PROCEEDINGS RE

South Asia Regional Workshop on lessons learnt in Strategy Implementation on Climate Change Adaptation in Water Sector

9 - 10 September 2014, Colombo, Sri Lanka

South Asia Co-operative Environment Programme (SACEP) in partnership with

ACKNOWLEDGEMENT

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INTRODUCTION

The South Asia Regional Workshop on lessons learnt in Strategy Implementation on Climate
Change Adaptation (CCA) in Water Sector was held on 9 to 10 September 2014 at Galadari Hotel, Colombo, Sri Lanka.

The workshop was organised by SACEP in partnership with GWP SAS and technical collaboration with National Adaptation Plan (NAP)-Global Support Programme (GSP) Team, United Nations Development Programme (UNDP).

This was gathered policy makers, researchers and practitioners of seven countries of the South Asian region together and provided a platform to share and to learn from each other on Strategy Implementation on Climate Change Adaptation in Water Sector. Approximately 30 participants representing Ministries of Environment, Water Resources and Climate Change of SACEP member countries and GWPO, GWP SAS, CEA, UNDP, IWMI and Sri Lanka Water Partnership (SLWP) attended the workshop. List of participants is given in Annex I.

Climate change is one of the most important environmental, social and economic issues facing the world today. In the Asia and the pacific region and particularly in the South Asia Sub-region, there is evidence of prominent increases in the intensity and/or frequency of many extreme events. Despite growing efforts to reduce greenhouse gas emissions, some impacts such as higher temperatures, more intense floods, droughts, wildfires, and rising sea levels are now inevitable. It must be planned for and adapt to these changes, to minimize the negative impacts and enhance the benefits to natural systems, societies, and human activities and well-being. This challenges decision making at all levels, from individuals to governments, as well as in business and industry.

The workshop was designed to provide an opportunity for the water sector to become aware of the National Adaptation Plans and start preparing to engage with the process in their countries. This means inter-alia identifying some of the sectoral and cross-sectoral issues that are relevant for the sector to consider in light of the medium term orientation of the NAP process. Some of these issues relate to better institutional coordination, building capacity for risk

analysis and appraisal of adaptation options and better monitoring. It was organized in response to the decision 10.2.14which was taken by the 13th meeting of Governing Council (GC) of SACEP held on 3 – 5 December 2013 at Islamabad and as well as the Sixteenth Meeting of the Heads of State or Governments of the Member States of the South Asian Association for Regional Cooperation (SAARC) in Thimphu, Bhutan, on 28-29 April 2010, which recognised that effective responses, both on mitigation and adaptation should be formulated and implemented at regional and international levels, declared the Thimphu Statement on Climate Change and agreed to implement number of recommendation collectively.

The objectives of the workshop were to: share experiences and assist governments in developing strategies for adaptation to climate change in the water sector; assess the information needs in the region to define such adaptation strategies; and especially to address the benefits of and mechanisms for trans-boundary cooperation in climate adaptation activities and to generate understanding of the NAPs process and how this could be potentially connected to developing strategies for adaptation to climate change in the water sector.

Scope and focus of the workshop was:

- Showcase the strength & weakness of strategy implementation in SA Countries,
- Highlight the institutional mechanisms in strategy implementation,
- How robust adaptation decision making can proceed in the face of uncertainty about climate change and its impacts.
- Explore practical adaptation policies and approaches, and share strategies for decision making from the international to the local scale.
- Introduce and examine new tools and methodologies for adaptation.

The workshop helped in cross learning on strategy implementation in country level and regional cooperation on climate change with respect of water. It was also expected to make connections between lessons learnt with broader processes such as the NAP process.

Acronyms

BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BDNAPA	Bangladesh National Adaptation Programme of Action
CC	Climate Change
CCA	Climate Change Adaptation
CEA	Central Environmental Authority
CWP	Country Water Partnership
FAO	Food and Agriculture Organisation
giz	German Development Cooperation
GSP	Global Support Programme
GC	Governing Council
GCISC	Global Change Impact Studies Centre
GLOF	Glacial Lake Outburst Floods
GWP	Global Water Partnership
GWP SAS	Global Water Partnership South Asia
IFAD	International Fund for Agricultural Development
IRS	Indus River System
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
LDCF	Least Developed Countries Fund
M&E	Monitoring and Evaluation

MoEF	Ministry of Environment and Forests
MTDF	Medium Term Development Framework
NAP	National Adaptation Plan
NAP-GSP	National Adaptation Plan – Global Support Programme
NAPA	National Adaptation Programme for Action
NCCAS	National Climate Change Adaptation Strategy
NGO	Non-governmental Organisation
SARRC	South Asian Association for Regional Cooperation
SACEP	South Asia Co-operative Environment Programme
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	UN Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
UNITAR	United Nations Institute for Training and Research
WACDEP	Global Water, Climate and Development Programme
WACREP	Water & Climate Resilience Programme
WHO	World Health Organisation

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Background

Climate change is one of the most important environmental, social and economic issues facing the world today. In the Asia and the pacific region and particularly in the South Asia Sub-region, there is evidence of prominent increases in the intensity and/or frequency of many extreme events. Despite growing efforts to reduce greenhouse gas emissions, some impacts such as higher temperatures, more intense floods, droughts, wildfires, and rising sea levels are now inevitable. It must be planned for and adapt to these changes, to minimize the negative impacts and enhance the benefits to natural systems, societies, and human activities and well-being. This challenges decision making at all levels, from individuals to governments, as well as in business and industry.

Co-hosted and convened by the SACEP and GWP SAS, the workshop on "South Asia Regional Workshop on lesson learnt in Strategy Implementation on Climate Change Adaptation in Water Sector"

was held in Colombo, Sri Lanka on 9 to 10 October 2014. This regional workshop brought together the researchers, policy makers, and practitioners in South Asia Region to share insights into the challenges and opportunities that adaptation practices, and to share strategies for decision making from international to local scale with respect of water.

The 9th GC of SACEP held in August 2005 at Thimphu, Bhutan identified the "adaptation to climate change" as one of the key areas concerned in the region and since then, it has been in the SACEP's work programme as a priority area. The sixteenth meeting of the Heads of State or Government of the member States of the SAARC held in Thimphu, Bhutan on 28 and 29 April 2010, emphasised the effective responses, both on mitigation and adaptation should be formulated and implemented at regional and international levels, as declared by the Thimphu Statement on Climate Change which agreed to implement number of recommendations. Further, the 11th GC, SACEP approved the project proposal for establishment of an Environmental Data and Information Management System for South Asia which will provide a platform to share data of all the sectors of environment including water.

DAY 1: 9 September 2014

Inaugural and Framing Session

The inauguration was held on the 9 September with the participation of Secretary, Ministry of Environment and Renewable Energy, Government of Sri Lanka; representing Honourable Minister of Environment and Renewable Energy, Director General of SACEP, Lead Technical Specialist, NAP-GSP, UNDP, Senior Network Officer of GWP for South Asia and China, Regional Coordinator of GWP SAS, representative from GWPO and GWP SAS and experts in Water Sector of the seven South Asian countries.

Photo 1: Inauguration of the meeting

The meeting was launched by singing the National Anthem and lighting the traditional oil lamp by the distinguish guests. The participants were welcomed by Mr S. M. D. P. Anura Jayatilake, Director General SACEP followed by the massage of Honourable Minister Susil Premajayantha, Ministry of Environment and Renewable Energy, Government of Sri Lanka and speech of Ms. Priyanka Dissanayake, Regional Coordinator GWP SAS. *(Photo 1)*

Inaugural Speech

Mr S. M. D. P. Anura Jayatilake; Director General SACEP conducted the inaugural speech by welcoming all to the event on behalf of SACEP. He started his speech by explaining the three objectives of the workshop to the participants. *(Photo 2)*

Mr Jayatilake described the impacts of climate change especially on the people who are suffering from poverty and also the environment; rainfall pattern, glaciers and permafrost. He explained the influences of climate change on agricultural production and availability of water and highlighted the importance of climate resilient investment to promote sustainable economic growth.

"Mainstreaming climate change adaptation into developmental planning is still in early stages in most of the countries in the South Asia. All of us need to give much attention and speed-up these processes" he said. He further said that the two day workshop will give an opportunity to discuss and share the much needed thoughts among the representing countries of the region in this regard.

Photo 2: Inauguration speech by Mr Anura Jayatilake

Speech by Hon Susil Premajayantha, M.P. Minister of Environment and Renewable Energy read by Mr B.M.U.D. Basnayake the Secretory to the Ministry.

Photo 3: Hon. Minister's speech was read by Mr B.M.U.D. Basnayake

The Minister welcomed all the delegates from South Asian countries, the experts, and officials from national agencies participating in the workshop on behalf of the Government of Sri Lanka. *(Photo 3)*

He said the meeting is a timely event referring thousands of Sri Lankan people in North Central part of the country and Hambantota, Moneragala Districts who were suffering from severe drought. In addition to the frequently discussed impacts of climate change i.e. decreased water availability, crop productivity, increased frequency and intensity of storms, and loss of biodiversity and impacts on life and livelihoods the unprecedented migration which lead to precarious security situations was brought into attention of the participants.

"In South Asia adaptation measures to adverse effects of climate change are critical to safeguard the progress made towards achieving the Millennium Development Goals and to prevent poverty levels worsening due to climate impacts" he said.
He emphasized, the climate change impacts in South Asia region, those related to water resources are most essential and all three principal classes of water-related problems – having too little water, too much water, or polluted water may get exacerbated by climate change.

He indicated that water is and should be at the centre of climate change adaptation as water is essential for many sectors while climate change has important implications on sectors especially through the hydrological changes. Therefore dealing with water is an important part of adaptation. Because of the many interlinkages, todays problems with the demands for natural resources are complex.

His message was concluded with the statement "Working together as a region is very essential and it will give more strength and save time and money".

Address by Ms Priyanka Dissanayake, Regional Coordinator GWP SAS

making her speech at the inauguration

Ms Dissanayake started her speech by giving a brief introduction to GWP and GWP SAS. She said GWP is a growing international network since 1996 currently having 13 Regional Water Partnerships and 84 Country Water Partnerships. The GWP SAS Regional Office is hosted by International Water Management Institute (IWMI), Sri Lanka which is having six Country Water Partnerships (CWPs). Those include Bangladesh Water partnership, Bhutan Water partnership, GWP Nepal, India Water Partnership, Pakistan Water Partnership and Sri Lanka Water Partnership. She said "the countries in the region are diverse in terms of water resources but there are similarities in managing them and learning from each other is important. There are 54 transboundary rivers in the region and regional cooperation is essential while Maldives is unique. Drought and floods happen at the same time and more integrated approach to water management is required to address that".

Technical Session 1 : Policy and Strategy

Chaired by Mr Anura Jayatilake – Director General, SACEP

Photo 5: Country Representatives at the technical sessions

The inauguration was followed by the two days technical sessions. First technical session was on Policies and Strategies and was chaired by Mr Anura Jayatilake, during which the chair provided an overview of the prevailing policies and strategies at national and regional levels, gaps and the needs for changes. Session's chair also emphasized the mandate given by the GC of SACEP to SACEP Secretariat on the subject area at its previous sittings since 2006. (*Photo 5)*

Three framing presentations were made to set the necessary context for the workshop.

1.1 Overview of the National Adaptation Plan (NAP) process globally – Susanne Skyllerstedt, Global Water, Climate and Development Programme GWP, Stockholm

Ms Skyllerstedt explained how GWP is responding to the climate change challenge through the Global Water, Climate and Development Programme (WACDEP). She said it is linking water, climate and economic development agendas, strengthening coordination frameworks, and enhancing coherence, finance and institutional capacity. She further explained the programme's goal and the objectives and gave some regional examples for how WACDEP assists in developing resilience to climate change. *(photo 6)*

After giving an introduction of NAP process she explained the objectives as

a) To reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience;

b) To facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate.

She discussed the development of NAP process since 2010 which was established under the Cancun Adaptation Framework. Then the NAP process was explained using a diagram consisting of four steps, laying the ground work and addressing gaps, preparatory elements, implementation strategy and reporting monitoring and review.

The NAP-GSP was established to provide support to LDCs in the efforts to advance country specific NAPs. This is a UNDP and United Nations Environment Programme (UNEP) programme with many collaborating partners, GEF Secretariat, UNFCCC, WHO, GWP, FAO, IFAD, UNISDR and UNITAR. GIZ is a collaborator.

She concluded her presentation with the lessons learnt and emerging issues based on the GSP experience.

1.2 Climate Change Impacts & Water Adaptation Strategies: Institutional Frameworks – National Enabling Environment (Water Laws and Institutes) – Mr Batu Krishna Uprety – Executive Member, JVS/GWP Nepal

Photo 7: Mr Uprety's presentation

Mr Uprety started his presentation with the key challenges in water sector and impacts of climate change in water sector; continue in shrinking glaciers, decrease in snow cover, rising sea level, increased climate-induced disasters such as floods, increased water scarcity effect on migration a special case study on marriages in Nepal, challenges to food security and possible decline in hydropower generation.

He brought the attention of the participants towards the GWP responses to these disasters via realisation of sound policies, knowledge, and action for increasing water security needs. One of the important steps that has been taken by GWP is introducing the new global strategy "Towards 2020" – focusing on achieving a global vision of water secure world. In addition he spoke about the other steps that have been taken i.e. Post 2015 Sustainable Development Goals – securing a separate goal for water, focus of United Nations Framework Convention on Climate Change (UNFCCC) and NAP process.

He concluded his presentation with these proposals, should support government institutions in integrating, designing, implementing and monitoring and evaluation of climate change

Adaptation, strengthen NGOs in providing required services to the government in enhancing capacity for integration and implementation, strengthen academe for research and human resource development to support to develop policies and strategies on climate change, encourage international and

regional bodies to further support the national governments and replicate proven technologies, encourage GWP country offices to support the government in developing policy briefs, capacity building and providing technical backstopping etc.

1.3 Identifying Opportunities for Strengthening CCA in medium-term planning –NAP process preparatory elements; Rohini Kohli, Lead Technical Specialist, NAP-GSP, Green Low Emission Climate Resilient Development Strategies, UNDP

Photo 8: Ms Kohli at the first session

She started her presentation mentioning resilience to Climate Change – a necessity since climate change can no longer be treated as only as environmental issue.

She introduced the NAP process; The NAP process was established under the Cancun Adaptation Framework (2010). It enables Parties to formulate and implement NAPs as a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs. It is continuous, progressive and iterative process which follows country-driven, gender-sensitive, participatory and fully transparent approach- UNFCCC. Objectives of the NAP Process, background, difference between NAP and NAPA, NAP process – elements and steps and mainstreaming Climate Change (CC) into existing planning were discussed by Dr Kohli.

Finally, a long list of lessons learnt was brought into the attention of the participants and key points are given below;

- Strengthen capacities of national institutions to plan, budget, track and monitor climate finance,
- Establish robust M&E systems to track and measure climate finance effectiveness,

- Link National Climate Change Policies to development planning and finance,
- It was emphasized that it is not necessary to start the process from the beginning as most of the countries have established systems upto a certain extent. The challenge is to identify them and organize them to produce an effective system at the national level. Therefore, it is vital to use the country systems and effective institutions. The key issue is to address this through the development effectiveness platform and it was suggested that GWP can play a very important role in this aspect.

Then there were a few questions directed to Dr Kohli on the practical aspects on the NAP process by different country representatives. By answering those she said in the NAP training processes it is important to involve all the relevant Ministries of the Governments if it is possible and always better to allocate separate funding for the process to be carried out in the country.

Technical Session 2 : Country Strategy and Institutional Framework

Chairperson: Rohini kholi
Implementation Experience of CCA strategy and institutional mechanism:
lessons & recommendations,

2.1 Climate Change of Bangladesh: Adaptation Strategy and Implementation

Mohd. Nayeb Ali, Senior Assistant Secretary, Ministry of Water Resources
Md. Zakir Hossain, Senior Assistant Secretary, Ministry of Environment and Forests (MoEF), Bangladesh

Photo 9: The presentation is being done by Bangladesh representatives

Both representatives e discussed the impacts of Climate Change in Bangladesh; increase in temperature, irregularities in monsoons with untimely rainfall, increased river flow and inundation during monsoons, heavy rainfall over short period causing water logging, increased frequency, intensity and recurrence of flooding, crop failure due to drought, prolonged cold spell and salinity intrusion along the coast.

The details of Bangladesh National Adaptation Programme of Action (BDNAPA) were presented by the representative of MoEF which was initiated as a response to the decision of CoP 7 of UNFCCC. About 15 projects were presented that have been launched by the Government of Bangladesh to overcome the challenges of Climate Change. Those include projects of capacity building, information dissemination, construction of flood centre, mainstreaming CC in policies and programmes, enhancing urban infrastructure, researches on drought/new crop varieties, coastal crop agriculture to combat increasing salinity, adaptation of agricultural systems to areas prone to flash floods, culture of salt tolerant fish and exploring options for insurance facilities to climate related disasters.

They have reiterated the need to take urgent steps to implement the above listed projects and to mobilize resources from LDCF Adaptation Fund and other bilateral and multilateral sources.

2.2 Dr Muhammad Zia ur Rahmanm Hashmi
Senior Scientific Officer Global Change Impact Studies Centre (GCISC) Islamabad, Pakistan

sentation

After giving a brief introduction to the water resources in Pakistan, he brought the attention of the participants on climate change impacts in Pakistan. Those include, rapid melting of HKH glaciers and its implications for; average annual river flows, pattern of seasonal flows, inter annual variability of flows, increased number of GLOF events, increase in frequency and intensity of extreme precipitation events and its implication for floods and droughts and sea-level rise and its implications. *(Photo 10)*

He discussed the water resources adaptation strategies in Government of Pakistan. The ongoing activities are,

- increasing of reservoir capacity on Indus River System (IRS) by construction of few large hydropower dams by 2030,
- local rainwater harvesting,
- adoption of stringent demand management and efficiency improvement measures in all water-use sectors particularly in the supply, distribution and use of irrigation water,
- re-use of marginal quality irrigation effluent,
- development of capacity to deal with disasters such as floods, droughts and cyclones.

The audience was enlightened with the three significant steps which were taken by the Government of Afghanistan in climate proofing which are elaborated below;

- Proper lining of the canal system (According to a WAPDA Report more than 5 MAF of irrigation could be saved by lining of minor canals and addition 3.6 MAF could be saved by improvement of water courses,
- Government of the Punjab has introduced modern telemetry system to check and control water theft by the farmers,
- The Medium Term Development Framework (MTDF) 2005-2010 proposes a water conservation strategy,

- adoption of integrated approach, rational resource use, and the introduction of water efficient techniques,
- improving performance and utilization of local systems through better planning, management and community participation,

2.3 Steps Taken on Climate Change Adaptation – Mr Abdul Baqi Noori and Naeem Hunrri, Afghanistan

Photo 11: The Afghanistan presentation

ghanistan with the special focus on its natural resources including water, energy sources and biodiversity etc. *(Photo 11)*

They have also discussed some important proposed climate change adaptation projects of the country,

- Land and Water Management at the watershed Level,
- Development of Horticulture,
- Improved terracing, agro-forestry, agro-silvo pastoral system and rehabilitation of Forest for Mitigation of Gas Emission.
- Range land management,

- Improved Food Security,
- Creation of Off-form employment,
- Climate related research, early warning system and agriculture research,
- Data format preparation for GHG reporting,
- Climate change and crop insurance,
- Ecosystem modeling,
- Technology information centre

Technical Session 3 : Country Strategy & Institutional Framework

3.1 Sri Lanka Ms Nirosha Kumari Climate Change Secretariat, Ministry of Environment and Renewable Energy

n on Sri Lanka

Ms Kumari said being a tropical Island, Sri Lanka is highly vulnerable to adverse impacts of Climate Change. She further discussed the National Climate Change Policy of Sri Lanka and National Climate Change Adaptation Strategy (NCCAS) for Sri Lanka (2011-2016).

Sri Lanka is currently in the process of preparing NAPs on;

- Food security : agriculture, livestock and fisheries
- Health and diseases
- Water resources
- Coastal and marine resources
- Ecosystems and biodiversity: forestry, wildlife
- Human settlements and infrastructure
- Industry energy and transportation
- Tourism and recreation
- Export development sector
- Energy security and livelihoods

She further elaborated on projects which are currently ongoing in the country.

- The Project on addressing Climate Change Impacts on marginalized Agricultural Communities living in the Mahaweli River Basin of Sri Lanka funded by Adaptation Fund /WFP,

- Project on Strengthening the Resilience of Post Conflict Recovery and Development to Climate Change Risk in Sri Lanka funded by UNDP,
- Disaster Risk Management Development Policy including Improving Climate Resilience Programme funded by World Bank,
- Technology Need Assessment funded by UNEP/GEF,

She has presented a few recommendations of which need to be focused in the future. Incorporation of Climate Change Policy and Adaptation Strategy to other sectoral policies and strategies and development plans, strengthening the institutional framework for Climate Change, conducting a vulnerability assessment in the North and Eastern Provinces and Central Highlands and updating the existing vulnerable profiles, developing capacity, developing mechanisms for data sharing and information flow.

3.2 Implementation Experience of CCA strategy and institutional mechanism: lesson and recommendation -Jigme Nidup and Dorji Dema, National Environment Commission, Bhutan.

Photo 13: The Bhutan presentation

After giving a brief introduction to water resources in Bhutan, vulnerabilities to floods, droughts, wind, thunder storms and land degradation were explained by the two presenters. It was identified that there are a few Environment related Policies and laws are present in the country.

Adaptation Activities (NAPA Projects 2012) especially Reducing Climate Change-induced Risks and Vulnerabilities from Glacial Lake Outburst Floods (GLOF) in the Punakha-Wangdi and Chamkhar Valleys was introduced was introduced with its outcomes.

Currently the country is in the process of updating the NAPA with new projects.

The way forward,

- National Climate change strategy is in pipeline,
- Water regulation is in pipeline,
- Completed water resources inventory for the whole country,
- A National Integrated Water Resources Management Plan and River Basin Management Plan shall be formulated for coordinated development, management, conservation and efficient use of water resources within 2013-2018,
- To adapt the AWDO Approach and define AWDO data requirement.

3.3 Lessons learnt in Strategy Implementation on CCA in water Sector - Ms Hawwa Ageela and Mr Mauman Abdul Rasheed, Ministry of Environment and Energy, Republic of Maldives

Photo 14: Maldives representatives doing their presentation

the country and its water resources. In Maldives, groundwater is a scarce resource because of hydrology and annual average rainfall is more than 1900 mm. Rainwater is widely used in the islands and accounts for more than 94 per cent use and desalinated water is supplied to household in Male' and few islands for domestic purposes. *(Photo 14)*

Water scarcity during dry season is inevitable for the Islands without piped network or well established back-up community storage. The Government is strategically implementing the adaptation methods to overcome the dry season impacts. These

includes continue in establishing RO plants with piped networks for Islands with larger population (above 2000) and implementing community storage tanks with Tap bay for Islands with population less than 1000. In addition, an innovative solution for sustainable water supply which best suites with Maldives was introduced; establishment of a sustainable freshwater supply system that incorporates and integrates rainwater harvesting and desalination technology with the use of renewable energy sources, known as the "Integrated water resources Management(IWRM) approach". The country meets with issues and challenges in implementing the new approach which includes, expensive to monitor and manage services effectively for all islands due to dispersed population, lack of institutional and financial capacity for establishment, operation and management of water and sewerage services and lack of regulatory framework, guidelines and standards.

DAY 2: 11 September 2014

Technical Session 4: Participatory Session
Facilitated by Mr Batu Uprety

The participants were devised into two groups to discuss and present on the different types of adaptation planning and practices related to water resources at different levels.

Group 1 was discussing about the National level (National planning of IWRM plans, policies and strategies) whereas Group 2 was on Basin Water Management (functions of water management at National Level). The discussion were based on the following issues,

- Current adaptation planning and practices related to water resources, including IWRM plans, policies and strategies,
- Lessons learned (good practices, gaps and needs), from ongoing adaptation initiatives in each country, sector and region.
- The key opportunities and key challenges to integrate NAPs into the national development processes in each country.

Group 1

The group 1 identified the below are the challenges to integrate NAPs into the national development processes;

- Financing,
- Lack of awareness and capacity regarding CAP to national policy makers,
- Absence of institution to take lead role,
- National and sectoral Priorities,
- Political and social influences,
- Lack of cooperation among the stakeholders,
- No proper monitoring and evaluation mechanisms.

Group II

The undermentioned opportunities and challenges were very common between the participating countries and were highlighted by this group..

Opportunities;

- Availability of International collaboration,
- Some policies and guidelines to address CC are in place i.e. NAPA, BCCSAP, Water Act 2013, BCCTF,
- To conduct more frequent climate change debates among national stake holders to include NAP into nation development process,
- Should enhanced private sector participation in provision of water, which helps Governments' to become a regulators or facilitators.

Challenges

- Lack of capacity and technical expertise,
- Security issues at some places
- Limited funds,
- natural calamities,
- Lack of information/data,
- Absence of institutions to take up the lead role,
- Geographical distribution of Maldivian islands,
- Increasing in population.

In both the presentation, based on the NAP poster the country representatives have shared an update about each country's position in the NAP process to the participants. *(Photo 15)*

Technical Session 5: Tools and Methodology
Chairperson: Angela Klauschen, Senior Network Officer, Global Water
Partnership (GWP), Stockholm
5.1 Localising Climate Change Adaptation in Water Sector: A Case of Nepal Batu Krishna Uprety – Expert Member, Climate Change Council and the Chair, Least Developed Countries Group Expert Group (LDG), Nepal

Technical Session 5: Tools & Methodology

5.1 Climate Change Impacts in water sector: localized adaptation and integrate water focused adaptation into planning process with case of Nepal by Batu Krishna Uprety. It was stressed that the success of adaptation planning depends on followings;

- Government should take the lead and support to mainstream the actions of adaptation,
- Building on existing systems is helpful for quick implementation and integration,
- Engagement of multi-sector and multi-stakeholders is essential for ownership and sustainability,
- Flexible implementation approach provides multiple opportunities to be responsive to the local context,
- Training or orientation and sharing of good practices enables local communities to successfully implement activities for livelihood improvement,
- LAPA also provides other agencies a platform/basis to support climate vulnerable communities to adapt to climate change.

He also gave an example "Lamatar LAPA", Lamatar is a small VDC in the Kathmandu Valley with 1345 hectares of land and about 9,030 population.

He highlighted the proposed adaptation actions in Nepal as rainwater harvesting, conservation of streams, construction of water collection tanks, seeking for new water sources,

conservation and management of remaining water resources and waste and sewage management.

5.2 Strategies and activities: Linking river basin management adaptation activities to national and regional climate change adaptation-Dr Herath Manthrithilake, Head, Sri Lanka Development Initiative, International Water Management Institute (IWMI), HQ, Colombo, Sri Lanka

Dr Manthrithilake elaborated the climate change and its consequences.

He said the lfirst linkage to CCA is Data Management which includes collection, validation, storing, sharing and updating. He gave the example of rough Monitoring Approach and explained different levels of user/access management which can be done to control the access to data.

The second linkage is Policy coherence in national, trans-basin and regional levels.

The final linkage is knowledge sharing; networking, data /information exchange, lesson learned / learning from each other, best practices and managing emergencies.

He concluded his presentation saying that these strategies and activities are not easy but needs to be done to accomplish the ultimate goad, which is climate change adaptation in national and regional level.

Discussion

An interactive discussion session with the participants took place to share lessons learnt, good practices and further needs. In the final session of the second day, Participants made recommendations for potential further action on possible climate change adaptation in water sector at regional level. The workshop concluded with summary of the proceedings by the Director General of SACEP.

Analysis of key issues addressed at the workshop

Participants shared key issues related to the vulnerability of freshwater resources and the impacts of climate change on freshwater resources, related sectors and ecosystems. Climate change poses a major challenge to water managers and users as

well as to policymakers at different levels. Given the intrinsic linkage between freshwater resources and other sectors and ecosystems, increased vulnerability of freshwater resources owing to climate change may affect, inter alia, the following: ecosystems and biodiversity; agriculture and food security; land use and forestry; water supply and sanitation; health; urban settlements and infrastructure; and energy supply and electricity generation.

Impacts on regional water availability and accessibility could lead to regional water crises, resulting in destabilization, violence and conflict, which would affect poor and vulnerable people the most. Assessment of climate change impacts on water resources at the basin or catchment level allows for a comprehensive assessment of social, ecological and economic pressures.

Population growth, land-use change, demographic change, including migration, and urbanization are among several social stressors that exacerbate the vulnerability of water resources and have concomitant impacts on water availability and access. Climate change and variability therefore act as exacerbating agents on existing vulnerability. Without effective institutions and adaptive management practices, vulnerable countries will continue to experience adverse climate change impacts. Transboundary cooperation is also crucial to limit the vulnerability of water resources.

Adaptation strategies may include different components: integrated water resources management (IWRM), risk assessment and analysis; improving methods, management and decision-making capacity; and engaging decision makers and policymakers, practitioners, researchers and vulnerable communities, among other stakeholder groups.

Resilience-building involving a combination of bottom-up and top-down approaches, early warning systems and disaster risk management strategies offer development benefits in the short to mid-term and reduce vulnerability over the long term.

Possible next steps

It is crucial to enhance the establishment of data information systems through data platforms, clearing houses and metadatabases on observational data.

Exchange good practices from multiple levels, in particular those that have the potential to be scaled up and that are science- and evidence-based;

Exchange experience on transboundary and regional cooperation in adaptation. Greater sharing of information regarding (successful) adaptation measures as well as scientific data on climate variability is needed and can be promoted through regional knowledge centres and networks.

Annexure

Agenda

South Asia Regional Workshop on "Lessons Learnt in Strategy Implementation on Climate Change Adaptation in Water Sector"
9-10 September 2014
Colombo, Sri Lanka
AGENDA

Day 1
9 September 2014

Time	Session Details
08:30-09:00	Registration
09:00-09:45	**Inaugural & Framing Session** - *National Anthem* - *Lighting of Oil Lamp* - *Welcome address – SACEP* - *Address by GWP* - *Address by the Chief Guest, Hon' Susil Premajayantha, M.P. Minister of Environment and Renewable Energy*
09:45-10:15	Tea Break
10:15-12:30	**Technical Session 1 : Policy & Strategy** **Chairperson : Mr. Anura Jayatilake – Director General, SACEP** *Overview of the National Adaptation Plan (NAP) process globally –* *Susanne Skyllerstedt, Global Water, Climate and Development Programme Global Water Partnership (GWP), Stockholm - 30 minutes* *Climate Change Impacts & Water Adaptation Strategies : Institutional Frameworks – National Enabling Environment (Water Laws & Institutes)* *Batu Krishna Uprety – Executive Member, JVS/GWP Nepal – 30 minutes* *Identifying Opportunities for Strengthening CCA in medium-term planning – NAP process preparatory elements* *Rohini Kholi, Rohini Kohli, Lead Technical Specialist, National Adaptation Plan - Global Support Programme (NAP-GSP), Green Low Emission Climate Resilient Development Strategies, UNDP - 30 minutes* **Discussion -30 minutes**
12:30-13:30	Lunch
13.30-15.10	**Technical Session 2 : Country Strategy & Institutional Framework** *Each country to make a 20 min. presentation followed by discussion* **Chairperson: Rohini kholi**

	Implementation Experience of CCA strategy and institutional mechanism: lessons & recommendations, ***Representative*** *Bangladesh* ***Representative*** *Pakistan* ***Representative*** *Afghanistan* Discussion -20 minutes
15:10-15:30	Afternoon Tea
15:30-17:15	**Technical Session 3 : Country Strategy & Institutional Framework** ***Each country to make a 20 min. presentation followed by discussion*** **Chairperson: Mr. Batu Uprety** ***Implementation Experience of CCA strategy and institutional mechanism: lessons & recommendations,*** *Presenters:* ***Representative*** *Sri Lanka* ***Representative*** *Bhutan* ***Representative*** *Maldives* ***Discussion - Wrap-up -20 minutes***
19.00	**DINNER**

Day 2

10 September 2014

Time	Session Details
08:30-11:00	**Technical Session 4 : Participatory Session** **Facilitated by Mr. Batu Uprety** *Breakout groups on different types of adaptation planning and practices related to water resources at different levels.* **Group 1:** National level (National planning of IWRM plans, policies & strategies) **Group 2:** Basin Water Management (functions of water management at National Level) Each breakout group will address the following issues: ▪ Current adaptation planning and practices related to water resources, including IWRM plans, policies & strategies, • Lessons learned (good practices, gaps and needs) • Two questions to link up with the NAP process which can connect adaptation planning to national plans and public investments (Questions will be given at the session)
11:00-11:30	Tea Break
11:30-12:00	**Presentation by each group: 15 minutes**

12:00-13:00	Lunch Break
13:00-14:00	**Chairperson: Angela Klauschen, Senior Network Officer, Global Water Partnership (GWP), Stockholm** **Technical Session 5 : Tools & Methodology** *Climate Change Impacts in Water Sector: localized adaptation and integrate water focused adaptation into planning process with case of Nepal* *Batu Krishna Uprety – Expert Member, Climate Change Council & the Chair, Least Developed Countries Group Expert Group (LDG), Nepal – 30 minutes* *Strategies and activities : Linking river basin management adaptation activities to national and regional climate change adaptation* *Dr. Herath Manthrithilake, Head, Sri Lanka Development Initiative, International Water Management Institute, HQ, Colombo, Sri Lanka* *Discussion*
14:00-14:30	**Closing Remarks by: Director General, SACEP**
14:30	Tea

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