *inter alia*, restore ecosystems, strengthen local capacities for risk management and diversify livelihoods. But it can be difficult to exploit this potential and minimize maladaptation without some concrete understanding of how projects influence climate-related vulnerability and adaptive capacity. CRiSTAL helps project planners and managers do this. The CRiSTAL tool and the User's Manual are now available in English, French and Spanish.

Source: http://www.iisd.org/cristaltool/

# 2. Related Websites

- Adaptation Exchange – Eldis: http://community.eldis.org/.59b70e3d/
- Adaptation Learning Mechanism - http://www.adaptationlearning.net
- CSIRO Climate Adaptation Flagship: http://www.csiro.au/org/ClimateAdaptationFlagship.html
- Danida (Danish International Development Agency), Climate Change Screening Note, www.danidanetworks.um.dk.
- Eldis page on adaptation: http://www.eldis.org/go/topics/dossiers/climate-change-adaptation
- European Commission, Environmental Mainstreaming in EC Development Cooperation, www.environment-integration.org.
- European Union, EU Energy Initiative, http://ec.europa.eu/development/body/theme/energy/initiative/index_en.htm.
- European Union, EU Water Initiative, www.euwi.net.
- GCOS (Global Climate Observing System), www.wmo.ch/web/gcos/whatisgcos.htm.
- GTZ (Gesellschaft für Technische Zusammenarbeit), Climate Protection Programme for Developing Countries, www.gtz.de/en/themen/umwelt-infrastruktur/umweltpolitik/3958.htm
- IDS (Institute of Development Studies), www.ids.ac.uk/ids/pvty/ClimateChange/pdfs/orchidfinal.pdf.
- IPCC website: www.ipcc.ch
- IUCN (The World Conservation Union), www.iucn.org/climate.
- Knowledge Network on Vulnerability and Adaptation to Climate Change, http://ncsp.va-network.org.
- NCAP (The Netherlands Climate Assistance Programme), www.nlcap.net.
- OECD work on adaptation: http://www.oecd.org/env/cc/adaptation
- Red Cross/Red Crescent Climate Centre, www.climatecentre.org.
- Resilience Alliance: http://www.resalliance.org/
- SEI (Stockholm Environment Institute), www.sei.se.
- Sida (Swedish International Development Cooperation Agency), Sida Helpdesk for Environmental Economics, www.handels.gu.se/seahelpdesk/ .
- START (Global Change System for Analysis, Research and Training), www.start.org.
- Stockholm Environment Institute: http://www.sei.se/
- Tyndall Centre for Climate Change Research: http://www.tyndall.ac.uk/
- UEA Norwich, SEI and IIED, Tiempo Climate Cyberlibrary, www.cru.uea.ac.uk/tiempo/

- UNDP (United Nations Development Program), Multi-Donor Support Program for Aid Coordination, www.un.org.kh/undp/resources/publications/projectSummary/aid_coordination.pdf.
- UNDP Community Based Adaptation http://www.undp-adaptation.org/projects/websites/index.php?option=com_content&task=view&id=203
- UNFCC on adaptation http://unfccc.int/adaptation/items/4159.php
- UNFCCC website: http://unfccc.int/
- UK Climate Impacts Programme: http://www.ukcip.org.uk/
- USAID (United States Agency for International Development), www.usaid.gov.
- VARG (Vulnerability and Adaptation Resource Group), www.climatevarg.org.
- WeADAPT: http://www.weadapt.org/
- World Bank webpage on adaptation: http://beta.worldbank.org/overview/climate-change-adaptation

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