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Second International Workshop on
MAINSTREAMING ADAPTATION TO CLIMATE CHANGE—MANAGING ADAPTATION PROCESSES

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Workshop Report

The Second International Workshop on
Mainstreaming Adaptation to Climate Change –
Managing Adaptation Processes
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Glossary of Acronyms

ADB:	Asian Development Bank
AMC:	Advance Market Commitments
APDAI:	Andhra Pradesh Drought Adaptation Initiative
CISIRO:	Commonwealth Scientific and Industrial Research Organization
DFID:	Department for International Development
GCM:	Global Climate Model
GEF:	Global Environment Facility
GTZ:	Deutsche Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation)
GIS:	Geographic Information Systems
ICIMOD:	International Centre for Integrated Mountain Development
ICT:	Information Communication Technologies
IDS:	Institute of Development Studies, University of Sussex
IFRC:	International Federation of the Red Cross and Red Crescent Societies
IIED:	International Institute for Environment and Development
IRI:	International Research Institute
ISSET:	Institute for Social and Environmental Transition
JICA:	Japan International Cooperation Agency
LAPA:	Local Adaptation Programme of Action
NAPA:	National Adaptation Programme of Action
OECD:	Organisation for Economic Co-Operation and Development
SERVIR:	Regional Visualisation and Monitoring System
SLD:	Shared Learning Dialogues
TERI:	The Energy and Resource Institute
UNEP:	United National Environment Programme
USAID:	United States Agency for International Development
WB:	World Bank
WRI:	World Resources Institute

Executive Summary

The Second International Workshop on Mainstreaming Adaptation to Climate Change – Managing Adaptation Processes was held in New Delhi, India from 10–12 November 2010. This was a follow-up to the International Workshop on Mainstreaming Adaptation to Climate Change held in Berlin, Germany in 2009. While the previous workshop was centred around adaptation decision-making ‘tools’, this workshop focused on ‘processes’ of mainstreaming. More specifically, this workshop examined five issues over two-and-a-half days: a) how adaptation can be framed and conceptualised; b) integrating adaptation into planning; c) the role of monitoring and evaluation in adaptation programmes and projects; d) finance for adaptation; and e) climate data and information. Session formats varied – some took place in plenary and some required the audience to divide into working groups. The sessions on adaptation planning and climate information followed the ‘marketplace’ format where six presentations took place simultaneously and the audience moved from one presenter to the next.

Building a mainstreaming adaptation narrative together: Framing the issues

The Institute of Development Studies (IDS) presented an approach to framing adaptation activities. Climate change adaptation is a vast field – one that subsumes within it a variety of actions or responses to climate change. To stimulate discussion, IDS proposed a framework which sees most adaptation interventions as a combination of the following four overlapping groups of responses –

- Predict and provide: entails calculating the probability of future climate impacts, viewing vulnerability as arising from factors external to the development process and preparing for the future using climate scenarios and modelling (e.g., the ‘climate proofing’¹ of roads by the Asian Development Bank [ADB]).
- Risk sharing and transfer: is based on the management and transfer of risks of future climate-related impacts, usually through financial and social mechanisms (e.g., a crop-insurance scheme in Ghana, designed with support from the German Technical Cooperation² [GTZ]).
- Social vulnerability: here, the focus is on the drivers of social vulnerability such as assets, capabilities, livelihoods opportunities, poverty inequalities and marginalization and attempts to tackle uncertainty by focussing on climate variability (e.g., the vulnerability and capacity assessment in northeast India by GTZ).
- Addressing governance: engages with the political dimensions of vulnerability to deal with issues such as governance, finance and accountability (e.g., the Productive Safety Net Programme in Ethiopia, supported by the UK Department for International Development [DFID]).

There was also a discussion on ‘resilience’ in the context of adaptation as a concept that cuts across the four conceptualisations.

Sharing experiences from mainstreaming adaptation into planning processes

Good Practices

These include the following:

¹ Climate proofing is placed in quotes as this term refers to actions taken to increase the resilience of roads. ADB and government partners do not imply that actions make a project 100% climate proof.

² Deutsche Gesellschaft für Technische Zusammenarbeit

- Finding the right point of entry for adaptation issues to be integrated in plans is an important part of getting mainstreaming right. Adaptation issues could be integrated in the following ways:
 - At the national level (e.g., Five Year Plans in India).
 - Sectorally (agriculture, water, health, etc.; e.g., Master Plans in Vietnam).
 - In ongoing development plans at the local level (e.g., the plans of Village Development Committees in Nepal).
- Identifying risks to sectors and inputs that support key economic drivers (such as tourism, fisheries, etc.) could also be entry points for adaptation.
- There is also a need to look for innovative entry points by, for instance, understanding links between issues such as migration and climate change as well as synergies and incentives between mitigation and adaptation.
- Spending time to understand the importance of negotiating inter-personal politics between the potentially large numbers of actors involved in the planning process.
- Actively seeking the participation of the private and informal sector in adaptation planning.
- Adaptation should be framed as a response to climate change stress on development rather than an isolated environmental concern. This is especially important when advocating for mainstreaming in government plans.

Gaps and Challenges

Gaps and challenges exist around the following areas:

- Building absorptive capacity at the local level for gainfully utilising funding.
- Improving cooperation between ministries/nodal agencies charged with engaging with adaptation.
- Building adaptive management or revision loops into planning processes so that maladaptation can be spotted and necessary changes made.

The Way Forward

Participants suggested the following to improve the likelihood of success of adaptation efforts:

- Funding should be contingent on joint planning by all involved ministries in order to improve cooperation.
- Adaptation at different levels should be mutually supportive (e.g., planned adaptation initiatives at the national level should not counteract successful autonomous adaptation at the local level).
- Climate data providers (e.g., hydro-meteorological services) should collaborate to develop and make available climate information and tools that are useable or 'digestible' so adaptation planners and practitioners can be more effective in the translation of climate information into knowledge and robust actions.
- Communities should be engaged in adaptation planning because ownership needs to rest with those whom the plans aim to assist. This may also help compensate for a lack of capacity of government personnel at the local level.
- Indigenous knowledge is vital and, therefore, community experiences of climate change should be incorporated into adaptation plans.

Successful adaptation: How do we evaluate and learn?

Good Practices

These include the following:

- It is important for monitoring and evaluation (M&E) of adaptation interventions to be firmly grounded in a conceptual framework and theory of change.
- M&E should be an important element of any adaptation intervention from its inception, and should not be considered an 'add-on'.
- There is a need to realise the potential of M&E systems as mechanisms of effective learning and to acknowledge that they can do this only if they are iterative and flexible in nature.
- While there is a clear need for the use of numerical targets and quantitative analysis in M&E, this needs to be balanced with the use of qualitative methods.
- Though an international community of practice around M&E should be developed, it is also critical that the poor be involved in such processes and that there is adequate capacity building of citizens at the community level to conduct such activities.
- Multimedia approaches should be used where possible to succinctly capture lessons and good practices and disseminate them to target audiences.

Gaps and challenges

Discussions identified the following gaps and challenges:

- Methods of developing meaningful indicators to measure adaptation success, given the complex, cross-cutting nature of climate change, in which it is difficult to attribute particular outcomes to particular activities.
- Expanding M&E to be more than just 'impact assessments', as these may not be helpful for long-term, complex adaptation interventions. The potential of M&E to become a powerful learning mechanism should be realised.
- Ensuring adequate resources to conduct robust M&E that supports learning.
- Developing M&E tools for varied audiences with different purposes.
- Determining the efficacy of different adaptation interventions for a complex, cross-cutting issue such as climate change, in which it is difficult to attribute particular outcomes to particular activities.
- Integrating robust M&E practices in national/sub-national plans of various countries, as opposed to the current emphasis on M&E only in donor-funded programmes, as these often have a limited life span.

The Way Forward

Participants suggested that more innovative M&E approaches are needed that combine scientific data, community-level observation and third-party verification to deliver a more accurate description of adaptation and allow planners/practitioners to effectively learn.

Adaptation financing mechanisms and issues

Good Practices

The following good practices and promising directions were suggested in the session on financing:

- Pooling donor resources for the creation of trust funds (such as the multi-donor trust fund currently in process in Bangladesh).
- Conducting pilots and research programmes for expanding the role of private sector funding in adaptation, either through insurance, micro-credit schemes or advance market commitments (AMCs).

- For micro-credit schemes to flourish, strong, decentralised institutions are needed at the local level.
- It is important to understand that AMCs are potentially valuable only for the development of specific adaptation technologies.
- Closely examining how national/domestic resources can be leveraged for adaptation, since in some countries these are substantial and outpace donor funding.

Gaps and Challenges

Gaps and challenges exist around the following areas:

- Mechanisms for getting resources allocated effectively from the national level to the local level.
- Ensuring that organisations at the community level have the capacity to use funds well.
- Developing robust methodologies of determining the additional sum required to achieve effective adaptation over and above 'business-as-usual' development initiatives.
- Taking a closer look at donor financing mechanisms in order to ascertain how to engage with fiduciary risk so that it does not become an impediment to accessing funds at the local level.
 - For example, these mechanisms should acknowledge that adaptation interventions are complex, their impacts are sometimes not realised early on and progress is difficult to measure accurately.
- Studying mechanisms of ensuring that local elites do not capture funds made available for adaptation.
- Engaging in a more detailed study of the available and potential sources of finance for adaptation.
- Ensuring subsidies given to the private sector for product development (e.g., adaptation technologies funded through AMCs) are temporary and do not distort market structures.
- Developing flexible and iterative financial instruments that are able to deal with the complexities of adaptation.

The Way Forward

To be successful, a number of issues need to be considered. These include the following:

- Building capacity at national and local levels for absorbing funds for adaptation that may become available.
- Learning from pooled financing mechanisms such as the Amazon Fund and Climate Investment Funds should be shared.
- Increasing resources and access to resources by working on the following:
 - Adaptation planners and those engaged in garnering funds for adaptation should develop a clear strategy to access funds from the Adaptation Fund and Climate Change Adaptation Funds under the Global Environment Facility (GEF).
 - Conducting more research into the applicability of AMCs to leverage adaptation finance.
 - Studying ways to link carbon financing and adaptation financing.

Information for climate resilient development

Good Practices

These include the following:

- Understanding the links and gaps between climate data, climate information, knowledge and implementation of robust adaptation actions.
- Combining information gained from top-down approaches (e.g., GCMs) with information gained using bottom-up approaches (e.g., participatory vulnerability analysis).
 - Even though the latter might be resource intensive, they are critical for an accurate assessment of vulnerability and understanding information needs for the decision-making process.
- Importance of being cognisant of climate and climate-related data on issues of scale.
- Importance of focusing on the type and amount of information that is needed or will suffice to support the decision making process.
- Incorporating indigenous knowledge in adaptation plans.
- Looking to past extremes and observed trends to develop scenarios for the future can be a simple way to develop more robust plans.
- Those involved with developing or managing climate information tools should synchronise better with the needs of decision-makers and targeted audiences.
- Incorporating other types of relevant data for planning (e.g., demographic trends, food and water consumption) in addition to climate data when planning adaptation interventions.

Gaps and Challenges

Gaps and challenges exist around the following areas:

- Providing access to climate data in formats that are meaningful to a variety of audiences (including resource manager, planner and vulnerable communities), since each audience has different aims and information necessities in terms of how to address vulnerability.
- The lack of a system for evaluating and communicating the quality of climate information available from monitoring stations, global circulation models and impact modelling.
- A proliferation of available climate information tools, as a result of which information managers/developers need to synchronise efforts and harness synergies to avoid lack of consistency and duplication.
- Methods of balancing the focus on producing quality climate data with paying adequate attention to the dissemination of current 'best available' available data and its use for affecting policy.
- Keeping the importance of data collection, analysis and improvement of climate science sharply in focus.

The Way Forward

To be successful, a number of issues need to be considered. These include the following:

- To bridge the divide between tool developers and users, the following steps can be taken:
 - Ensuring prospective users participate in the tool-development process.
 - Building feedback mechanisms into the interfaces of these tools.
 - Ensuring tool developers and data users engage with the scientific community (data providers) and vice-versa to solicit feedback on data usefulness in a streamlined manner.
 - Developing clearer guidance for practitioners and decision-makers on the use of various tools and information needs.
 - Investing in outreach and training.

- More emphasis should be laid on employing approaches that rely on robust, empirical evidence (including historical climate trends and currently available climate data) for decision-making.
- Collecting the right information and generating useful data begins with setting out clear/specific questions for investigation and determine needs for the decision making process.

Introduction

The Second International Workshop on Mainstreaming Adaptation to Climate Change – Managing Adaptation Processes took place on the 10th, 11th and 12th of November 2010 and was hosted by the UK Department for International Development (DFID), German Technical Cooperation (GTZ), the Asian Development Bank (ADB), the World Bank (WB) and the United States Agency for International Development (USAID) in New Delhi, India. This workshop built on lessons learned at the First International Workshop on Mainstreaming Adaptation to Climate Change held in Berlin in 2009 (see appendix four). The First International Workshop was organised to review tools for adaptation, recommend actions to improve these tools, discuss the Organisation for Economic Co-operation and Development's (OECD's) 'Guidance on Integrating Adaptation to Climate Change into Development Cooperation' and formulate a set of steps to enhance complementarity of tools and cooperation amongst their developers and users.

The Second International Workshop stemmed from a desire to progress from a focus on tools to a broader understanding of diverse processes that need to unfold in order for successful and sustainable adaptation to take place. It was also intended as another step in the consolidation of a community of practice that shares idioms and values on mainstreaming climate change into planning and to provide an impetus to 'climate smart' development globally. More specifically, the workshop was organised to examine five issues: a) how adaptation can be framed and conceptualised; b) integrating adaptation into planning; c) the role of monitoring and evaluation (M&E) in adaptation programmes and projects; d) finance for adaptation; and e) climate data and information.

This report captures the highlights of each session and the executive summary reflects the good practices, gaps and ways forward that were identified in each of the main workshop themes.

The workshop 'at-a-glance'

Day 1

The workshop began with a welcome session where hosts and speakers outlined their hopes for what they wanted to gain from the workshop. At this session, Amita Sharma (Joint Secretary, Ministry of Rural Development, Government of India) gave an overview of the Mahatma Gandhi National Rural Employment Guarantee Act (a livelihood security scheme) and discussed the interplay of this scheme with climate change adaptation. This was followed by a session on the different ways in which overlapping adaptation responses can be understood and categorised. The last session of day one, 'Sharing experiences from mainstreaming adaptation into planning processes' was conducted in two parts. First, panellists presented on the topic in turn; the second entailed six simultaneous presentations with the audience moving from one presentation to another in groups.

Day 2

The second day commenced with a session looking into issues surrounding the M&E of adaptation interventions and entailed presentations by panellists, followed by working groups and a plenary discussion. The second session of the day dealt with issues of finance for adaptation, followed by the division of participants into three groups for a focussed discussion on sub topics. The session concluded with a plenary discussion. The last session of day two focussed on 'Information needs for resilient development', where a panel of development practitioners presented their views on information needs and gaps, and once again, six simultaneous presentations followed a panel discussion.

Day 3

On the final day, the audience divided into four groups and discussed the good practices, gaps and ways forward for the main themes of the workshop. A lively, television 'talk show' style session followed, allowing one member from each group to report on the conclusions they reached. The workshop ended with comments from the audience on what worked well in the workshop and recommendations for future workshops.

Day 1 Session 1 Setting the stage: Opening and welcome remarks

Vera Scholz (GTZ), John Furlow (USAID), and Lauren Sorkin (ADB) welcomed participants, reflected on prior workshops and expressed their hope that this workshop would promote shared learning around adaptation. They also gave a brief overview of the goals of the workshop and outlined the agenda. Scholz emphasised the significance of a discussion on mainstreaming taking place in India- a country facing its own unique set of acute adaptation challenges before highlighting GTZ's adaptation initiatives in the country. Emma Tompkins (University of Leeds/DFID) and Amita Sharma (Ministry of Rural Development, Government of India) delivered longer presentations.

Comments by Amita Sharma (Joint Secretary, Ministry of Rural Development, Government of India): Sharma gave a presentation on India's Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The main objective of the scheme is to enhance livelihood security in rural areas by providing 100 days of annual wage employment to one adult member of every family willing to do public works-related, unskilled, manual work at the statutory minimum wage of Rs.100 per day. The act has three dimensions: ethical, economic and ecological. The ecological and adaptation benefits of the act are realised through the provision of jobs to individuals in projects aimed at water conservation, water harvesting, drought proofing, plantation and afforestation, developing flood control measures and renovation of water bodies, tanks and canals. Apart from these direct links to ecosystem services, the MGNREGA, by increasing livelihood security, reduces the overall vulnerability of individuals to the impacts of a changing climate. As the MGNREGA was not designed as an adaptation intervention to begin with, Sharma was questioned on the value and veracity of its almost 'accidental' adaptation benefits. She replied that, in her view, an intervention should never begin with the issue of climate change at its centre but should focus instead on enhancing human capacity as a pathway of realising ecological and adaptation benefits.

“MGNREGA places ‘man’ at the centre and understands that her/his activities can either improve or degrade the environment.”

– Amita Sharma

Comments by Emma Tompkins³ (University of Leeds/DFID): Tompkins described the five key areas that would be the focus of the workshop.

- a) **Framing adaptation:** as adaptation is an amorphous term on which there is no consensus, there is a need to identify the different ways in which adaptation has been conceptualised and to gauge whether these are compatible.
- b) **Technical knowledge and managing climate information:** information is critical to adaptation although there is uncertainty in existing climate models; therefore, these need to be understood as imperfect. Also, it is important to not substantially 'simplify' climate information, as a loss of complexity may also imply a loss of accuracy.
- c) **Integration of adaptation into planning:** there is a lack of a credible knowledge base on the strengths and weaknesses of climate models and how these can be applied in different regions. The multitude of possible entry points for integrating adaptation into planning also requires possibly expanding the field of vision; it is important to give further consideration to sectors such as health, tourism and education as entry points.

³ Tompkins was addressing the Workshop in her capacity as Senior Lecturer, University of Leeds; she is also currently on secondment to the UK Department for International Development.

d) **Climate finance:** there are certain critical areas around climate finance that still need exploration. These include the procedures for identifying incremental costs of climate financing from general development funding; ensuring a consistent and adequate stream of financing for adaptation efforts; methods of effectively integrating with government processes; incentive mechanisms for delivering results in adaptation; and means of engaging the private sector in delivering adaptation finance.

e) **Monitoring and evaluation:** here, remaining challenges include the identification of tools for measuring adaptation that could also deliver development benefits; developing metrics of

*“This workshop is about
advancing knowledge and sharing
good practices.”*

– Emma Tompkins

successful adaptation; and formulating systems of certifying the quality of climate models and methodologies of constructing baselines for measuring adaptation.

Day 1 Session 2

Building a mainstreaming adaptation narrative together: Framing the issues

This session was moderated by Thomas Tanner from the Institute of Development Studies (IDS).

Presentation: Tanner's presentation proposed four overlapping groups of adaptation responses. These were employed as ways of stimulating dialogue among participants around the diversity of conceptual and operational understandings of climate change adaptation.

A. **Predict and provide:** this group of adaptation responses entails calculating the probability of future climate impacts and is led by scenarios and climate impact models. It mainly views vulnerability as arising from biophysical factors that are external to the system. It prepares for the future through the use of the information at hand at any given point in time. Examples of practice that are associated with this conceptualisation include the integration of climate information in the design of breakwaters and drainage of glacial lakes.

B. **Risk sharing and transfer:** this group is hinged on the managing and transfer of risks of climate-related impacts, usually through financial and social mechanisms. These rely on social and economic analyses and manage risks through financial and social mechanisms. This framing is implicit in adaptation practices such as crop insurance and the provision of seasonal forecasts to farmers.

C. **Social vulnerability:** these focus on the drivers of social vulnerability such as assets, capabilities, livelihoods opportunities, poverty inequalities and marginalization, and hone in on social vulnerability as an entry point for addressing adaptation. As a result, this group of responses focus on climate variability. Adaptation approaches that are allied to this school of thought include those that employ gender empowerment as a route to adaptation or focus on an engagement with caste inequities as a pathway to better adapting to climate change.

D. **Addressing governance:** a fourth set of adaptation responses engages with political dimensions of vulnerability to deal with issues such as governance, finance and accountability. Here, adaptation is conceptualised as a process of engaging with political factors that mediate development processes.

The presentation concluded with a short discussion among all participants on 'resilience' in the context of adaptation as a concept that possibly cuts across the four conceptualisations.

Sharing experiences: Lauren Sorkin (ADB), Sean Doolan (Govt. of Netherlands), Ilona Porsché (GTZ) and Michelle Winthrop (DFID) shared their views and experiences of each of the four conceptualisations.

Sorkin discussed the ADB's engagement with the 'predict and provide' group of adaptation responses. While some of the ADB's infrastructure projects align with this understanding, many of their projects take a wider view of what adaptation entails. She explained how the ADB had climate proofed roads in East Timor and the Solomon Islands, and examined the impact of sea level rise on road networks in particular areas through collaboration with technical institutions (e.g., the Hadley Centre and the Commonwealth Scientific and Industrial Research Organization [CSIRO]).

At A Glance

Four overlapping groups of adaptation responses:

- A. Predict and provide
- B. Risk sharing and transfer
- C. Social vulnerability
- D. Addressing governance

Doolan discussed the example of crop insurance in Ghana as a scheme that was aligned to the 'risk sharing and transfer' group of adaptation responses. This was supported by the German government/GTZ and entailed the introduction of innovative crop insurance products in partnership with the private sector as a means of adaptation. Here, the impact of climate hazards on food and cash crop production were assessed to ultimately provide the farmers with a range of insurance products. Some of the key challenges included the existence of very poor quality climate data and overcoming institutional/governance impediments in the provision of these services.

Porsché discussed initiatives being undertaken by the GTZ that were most closely associated with the 'social vulnerability' group of adaptation responses. She described how GTZ had undertaken a study to understand the vulnerabilities and capacities of communities in northeast India using, in part, the Sustainable Livelihoods Framework. GTZ is also involved in the preparation of state-level action plans on climate change in India and in developing a framework for measuring vulnerability using both top-down and bottom-up methods. Porsché underlined the importance of engagement with communities and issues of vulnerability and noted that "...working bottom-up doesn't necessarily mean working on a small scale."

"Working bottom-up doesn't necessarily mean working on a small scale."
– Ilona Porsché

Winthrop discussed a proposed programme in Ethiopia (Strengthening Climate Institutions Programme) as an adaptation initiative that was aligned to the 'addressing governance' group of adaptation responses. The Strengthening Climate Institutions Programme would provide demand-driven support to institutions that address the vulnerability of the poorest, and those that support environmental protection programmes at all levels, including civil society and private sector. Ethiopia has a long history of robust institutions (including research institutes) that engage with issues of food security; their governance and institutional processes need to be strengthened in order for them to effectively accommodate adaptation to climate change. The programme will seek to strengthen the capacity of institutions leading on the Ethiopia Productive Safety Net Programme to address adaptation. This programme is currently supporting field-level initiatives to address vulnerability and food security, but a more explicit focus on adaptation could help enhance its impact in specific areas, for example, environmental management at local level.

Highlights of feedback from group work: the participants divided into small groups and raised a number of issues:

- The 'poorest of the poor' need to be at the centre of adaptation interventions.
- Migration could serve as an entry point for understanding/undertaking adaptation, as distress migration carries the potential of being maladaptive but planned migration can be adaptive in certain contexts.
- Participants noted the overlaps across the groups of adaptation responses, and felt that most adaptation approaches were a combination of social vulnerability assessment, climate projections and risk assessment, and improving governance.
- Innovative solutions to the challenge of engaging the private sector in adaptation are needed.
- Improved climate information needs to be developed to support effective adaptation practice.
- An engagement with politics and issues of governance was seen as key to effective adaptation.
 - This is due to the fact that weaknesses in enforcing laws, poor representation of vulnerable groups, a lack of coordination of government bodies, and gaps in linking science with policymaking and planning, among other governance challenges, present real barriers to dealing with climate change.

- Keeping an eye out for innovative information and communication technologies not only for relaying climate information to planner/project developers but also for sharing 'lessons learned' was considered a good practice.

Key point

It is critical to adopt highly individualised adaptation models in different contexts and stay away from employing a 'one size fits all' approach.

- Capacity building and livelihood support should be key components of adaptation strategies.
 - Overall, it was felt that capacities to undertake/execute adaptation interventions at the local level were quite limited and that a greater effort was needed to rectify this problem.
- A greater emphasis needs to be placed on the use of indigenous knowledge for effective adaptation.
- Scientists, communities and governments need to combine efforts for successful adaptation to take place.
- Collaboration between civil society organisations and the government was considered to be an effective means of ensuring improved service delivery.
- In planning adaptation interventions, it is important to build in 'failure scenarios' so that unexpected events do not have catastrophic results.
- It is critical to adopt highly individualised adaptation models in different contexts and stay away from employing a 'one size fits all' approach.
- Conducting pilot adaptation interventions and learning from these is an efficient means of enhancing learning of what works and what doesn't.
- Tackling issues of marginalisation and developing pathways of empowerment is an effective route to improved adaptation to a changing climate.

Day 1 Session 3

Sharing experiences from mainstreaming adaptation into planning processes

The panel included John Furlow (USAID), Merylyn Hedger (IDS), Shardul Agrawala (OECD), Nanki Kaur (International Institute for Environment and Development [IIED]) and Marcus Moench (Institute for Social and Environmental Transition [ISET]).

Comments by Merylyn Hedger: Hedger noted a number of problems with applying traditional planning processes to climate change due to the uncertainty associated with how the climate is changing. She remarked that climate change adaptation was locked in a ‘planning deficit’ as there was a lack of clarity on modalities of effectively integrating with ongoing development plans as well as a lack of a precise understanding of climate change impacts. She identified entry points for linking adaptation with international plans such as the MDGs and sectors (i.e., agriculture, disaster management and water resources); sometimes, even crises could open windows for adaptation (e.g., floods leading to the construction of the Thames barrier). She remarked that, overall, there was a need for better integration between scales of governance (from national to local), for strengthening the role of the informal sector and for acknowledging the transformative potential of integrating climate change in mainstream development plans.

There is a need for:

- A. Better integration between scales of governance
- B. Strengthening the role of the informal sector
- C. Acknowledging the transformative potential of mainstreaming.

Comments by Shardul Agrawala: Agrawala argued that integrating climate change in national-level policies/plans entailed improving access to quality climate information, engaging key national actors, organising government structures to better address adaptation and modifying regulations to reflect climate risks. He also highlighted that it was important to address adaptation at the sectoral level as vulnerability and response options were highly sector specific and methods of adaptation would vary substantially across sectors. Regarding the relevance of mainstreaming at the local level, he said that it was critical to account for adaptation at this level as climate impacts, vulnerability and adaptive capacity were realised locally. He also discussed how, with some modifications, environmental impact assessments could act as potential entry points for adaptation. He concluded by underlining the uncertainty in existing climate projections.

Comments by John Furlow: Furlow explained how USAID was supporting adaptation in areas that were not only development priorities and sensitive to climate variability, but also where interventions carried the maximum potential for impact. He said that, overall, USAID’s adaptation programmes addressed three pillars: a) science and analysis for decision-making; b) effective governance for climate resilience; and c) implementation of climate solutions.

USAID’s adaptation programmes address:

- A. Science and analysis for decision-making
- B. Effective governance for climate resilience
- C. Implementation of climate solutions

Extending the discussion on entry points for adaptation, he described a stakeholder workshop to design an adaptation programme in the Eastern Caribbean. He underlined how

participants first identified economic drivers (tourism, agriculture and manufacturing) as the starting point for planning; then discussed the critical inputs needed to support these activities (fresh water, energy, governance, etc.); and finally discussed the stresses on these inputs, both climate and non-climate (changes in rainfall, pollution, corruption, etc.) as a route to embed adaptation in a broader development perspective. (See appendix 1 for a graphical representation of USAID’s approach.)

Comments by Nanki Kaur: Kaur highlighted the importance of congruence in scales for the effectiveness of any adaptation mainstreaming initiative. As the capacity to respond to climate change exists from the supra-national to the sub-national levels, it is critical that any adaptation being played out/mainstreamed at one level (e.g., planned adaptation interventions at the national level) supports that which may be happening at another (e.g., autonomous adaptation measures at the local levels). She concluded her presentation by

“Local Adaptation Plans of Action enable the most vulnerable to reach up and draw down on resources.”

– Nanki Kaur

discussing Local Adaptation Plans of Action (LAPA) in Nepal as an adaptation planning process that exploited synergies between scales to allow the most vulnerable to reach up and draw down resources.

Comments by Marcus Moench: Moench began by discussing how diagnosing vulnerability is a good entry point for adaptation and this is usually a sum of exposed or fragile systems, exposed or low-capacity populations and exposure to the impact of climate change. To demonstrate the need for thinking systemically, he discussed how elaborate systems such as the government, the private sector and civil society rest on a foundation of ‘critical systems’ such as land, energy and ecosystems. Resilient systems, he argued, result from institutions and infrastructures that were flexible, redundant, modular and designed to fail safely; as well as through agents (i.e., governments, markets and identity groups) that had the ability to plan, visualise and organise effectively. (See appendix three for a graphical representation of ISET’s conceptualisation)

Marketplace sessions: marketplace stalls were organised where Nana Künkel (GTZ) and Nguyen Hieu Trung (College of Environment and Natural Resources, Can Tho University, Vietnam), Bhagirathi Behera (Government of Maharashtra) and Ashok Singha (CTAN), Shamit Chakravarti (ADB), Alamgir Hossain (USAID/Bangladesh), Ajaya Dixit (ISET) and Tomonori Sudo (Japan International Cooperation Agency [JICA]) made presentations.

Climate proofing for development: Experiences from local development planning in Vietnam (Nana Künkel and Nguyen Hieu Trung): GTZ’s approach to climate proofing development includes four steps: a) screening; b) climate analysis; c) prioritising needs for

action; and d) integrating adaptation elements into project design. A discussion also took place on how this approach had been applied to a project in Tra Vinh, Mekong Delta, Vietnam. Three key lessons from this project were identified in response to a question from a participant: a) it is important to have a pragmatic tool, which allows project planners to understand the experiences and worldviews of community members; b) it is critical to have climate data that is ‘digestible’/easily understandable; and c) effective climate proofing requires the development of innovative approaches for working across scales.

Three lessons learned from GTZ’s Vietnam experience:

- A. Need for tools to understand community experiences
- B. Value of ‘digestible’ climate information
- C. Importance of innovative approaches for working across scales

Case of climate change action planning in Orissa, India (Bhagirathi Behera and Ashok Singha): this session included a presentation of Orissa’s climate change action plan and the process of its development. The action plan is a collection of recommended actions for adaptation

Three challenges in preparing Orissa's climate change action plan:

- A. Ensuring positive work culture in the working group
- B. Estimating costs
- C. Negotiating extreme positions

and mitigation in 11 sectors (agriculture, coasts and disasters, energy, fisheries, forests, health, industry, mining, transport, urban and water) and was prepared with assistance

from DFID and the WB. The preparation of the action plan began with a scoping study, which led to the design of a plan structure; this was followed by detailed institutional structuring (establishment of working groups), a vulnerability assessment, an inventory of emissions, a prioritisation of issues, a prioritisation of actions and, finally, the preparation of indicative budgets. In response to a question on the challenges faced by the planners in this process, the presentation team said that some of the hurdles included ensuring effective collaboration amongst members of the working group (charged with plan development), estimating costs and negotiating with civil society organisations that sometimes adopted extreme positions on issues.

Climate change adaptation and the ADB (Shamit Chakravarti): here, a quick overview of the adaptation initiatives that the ADB has been undertaking in India and Sri Lanka were discussed. In India, the ADB is: a) helping the Ministry of Water Resources to prepare a strategic framework for meeting the climate challenges in the water sector; b) helping formulate an adaptation-focused, sustainable water resources strategy for Himachal Pradesh; c) preparing an assessment of how the Sutlej River Basin can be managed sustainably to meet competing needs across sectors; d) supporting a scoping study to help design sustainable water systems in Karnataka; e) shortly launching a coastal protection project, which will have adaptation benefits; and f) mainstreaming adaptation and mitigation in the ADB's work in-country. In Sri Lanka, the ADB has studied the vulnerability of five key sectors to climate change as a step in the preparation of a climate change adaptation strategy for the country. On being asked about the ADB's view of how important it was to engage community-level organisations, the participants learned that the ADB views them as important stakeholders in any successful adaptation strategy as they believe that government officials at the local level are usually overburdened with the delivery of different projects.

USAID programmes for adaptation to climate change in Bangladesh (Alamgir Hossain):

USAID is engaged in building the institutional capacity for research towards climate resilience, undertaking sectoral adaptation programmes, developing climate resilient cropping systems, improving disaster forecasting and early warning systems, monitoring ecosystems and biodiversity changes, developing renewable energy systems, undertaking afforestation, helping protect livelihoods in ecologically fragile areas, raising awareness of climate change issues and mainstreaming adaptation in a variety of development programmes. Bangladesh is unique in that all relevant ministries have an embedded climate change cell, which is charged with mainstreaming climate change in the activities of the ministry. The participants had a number of questions related to whether the rapid rise in the country's wealth had led to a decrease in the

vulnerability of its people to climate change. Hossain said that while empirical evidence was scant, it was generally believed that increasing national wealth was indeed leading to declining vulnerability. The government has been committing increasing sums of its own funds to building resilience to climate

“While adaptation is a high priority, low carbon growth is a strategic pillar of USAID's plans in Bangladesh”
-Alamgir Hossain

change. Another set of questions dealt with the prevalent degree of political will for action on adaptation in Bangladesh. Hossain explained that the Prime Minister's keen, personal interest in the issue has helped it gain traction. Climate change has become an election issue in Bangladesh, as evidenced by the inclusion of such issues in the manifesto of the party in power. One participant enquired how USAID divides efforts between 'low carbon development' and adaptation and learned that achieving a balance between the two has been a source of anxiety for the organisation. USAID Bangladesh sees adaptation as a priority while low carbon development is a long-term, strategic goal.

Local adaptation planning in Nepal (Ajaya Dixit): The Institute for Social and Environmental Transition (ISET), in collaboration with a number of other organisations, has worked on local-level planning for climate change adaptation in Nepal using 'shared learning dialogues' (SLD). The SLD is a learning tool that is different from regular participatory approaches as the former leads to an 'exchange' of knowledge whereas, the latter implies only an 'extraction' of information. ISET adopted this pilot approach in eight districts where communities and experts identified a range of hazards; they then discussed how the dynamics of these would possibly be affected by a changing climate, identified a range of adaptation strategies and, finally, agreed on a list of interventions that would integrate adaptation in the development processes of Village Development Committees and District Development Committees. This session also underlined how ISET used 'core gateway systems' (also called 'critical systems') as the starting point for gauging vulnerability and it was this foundation of energy, water, forestry and land systems that supported other systems such as livelihoods, markets, governments, etc. One participant asked what the most significant learnings from this endeavour were, to which Dixit replied that this experience had proved that local communities have a certain degree of knowledge about the dynamics of environmental change. He explained that with a certain degree of capacity building, they could be empowered to contribute significantly to resilience building strategies for their areas.

Sharing experiences from mainstreaming adaptation into planning processes (Tomonori Sudo): the Asia-Pacific Adaptation Network is led by the United Nations Environment Programme (UNEP) and aims at generating and sharing knowledge on adaptation, developing capacities, improving access to adaptation finance mechanisms and improving application of knowledge and decision-making for adaptation. The discussion on mainstreaming adaptation began by looking at how it is important to focus on those areas of adaptation that correlated strongly with ongoing development plans, as these carry the most potential to gain traction. The basic process of developing a 'climate change policy matrix' was presented, where certain actions from

Key Point

Screening current development policies with a climate lens is an effective method of prioritising climate change issues at the national level.

development plans are selected, a 'climate lens' is applied to these and then, through a dialogue with stakeholders, a list of priority actions is consolidated to effectively mainstream adaptation into planning processes.

Day 2 Session 1

How do we evaluate and learn?

This session was led by Nana Künkel (GTZ). The panel included Meg Spearman (World Resources Institute [WRI]), Ian Tellam (ETC Foundation), Indrani Phukan (Christian Aid) and Paul Thornton (Verulam Consultants).

Comments by Meg Spearman: Spearman began by discussing M&E practices in the context of adaptation and presented the need for adaptation M&E to be part of long-term planning and become iterative in nature. She also stated that M&E should move away from a focus on tracking progress to a focus on learning and engaging stakeholders – rely less on expert evaluation consultants and build local capacities to evaluate initiatives. She mentioned that the WRI's approach to M&E aimed at ensuring continual learning by gauging adaptive capacity, adaptive activities (e.g., risk reduction and risk management) and sustainable development gains (the long-term benefits of adaptation). She gave a quick example of an M&E project conducted by the WRI in India and said that, amongst other points, the results of their work led to an understanding of how a combination of scientific data, community-level observation and third-party verification was useful for effective M&E, and adaptive management, learning and awareness were critical to a functioning M&E system. In response, an audience member raised a point about the importance of using different M&E tools to achieve different ends (e.g., gauging aid effectiveness or simply project outputs). Spearman agreed with this and said that this was a challenge with which the WRI was struggling.

Key Point

A combination of scientific data, community-level observation and third-party verification is useful for effective M&E.

Comments by Ian Tellam: Tellam's remarks focussed on the M&E approach of the Netherlands Climate Assistance Programme (NCAP), an initiative aimed at helping developing countries across the world with the 'qualitatively good preparation, formulation, implementation and evaluation of national climate policy'.⁴ The NCAP had eight indicators that were imprecise, general and vague; therefore, to rectify the situation, two approaches have been adopted. First, a system of certifying processes (similar to ISO certification) is being developed to promote the integration of climate change factors in development; second, numerical targets are being set (similar to the MDGs) to reduce the number of people at risk from the impacts of climate change. These approaches are being applied to three main areas: a) finance (e.g., percentage of GDP for domestic adaptation actions); b) sectors (e.g., building codes, water efficiency, etc.); and c) human development (e.g., protecting livelihoods from climate change). Tellam discussed the usefulness of policy action matrices, which allow for effectively plotting the current situation and the changes needed to improve the adaptation scenario on a table (also a polygon) as a way of keeping track of the progress that needs to be made (see appendix three). In response to his presentation, a member of the audience probed him on the viability of developing certification processes for adaptation. His response was that these were viable if emphasis was laid on transparency and accountability.

Comments by Indrani Phukan: Phukan discussed the DFID funded Strengthening Climate Resilience project and, as part of this, the development of Climate Smart Disaster Risk Management (CSDRM). She stated that while M&E for this project was yet to begin, they had started developing plans and conducted a literature review on M&E for adaptation. It was found

⁴ <http://www.nlcap.net/about/background/>

that mainstream approaches to M&E fell short in that they tend not to engage with perceptions of risk or understand how capacity leads to action; they also pay little attention to decision-making processes at the household level. M&E for CSDRM will ensure analyses of ‘why and how’ outcomes have been met and that the M&E framework will be a hybrid process; outcome indicators will also focus on learning promotion.

Comments by Paul Thornton: Verulam consultants have developed the M&E framework for the Rockefeller Foundation (RF) funded Asian Cities Climate Change Resilience Network (ACCCRN). Thornton began by discussing how the challenge was not in developing metrics but in understanding the relationships between activities and outcomes. He stressed that for the ACCCRN, M&E was being used as more than just a way to track progress but to perform a substantive learning function. This is was made possible partly through the use of indicators at the impact, outcome and output levels. Overall, Verulam was using developmental evaluation (e.g., non linear and adaptive), participative evaluation (through engagement with the client and its networks), employing the process approach (i.e., engagement with all stages of the process

“The problem is not developing metrics but understanding the relationships between activities and outcomes.”

– Paul Thornton

including, but not limited to, the impact) and using M&E personnel who were familiar with the context (locales, languages, culture) of the areas where project was being implemented.

Highlights of feedback from group work: the audience was divided into a number of groups and asked to reflect on these discussions. Below is a snapshot of the discussions that ensued:

- There is a need for creative M&E tools to better understand adaptation, including narrative approaches and case studies.
- It is important for M&E of adaptation to be firmly grounded in a conceptual framework and theory of change.
- M&E serves two purposes: accountability (how funds are used and activities delivered) and learning (to understand effectiveness, support project management and identify good practices).
 - The true potential of M&E will be realised when it engenders learning and is linked to iterative planning systems that are flexible enough to appropriate findings and change accordingly.
 - Learning can relate to sectors that need to be better adapted, capacities that need to be built or synergies that adaptation can harness with mitigation.
- ‘Techno-managerial’ or procedural approaches to understanding adaptation will achieve only limited success, as there is a need to examine people’s perceptions of risk and their agency/empowerment to thrive despite climate change.
- It is critical that the poor and the most vulnerable be included in M&E procedures.
- It is important to understand that success should not be defined purely in terms of improvement in outcomes but should also be linked to the quality and degree of learning.
- Indicators that measure process may be more relevant to adaptation than those measuring outcomes, since adaptation is not a separate outcome, but rather a way of sustaining development gains.
- It is important to use the results of M&E usefully to acknowledge failure and share approaches that do not work.
- Baselines are important but the uncertainty and dynamism introduced by climate change may render baselines for adaptation less effective than for other sectors; therefore, there may be a case for using other instruments such as ‘trend lines’ instead.

Day 2 Session 2

Adaptation financing mechanisms and issues

This session was led by Shantanu Mitra (DFID). Opening comments were made by Shailaja Annamraju (DFID) and presentations were made by Nanki Kaur (IIED), Prema Gopalan (Swayam Shikshan Prayog), Leanne Jones (DFID), Priti Kumar (WB) Arabinda Mishra (The Energy and Resource Institute [TERI]) and Joanne Manda (DFID).

Comments by Shailaja Annamraju: Annamraju began by discussing how a number of different methods to cost adaptation are being employed, and how it is important to think more about methods to identify the adaptation deficit and the incremental costs for adaptation. She also presented a growing number of sources for financing adaptation, including domestic finance, taxation, private sector support, ODA, grants and loans. She underlined the importance of issues of governance around adaptation, as transparency was critical to the sustained success of initiatives. She highlighted the need for clarity on methods of prioritising adaptation options and argued that cost benefit analyses are helpful but have certain limitations that need to be acknowledged. She also discussed how the potential role of the private sector in financing adaptation needs further investigation. Finally, she stressed the importance of keeping 'aid effectiveness' in the picture, as there was a growing proliferation of initiatives with the potential to overburden recipient systems.

After Annamraju's comments, the audience divided into three groups to engage more deeply with issues of financing adaptation. The three groups were: a) public finance (Arabind Mishra and Joanne Manda); b) decentralised mechanisms (Prema Gopalan and Nanki Kaur); and c) private sector financing (Priti Kumar and Leanne Jones).

Highlights from the public finance group: Mishra began his presentation on producing cost estimates for climate change adaptation in India by outlining that costing was critical because: a) it gave a sense of the additional resource requirements; b) it was a prerequisite to planning; and c) it allowed policymakers to consider options. For this initiative, adaptation costs were estimated in five sectors: agriculture, human health, coastal zones, fresh water resources and forest ecosystems. This study shed light on how the scope for government intervention in adaptation is large; such interventions would be additional to business-as-usual development programming and that action is required on a large scale. Some concluding thoughts included the possible participation of the private sector through insurance, micro-credit and technological interventions; the need for examining how carbon financing could be linked more closely to adaptation financing; the importance of gauging who the right stakeholders were, what role community-based organisations could play and how government programmes could be better coordinated in order to support adaptation efforts.

Costing adaptation is important as:

- A. It gives a sense of the additional resource requirements
- B. It is a prerequisite to planning
- C. It allows policymakers to consider options

Manda, in her presentation on 'Financing Bangladesh's Adaptation Plan', discussed funding arrangements for a number of large-scale adaptation interventions underway in the

country and drew out a number of key lessons. These included the need for improved coordination between climate financing and a wider development of priorities, the need for building government capacity to spend adaptation funds usefully and the need for donors to try harder to not duplicate efforts and place an additional burden on recipient systems. She also mentioned that multilateral development banks that supply finance need to be flexible in their approach and make space for iteration in their plans; the space for civil society to play a role in holding government and donors to account needs to be expanded; and the private sector needs to be engaged to a greater extent in financing adaptation.

A number of interesting points were raised in the discussion that followed:

- Making more precise estimations of additional/incremental costs for adaptation (over development-as usual) is a challenge that needs to be overcome.
- Acknowledging the methodological inadequacies and the limits of climate data in deriving costs estimates for adaptation.
- Considering which bodies from the government need to be engaged (e.g., does it make more sense to engage the Prime Minister's office rather than the Finance Ministry?).
- Fiduciary risk concerns should not become an impediment to adaptation and there needs to be an acknowledgement that, in most adaptation interventions, progress will be slow to begin with.

Highlights from the decentralised finance group: Gopalan gave a presentation on Community Resilience Funds (CRF), which provide USD 5 million to grassroots women's groups in 12 countries to reduce vulnerabilities to climate threats. In India, the fund is implemented by eight organisations in 88 villages. It was established to prove that a funding mechanism can promote a decentralised approach to adaptation; create awareness at the community level about climate change and the hazards associated with it; build assets and engender adaptive strategies; and feed lessons into relevant national and international policies. This initiative shows that it is possible to move the government to include adaptation financing into budgetary processes, as the Government of India has committed (in principle) to scale this up by mainstreaming it in Five Year Plans. The fund, by involving community members and their leaders, shows how ordinary citizens can help ensure transparency and accountability. Also, this initiative is critical in demonstrating that financing mechanisms can empower and enable decentralised decision-making; it has allowed learning networks within districts to facilitate the scaling up and replication of funds through dialogue forums and cross-learnings. While this initiative has seen substantial successes, it is facing a number of challenges. These include dealing with mindsets that viewed women's groups as only beneficiaries and not as agents of change with valuable experience.

Nanki Kaur's presentation on decentralised financing began by establishing a context for discussing 'reach up and draw down' mechanisms of financing adaptation by outlining how UNFCCC adaptation negotiations recognised the importance of 'subsidiarity'. She went on to discuss how Nepal's National Adaptation Programme of Action (NAPA) aims at effectively employing climate change finance at the local level through the formulation of the Local Adaptation Programmes of Action (LAPAs). The LAPA is a bottom-up/demand-driven process for adaptation planning and delivery. Here, bottom-up planning helps

identify priorities at the level of the Village Development Committee, which then receives planning and budgetary support from the top – leading to a demand-driven approach to climate financing. Following this, Kaur discussed some issues with the management of adaptation finance, including methods of ensuring dual accountability, methodologies of prioritising adaptation needs and the ways in which financing mechanisms can support bottom-up integrated planning. This was followed by a discussion on ‘cash on delivery’ as a finance disbursement mechanism that could incentivise results, as well as a discussion on methods of putting a value to changes in adaptive capacity of the target beneficiary groups. The presentation concluded with a look at micro-savings and micro-credit as potential mechanisms of generating revenue for adaptation at the local level.

Highlights from the private sector finance group:

Kumar discussed whether approaches from micro-finance initiatives could be employed to leverage funding for adaptation using the example of the WB’s

Andhra Pradesh Drought Adaptation Initiative (APDAI). Although not considered a private sector investment, she explained how APDAI was able to leverage local funding from micro-finance initiatives. She then outlined a number of criteria that needed to be met for micro-finance approaches to be effective for adaptation. These include the need for strong and transparent community organisations with management capacities, and the need for communities to understand the issue (i.e., a certain degree of climate literacy). She also underlined the importance of the donor community and the private sector working in tandem by citing an example of how investments from donors helped reduce livestock mortality rates by improving livestock management (thus, also addressing an aspect of the adaptation deficit to current variability). This then led to the creation of an atmosphere where private insurance companies could provide insurance products to livestock farmers.

Key point

Micro-finance initiatives are successful in a context where there are strong and transparent community organisations with management capacities.

A discussion followed Kumar’s presentation, where particular audience members raised the following points in the context of APDAI:

- Strong, decentralised institutions were critical for micro-finance to effectively lead to empowerment.
- The need for private sector participation as a means of ensuring the sustainability of initiatives such as livestock insurance.
- The critical importance of developing weather index-based insurance systems that could be used at scale.

Jones gave a presentation on the use of the AMCs for leveraging finance for low carbon technology. AMCs are temporary interventions to incentivise the development of new technologies by offering a secured market for products that are in the pipeline. Therefore, these help create markets, tie the technology developer to deadlines and can be set up to yield poverty alleviation co-benefits. A pilot scheme to test this financial mechanism is being run in Rwanda to support the development of three low carbon technology products (biogas digesters, LED lights and hydro mini-grid connections). Though untested, such approaches could be applied to leverage funds for adaptation, provided the criteria for funding and technology development are set up correctly. It was clear that the uses of AMCs in adaptation would be clearly limited as, at best, they could be used to roll out

particular 'products' (such as improved irrigation technologies) and not cross-cutting projects.

A discussion followed Jones' presentation, which brought up a number of interesting issues such as:

- The importance of ensuring that the private sector balances the profit motive with making these technologies available to those who need them most.
 - This can be done by integrating such concerns into the M&E plans for the project and by engaging local institutions (such as local banks) in providing oversight to ensure that the poorest of the poor can benefit from schemes such as this.
- There was some lack of clarity on how to gauge whether technologies being developed by AMCs would be adopted by communities.
- More work also needs to be done to develop methods of exposing policymakers to potentially transformative products, including those addressing climate change adaptation, that are in the pipeline and which may benefit from funding through the AMC approach.

Highlights from the plenary discussion: At the end of the session, the participants came together and communicated the highlights of discussions from each of their groups. (A number of these have been mentioned earlier, but here are some additional points.)

Public finance group:

- Issues around determining and financing incremental costs for adaptation need to be investigated further.
- Estimating costs of adaptation at multiple levels is important to get decision-makers to think about these issues.
- Remaining questions:
 - Who bears the costs of adaptation?
 - How much of this money will actually reach the people who need it?
 - Are the financing mechanisms fit for this purpose?

Decentralised finance group:

- Funding mechanisms can drive action and define the nature of adaptation.
- Further examination is needed in order to understand how best to prevent the capture of funds at the local level by elites.
- Funding mechanisms can help ensure that activities by local groups are calibrated with government efforts and vice versa.

Private sector group:

- It is important to ensure subsidies given to the private sector product development are temporary and do not distort market structures.
- Donors and governments need to undertake more pilot approaches to demonstrate how the private sector can play a critical role in ensuring the sustainability of certain adaptation building finance initiatives (e.g., insurance).

Day 2 Session 3

Information needs for resilient development

This session was led by Ana Bucher (WB); the panel included Basanta Shreshtha (International Centre for Integrated Mountain Development [ICIMOD]), N. Harshadeep (WB), Ilona Porsché (GTZ), Liz Fabjer (DFID) and Haresh Bhojwani (Columbia University). Marketplace stalls were run by Basanta Shreshtha (ICIMOD), Sreeja Nair (TERI), Haresh Bhojwani (IRI, Columbia University), Fernanda Zermoglio (WB), Michael Scholze (GTZ), Blaine Harvey (IDS) and Liz Fabjer (DFID).

Comments by Ana Bucher: Bucher stated that synchronising available climate information with the needs of decision-makers was important. She mentioned that in order to implement actions, climate data needs to be processed and transformed into information that deals with vulnerability and risk, which in turn needs to be assessed to evaluate options to gain local knowledge, that will then allow decisions-makers to promote actions that increase resilience to climate change. She explained that the information session would deal with issues such as the nature of the information needed to support adaptation, and the uncertainty in prevailing climate data for producing climate information. The objective of the session was to learn from different experiences of different institutions with regard to: a) the type climate information that is available or currently in use for supporting adaptation decision-making within each organisation; b) the potential gains that can be made from ongoing research initiatives to support adaptation planning; and c) the gaps and needs in terms of climate services and access to information.



Comments by Nagaraja Rao Harshadeep: N. Harshadeep provided the perspective of the WB in dealing with climate risks and mentioned that there was a clear need to respond to both climate change and climate variability. Apart from the climate, a number of other factors are also changing (e.g., population), and it is important to take these into account before finalising adaptation strategies.

Key Points

- Information on many types of changes, apart from the climate, needs to be considered in the formulation of adaptation strategies.
- There was a clear need to mediate between sound science and practical development needs in the use of climate information for adaptation.

Regarding climate information, he urged caution in downscaling global and regional climate models for deriving data for the local level. He said that there was a clear need to mediate between sound science and practical development needs in the use of climate information for adaptation. He concluded by underlining the need for considering issues of access and discussing the role of new technology in the collection and communication of climate data.

Comments by Ilona Porsché: Porsché shared GTZ's perspective and spoke of how they needed climate information to support the mainstreaming of climate change within their programmes. She explained how GTZ had developed an internal audit tool, the Environment and Climate Assessment (*Climate Check*), which is a procedure for ensuring that GTZ's initiatives are climate proofed. GTZ has also developed guides and trainings on the use of climate information in decision-making,

particularly the training on integrating adaptation into development cooperation developed in collaboration with OECD task team members and other interested parties.

Comments by Liz Fabjer: Fabjer began by saying that a wide variety of information was needed to support adaptation, ranging from climate models and weather forecasts to an understanding of poverty and resource dynamics. She underlined the importance of issues of scale, precisely identifying the knowledge needs of policymakers, developing systems of quality assurance of climate information and then democratising knowledge, research and data. She said that there was a need for scientists to engage with information users and to solicit feedback on its usefulness in a streamlined manner. She stressed ‘no-regret’ or ‘low-regret’ options for adaptation, as the uncertainty in climate data is not likely to be eradicated in the near future. She concluded with a few examples of DFID’s initiatives to strengthen the generation and communication of climate change knowledge.

Comments by Haresh Bhojwani: Bhojwani said that there was too much emphasis on employing climate scenarios for planning (essentially a top-down approach). This was despite the fact of there being a substantial amount of uncertainty embedded in each scenario and discrepancies between models. Ways of making progress with vulnerability reduction despite uncertainty could include identifying climate vulnerabilities and opportunities in collaboration with the vulnerable, by understanding their risks, learning from historical climate variability, monitoring the present and analysing predictions for the near future.

“Applying state-wide or nation-wide models to local levels can be problematic.”
– Haresh Bhojwani

Comments by Basanta Shreshtha: Shreshtha introduced ICIMOD and underlined the importance of space, time and socio-economic issues in the preparation of climate information. He also described the complex interaction of Himalayan ecosystems with climate change and highlighted the need to scientifically study the interaction of water systems, natural hazards, biodiversity, atmospheric systems and land to produce knowledge that would be helpful for planning adaptation. He introduced SERVIR, a ‘regional visualisation and monitoring system that integrates earth observations and models with situ data and knowledge for timely decision-making to benefit society’⁵.

Highlights from the audience discussion: The audience was given a chance to ask questions and comment on the panel discussion. The highlights included:

- There is a need for harnessing synergy amongst the efforts of disparate actors producing climate information.
 - This could be done at the country level, where donors could pool in resources and coordinate efforts.
- There has been a proliferation of ‘data-free analysis and analysis-free decision-making’ and there is a need for a shift in culture towards more evidence-based approaches to decision-making.
- It is important to think about modes of information dissemination and consider innovative and accessible ICT.
- It is critical for information providers to keep the audience for climate information firmly in perspective.

Marketplace: following the discussion, six marketplace stalls were run by Basanta Shreshtha (ICIMOD), Sreeja Nair (TERI), Michael Scholze (GTZ), Blaine Harvey (IDS) and Liz Fabjer (DFID), Haresh Bhojwani (Columbia University), Fernanda Zermoglio and Ana Bucher (WB).

⁵ <http://www.servir.net/en/>

SERVIR (Basanta Shreshtha): Shreshtha's presentation began with a discussion on how population dynamics, globalisation, natural resource use and changing land use patterns combined with climate change were putting substantial pressure on the mountain ecosystem. The Himalayas hold a vast percentage of the fresh water needed in South Asia and are an important reservoir of biodiversity; therefore, monitoring changes in this region is critical. ICIMOD has employed a transect approach for ecosystem monitoring which entails a common regional protocol and methodology that yields consistent time-series information to understand and adapt to the impacts of climate change. ICIMOD's approaches were set to test in the aftermath of the Pakistan floods 2010 and in measuring issues of trans-boundary air pollution. Shreshtha described a Regional Visualisation and Monitoring System (SERVIR), an earth observation, monitoring and visualisation system that integrates satellite and other geospatial data for improved scientific knowledge on climate change. In the discussion, participants thought that it was important to introduce SERVIR to the donor community and harness synergies with other information systems in the region. Another participant felt that it was not enough to simply produce information but also study mechanisms of affecting policy.

Key point

It is not enough to simply produce information; it is important to study mechanisms of using it to affect policy.

Vulnerability assessment (Sreeja Nair): This marketplace stall exposed the audience to top-down and bottom-up approaches to vulnerability assessment. Top-down models included simulation-model-based methods, indicator-based methods and methods that were a combination of the two. Bottom-up approaches to understanding vulnerability entailed collecting qualitative data from the location of interest, typically focussed on existing vulnerability and relied on participatory approaches. The speaker then demonstrated a methodological framework for vulnerability assessment that TERI was developing with support from GTZ. This methodological framework was a sum of six steps (see box). In conclusion, the speaker also highlighted the importance of formulating as 'specific' a question as possible to obtain the best possible result from a vulnerability analysis. After the presentation, a participant had a query about which out of the top-down or bottom-up approaches was more resource intensive. Nair replied that the bottom-up approach was more intensive but sometimes it was necessary to adopt these approaches to validate findings from other top-down processes.

Methodological framework for vulnerability assessment

- A. Identify the key environmental and developmental issues for the state/region.
- B. Identify the key climate hazards.
- C. Analyse relationship of climate hazards and environmental/ developmental issues.
- D. Consider existing response mechanisms.
- E. Vulnerability assessment
- F. Integrate feedback.

CI Grasp (Michael Scholze): The Global and Regional Adaptation Support Platform is a web-based climate information service. It aims to support decision-makers in developing and emerging countries to prioritise adaptation needs, and to plan and implement appropriate adaptation measures. It directly targets the decision-makers' technical support structures. CI Grasp addresses the challenge that climate information and knowledge is not always available in a structured way. It structures the information into three main categories:

- **Climate change stimuli:** information about changes in climate stressors – temperature, precipitation drought and sea-level rise.
- **Climate impacts:** the effect of climate change on particular sectors or 'exposure units'.

- **Adaptation measures:** a database of reviewed real-world adaptation projects addressing specific climate impacts.

So-called climate impact chains are the connecting threads between the three categories. These are cause-and-effect chains that link climate change stimuli with their potential impacts and adaptation measures. During the initial phase of system development, the focus was on nine countries: Brazil, Chile, China, India, Indonesia, Philippines, Peru, South Africa and Tunisia.

Climate Change and Adaptation in Africa (CCAA) Programme (Blaine Harvey and Liz Fabjer):

the speakers described the CCAA, a five-year research programme to alleviate poverty linked to current climate variability in Africa. A number of issues with climate information have emerged in the programme. These include the difficulty that farmers have in interpreting data, the resolution of data being too coarse to inform decision-making at the local scale and incomplete and mistimed dissemination of information. The programme is attempting to rectify this by integrating seasonal forecasting and indigenous knowledge, harnessing the potential of informal networks for information dissemination and employing participatory approaches to interpreting climate information. The session ended with a short description of the Africa Adapt programme, which aims to translate research in a way so as to be most useful for stakeholders. It also works at forging alliances for improved knowledge sharing and identifying constraints to knowledge sharing. A member of the audience wanted to know how either of these initiatives was studying how information/data gets appropriated into policy. The speaker replied that links with policymaking institutions had been made to examine this issue more closely. Another audience member suggested that looking at the nature of the programmes being described, it would be cognisant of the political-economic aspects of data.

Historical Vulnerability Tool (Haresh Bhojwani): one of the key points of Bhojwani's session was that it was important to look at the past when thinking about future climate change. He demonstrated the Map Rooms data library⁶ of the International Research Institute (IRI) for Climate and Society, which is a powerful tool that allows the user to access over 300 data sets on climate-related topics, analyse data, monitor present climate conditions with maps and analyses and create visual representations of climate data. This tool was evidence of a successful process of gathering information and then operationalising it. There were examples of data being used for malaria control, food security, etc. The IRI collaborated with the International Federation of the Red Cross and Red Crescent Societies (IFRC) to undertake seasonal forecasting of drought in West Africa

Key Point

It is important to look at the past when thinking about future climate change.

and successfully reduce risk from this slow onset disaster using elements of this tool. Bhojwani also demonstrated a Map Room created for the WB Climate Change Knowledge Portal, where historical climate variability was assessed at various time scales (interannual, decadal, and long-term linear trend) at the weather station level for more than 7,000 weather stations all over the globe⁷. Overall, Bhojwani felt that in order to be most useful for decision-makers, it was important to carefully supply only as much information as was being requested and tailor information products to particular needs. Participants raised a number of questions, which included issues of free access to the tool (via IRI or the WB Climate Change Knowledge Portal), to which the speaker replied that the tool was free for all to use. On being probed about what the future of this work was, Bhojwani replied that IRI wanted to move in the direction of providing higher resolution information at closer scales.

⁶ <http://iridl.ldeo.columbia.edu/maproom/>

⁷ <http://sdwebx.worldbank.org/climateportal/>

Climate Change Knowledge Portal (Fernanda Zermoglio and Ana Bucher)⁸: The WB Climate Change Knowledge Portal contributes to the integration and synthesis of useful climate information in development actions, and represents a tool for incorporating environmental issues, including climate change. In an effort to serve as a 'one-stop shop' for climate-related data and tools, the portal provides access to comprehensive global and country data and information related to climate change and development. The portal provides a web-based platform to assist in capacity building and knowledge development. Its aim is to help project teams to plan, monitor and evaluate project responses with respect to climate change risks. Throughout, the goal has been to assist and simplify access to and application of relevant quality information pertinent to the risks and opportunities posed by climate change. The portal consists of a spatially referenced global climate and climate-related data visualised on a Google Maps interface. Users are able to evaluate climate-related vulnerabilities and risks from a query on a particular location on the globe by interpreting climate and climate-related data at different levels of details. In addition, the portal provides access to: a) foundation datasets, including information on historical trends and projected changes in climate variables, frequency and occurrence of disasters, socioeconomic indicators, and outputs from impact models (crop yields, runoff); b) knowledge base to access WB projects; c) links to relevant data, tools and knowledge resources from the wider adaptation community; and d) access to the WB Screening Tool ADAPT, which guides users through the process of screening projects activities for potential climate risks at the local level. Participants raised a number of issues which included those of translating the portal into multiple languages, bandwidth limitations, providing portal information on a CD to users with no/poor internet connections and uploading new information including downscaled models and land use/land cover changes.

⁸ See preceding footnote

Day 3

Working together to capture what we have learned

Participants were divided into four groups and were asked to consolidate a list of key lessons, gaps, ways forward and general observations from the sessions on M&E, climate information, finance and planning that took place on the two preceding days. This session was led by Vera Scholz.

Highlights of feedback from working group on information (Clare Shakya⁹): Shakya reported that the working group felt that an immense amount of progress had been made in the quality and quantity of information available but there is a palpable gap in availability of information in the appropriate form/format form that would be useful to different users with varied aims. Regarding gaps, first, the group felt that most of the formats in which climate information was available assume a certain level of expertise in the user, which is sometimes unrealistic, and that there was a need for clear guidance on the use of climate information. Second, there is a need for the improved tailoring of information into products that suit specific needs. Third, there is a need to develop systems of evaluating the quality of information available through the various portals through expert/stakeholder reviews. Fourth, the group also felt that there is a clear need for combining top-down and bottom-up information to synthesise an accurate image of how climate change may be impacting particular areas. Fifth, there is a case for diverse portals providing climate information to combine efforts better and work in sync with one another. As for ways forward, Shakya said that first, climate information tool developers and managers need to build in feedback mechanisms and solicit suggestions from users. The WB and GTZ agreed to examine this issue more closely. Second, in order to bridge the gap between tool developers and the user's expectation, GTZ will look into developing (in collaboration with others) better guidance for the CI Grasp portal. Third, participants in the group engaged in tool development/management said that they would work to involve users to a greater degree to understand their needs better. Following this, there were numerous questions from the audience. Apart from what has been discussed in this report already, the highlights include the following:

- The IPCC Climate Information group is doing a review of knowledge portals and certification of quality of information, and preliminary results can be shared informally.
- There is a need to package social information (not just climate information) with a climate lens to feed into planning and implementation.

Highlights of feedback from working group on finance (Merlyn Hedger¹⁰): Hedger highlighted how finance was, many times, a trigger for action as even though adequate knowledge/information may exist, without adequate resources it could not be put to good use. On being asked what the group thought were good practices or promising directions, she replied that first, creating trust funds from resources pooled in by donors would make aid more effective by limiting the proliferation of finance mechanisms that exist in some countries; second, it is important to understand how the private sector functioned and incentivise their involvement in the provision of climate finance (some Multilateral Development Banks seem to be working in this area); third, micro-finance could be an effective mechanism of finance for adaptation, provided it could effectively engage with local communities. Regarding gaps, this

⁹ This group was facilitated by Ana Bucher, the rapporteur was Clare Shakya

¹⁰ This group was facilitated by Shan Mitra, the rapporteur was Merlyn Hedger

group felt that first, getting funds down from the country to local levels remains a challenge, which could be rectified by mechanisms to distribute funds locally and by building capacity at the community level to access funds that exist; second, another grey area in adaptation financing was determining the additional costs of adaptation over business-as-usual development work; third, the capacity to absorb additional funds is an issue as there was a need to scale up delivery but there remains a continued reliance on project-funded modes of delivery. On the ways forward, Hedger said that first, serious scrutiny needs to be paid to developing pooled funding mechanisms such as the Amazon fund and the Climate Investment Funds; second, it was important for those engaged in garnering funds as well as adaptation planners to develop strategies for accessing finance from the Adaptation Fund and Climate Change Adaptation Funds under the Global Environment Facility (GEF); third, research into the applicability of advance market commitments for providing an impetus for new adaptation technologies needs to be developed; fourth, support for direct access by communities to funds needs to be built and modalities of ensuring this need to be developed. A discussion followed this and the following are some highlights:

- In work with states on action plans, there is a need to be more explicit about how financing mechanisms will work in practice (e.g., convene discussions with ministries of environment and planning).
- In certain countries, such as India, domestic sources of finance will be far more substantial and important than that from donors; therefore, there is a case for making existing, domestic development programmes (such as the MNREGA) climate smart.
- More attention needs to be paid to helping African countries leverage sources of finance for adaptation, as the procedures currently are too arduous and time consuming.

Highlights of feedback from working group on planning (Ian Tellam¹¹): This session began with a look at some barriers to effective planning and the speaker focussed on how local level absorptive capacity is a barrier to action as organisations at the community level are unable to spend the funds available usefully. Second, currently there is an emphasis on developing a framework that focuses on ‘results’ and ‘value for money’, which may sometimes be unhelpful for developing long-term, complex adaptation plans. Third, lack of effective cooperation between agencies/ministries is another impediment to effective planning as, sometimes, nodal agencies charged with adaptation are weak. With regard to methods of ensuring inter-agency cooperation, first, this group highlighted the importance of involving a range of ministries and policymakers as early on in the planning process as possible through the strategic use of well-known external advocates/speakers (as opposed to distributing publications). Second, they thought it important that planners frame any discussion of climate change adaptation in terms of it being a development issue and not a separate one. Third, the donor community could create incentives by making loans contingent on joint planning. Last, integrating with ongoing planning processes (e.g., five-year plans) is another method of ensuring this cooperation between agencies. The following are some highlights from the discussion that followed:

- It is important to not underestimate the potential role and influence of informal activities (e.g., personal relationships) in a planning process.
- Perhaps there is a need for donors to loosen some of their fiduciary risk requirements to allow greater flexibility and local level access to funds.

¹¹ This group was facilitated by Michelle Winthrop, the rapporteur was Ian Tellam

- Adaptive management could potentially be usefully employed in planning adaptation as this would insert much needed flexibility into planning processes and make room for calibrating time scales between climate impacts and their policy responses.

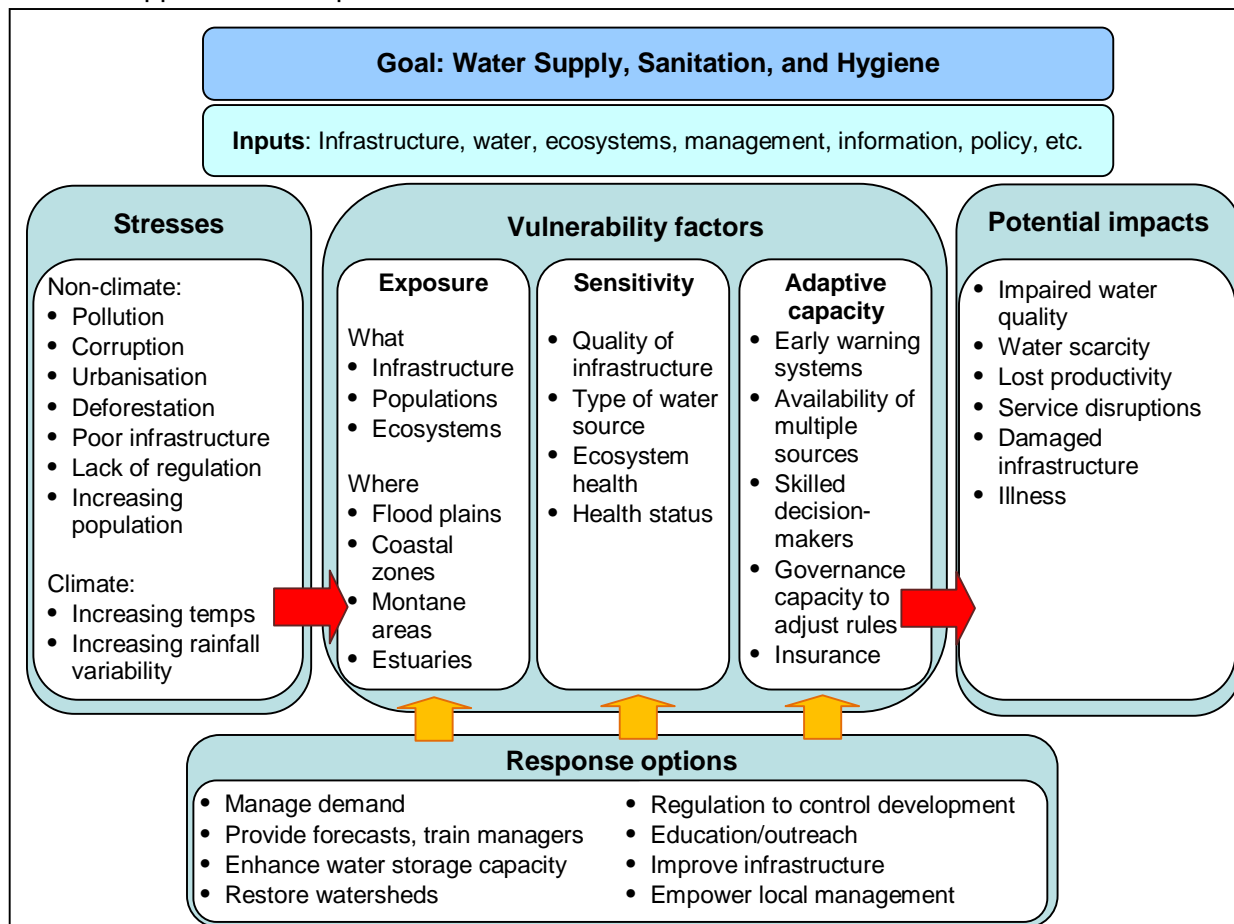
Highlights of feedback from working group on M&E (Glen Anderson¹²): Good practices for M&E were presented on behalf of the group. First, it is necessary for all M&E efforts to be firmly grounded in a clear conceptual framework and stem from a theory of change. Second, M&E should be an integral part of a plan from its very inception and not an ‘add-on’ at the end. Third, at the moment, a lot of discussion about M&E is in the context of donor plans but the real need is to ensure robust M&E practices in national and sub-national plans of various countries. Fourth, there is a need for the development of an international community of practice on M&E, which includes development practitioners. Fifth, it is important to communicate the results of M&E to a variety of audiences. The gaps in current M&E practices were also identified: first, a lot of discussion on M&E is led by donors and ownership needs to shift to actors in developing countries; therefore, the group identified a need to develop capacity for conducting M&E in partner countries. Second, methods of developing indicators for evaluating impacts of adaptation programmes are still a grey area, particularly as adaptation is a cross-cutting issue. Third, more resources need to be devoted for M&E specifically within programmes and projects. As for ways forward and necessary actions, first, it is necessary to seriously consider using adaptive management approaches as these will allow M&E to engender learning and move beyond simply tracking progress/outcomes. Second, effort is needed to test and pilot innovative M&E approaches and to share lessons. Third, linked to this previous point, there is also a need to develop and pilot test indicators for measuring progress in adaptation programmes. The highlights of the discussion that followed included the following:

- There was a discussion on the current emphasis on ‘impact assessment’ in M&E and it was understood that as it is particularly difficult to attribute particular outcomes to individual actions in adaptation interventions, this was not the most useful trend.
- It was felt that there was a need to develop the capacity of citizens within developing countries to undertake M&E as opposed to engendering a global community of expert M&E specialists.
- Currently there is a heavy donor emphasis on quantitative impact evaluation but for effective learning it is important to pay attention to qualitative methods. The need for using methods of evaluation other than just indicators, such as case studies, was felt.

¹² This group was facilitated by Nana Künkel, the rapporteur was Glen Anderson

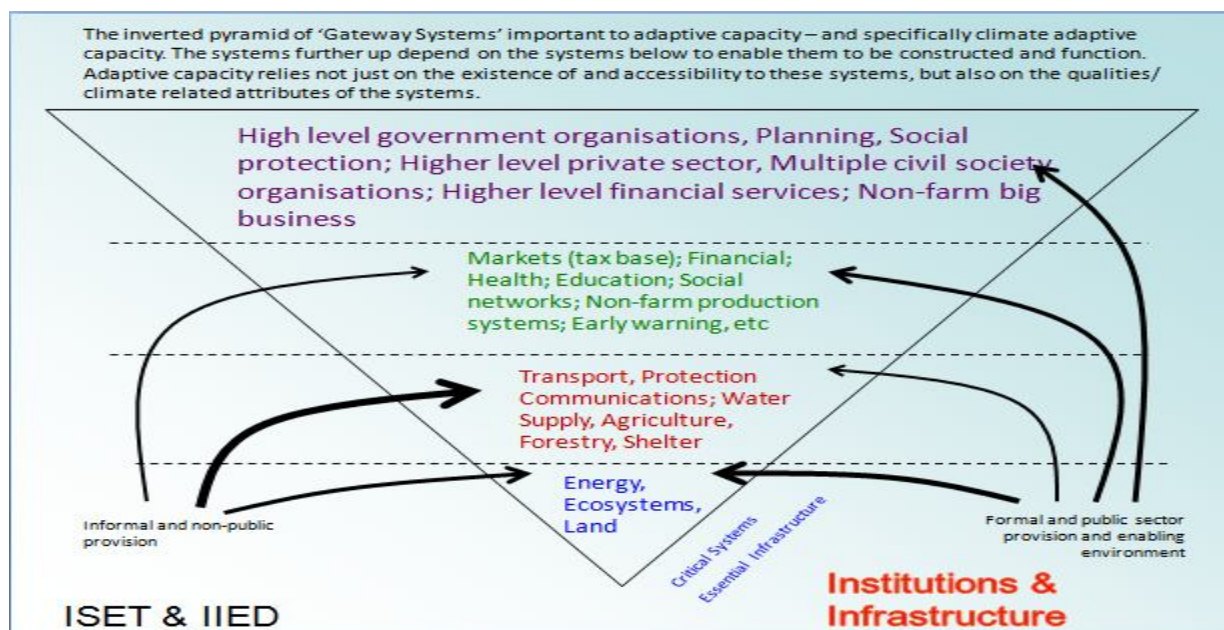
Appendix 1

USAID's approach to adaptation



Appendix 2

ISSET's conceptualisation of gateway systems.



Appendix 3

A policy-action matrix developed as part of the NCAAP

Criteria	Development Stage			
	1	2	3	4
Political		Some awareness of CC		Full political support for CCA policies
Policy	Does not exist		Legislation approved and financed	
Institutional		Framework on paper only	Roles and responsibilities understood and practiced	
Disaster preparedness	Draft document in discussion			Contingency planning in place at all levels
Recovery and reconstruction		Recovery plan outdated	Comprehensive plan in place	

Appendix 4

Lessons from the Berlin workshop

Many development efforts are at risk from climate change. Development agencies need to be able to estimate the impacts of climate change on developing countries and on aid delivery, to adjust their delivery mechanisms to address these changes. The 2009 Berlin workshop focussed on 'Guidance and Tools'. Participants considered how to improve the tools' effectiveness; they reached the following conclusions:

- Uncertainty about climate impacts needs to be managed as it is unlikely to be eradicated in the next decade.
- No-regrets and low-regrets actions overcome problems with uncertainty.
- Adaptation can proceed without better projections by focussing on the systemic factors that enable autonomous adaptation to occur.
- Cooperation between the development and scientific communities needs to be strengthened through funded partnerships.
- Decision support tools need to be transparent in their use of climate information and be quality assured to a minimum standard.
- Until donor policies are harmonised, donors will each need their own tools to evaluate their own processes.
- Common language in tool development could help avoid misunderstandings.

One of the key conclusions from the workshop was that, in addition to the science base, there needs to be an understanding of the processes of change within donor agencies. These points were incorporated in the design of the 2010 Delhi workshop.