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#### ELECTRONIC

Electronic communication and technology can be used to map and take stock of regional and international institutions, networks and projects to facilitate awareness and coordination of adaptation actions, enhance synergies and ensure that needs are fulfilled.

The internet is a useful resource for sharing climate change adaptation knowledge across internet platforms and linking this with geographic information systems. The NWP aims to be the central knowledge sharing hub and learning platform on adaptation planning for all partners to assist this learning process.

In addition to the web resources offered by the NWP,<sup>199</sup> a number of organizations are playing an important role in knowledge sharing on adaptation for decision making. Examples include the work identified under the NWP by partners, to assist in education and knowledge sharing on adaptation (Box V-6).

#### LEARNING AND EDUCATION

Training for stakeholders could increase understanding and knowledge exchange on climate science and model output, decision making, consequences of climate change adaptation for sustainable development, costing, practices and lessons learned.

The International Environment and Disaster Management (IEDM) of Kyoto University’s Graduate School of Global Environmental Studies has pledged to focus on improving knowledge generation and provision of expert advice and technical assistance on DRR and climate change adaptation in Asia. It aims to compile principles, case studies, good practices of community based adaptation, DRR and indigenous knowledge, increase North-South and South-South cooperation among the universities and research organizations in Asia and incorporate climate change adaptation in educational programmes/curriculum in the region. CATHALAC has designed the Regional Master’s degree in Climate Change from the Latin American perspective, and submitted this as a NWP action pledge. The degree aims to train professionals to develop solutions and long term sustainable development projects in order to reduce vulnerability, propose adaptation measures and mitigation strategies customized to the local context in this region. Suntory Limited, a NWP private sector partner, has recently opened the Suntory School of Forest and Water to provide environmental education for elementary school children.

<sup>197</sup> <<http://www.redciudadesclima.es/index.php>>.

<sup>198</sup> <[http://unfccc.int/adaptation/nairobi\\_work\\_programme/partners\\_and\\_action\\_pledges/items/5005.php](http://unfccc.int/adaptation/nairobi_work_programme/partners_and_action_pledges/items/5005.php)>.

<sup>199</sup> <<http://unfccc.int/nwp>>.

**Box V-6. Examples of knowledge sharing for adaptation decision making**

**Institute of Development Studies (IDS)** – hosts a suite of knowledge services to help development research and knowledge reach those who can use it to reduce poverty and injustice.<sup>200</sup>

- (1) The Eldis Climate Change Resource Guide<sup>201</sup> acts as a focal point for all climate change knowledge services from IDS. This coordination has extended beyond IDS to harmonise with the Adaptation Learning Mechanism (ALM) themes and the IDRC supported AfricaAdapt network to enable content sharing between platforms.
- (2) Frontline Knowledge<sup>202</sup> – aims to provide online resources for contributing to and accelerate learning related to climate change adaptation by synthesising knowledge and experiences related to a relevant theme. The first theme chosen was linkages between DRR and Climate Change Adaptation.
- (3) Community Based Adaptation Exchange<sup>203</sup> – an interactive shared online resource designed to bring together and grow the CBA community. It provides a site for the exchange of up-to-date information about community-based adaptation, including news, events, case-studies, tools, policy resources, and videos.
- (4) AfricaAdapt – in cooperation with three African partner institutes ENDA, FARA and ICPAC, to provide a bilingual knowledge sharing network on climate change adaptation in Africa. The network uses collaborative online technologies, print and radio, and face-to-face gatherings for sharing resources; facilitating learning; and strengthening the African adaptation community.

**Stockholm Environment Institute (SEI)** – has developed the weADAPT<sup>204</sup> platform which provides guidance by pooling expertise from a wide range of organizations that contribute to adaptation science and practice. Features include tools and methods, data sets and guidance for planning adaptation. The platform includes the wikiADAPT tool which is highly collaborative and based on the sharing of experiences and co-production of knowledge by all users of the site.

**UNDP** – Adaptation Learning Mechanism<sup>205</sup> is a knowledge sharing platform that aims to map good practices, providing information, building knowledge and networks on climate change adaptation.

**UNEP Global Climate Change Adaptation Network** – UNEP, in partnership with the NWP and other organizations such as CGIAR, Chinese Academy of Sciences, Columbia University (IRI), IGES, IIED, ILTER, IUCN, Keio University, Korea Environment Institute, National Institute of Environmental Research (Korea), SEI, UNDP, UNFCCC Secretariat, UNITAR, WMO, WWF and others has developed a Global Climate Change Adaptation Network which will consist of a series of selected ground facilities, regional centers and an international support group of technical institutions, building upon existing networks of facilities and centres. The Network aims to enhance knowledge sharing and capacity-building on adaptation to meet the increasing needs (both immediate and long-term) of developing countries for adaptation data, knowledge, technology and policy support.

**UNESCO-IHE Institute for Water Education**

UNESCO-IHE is a postgraduate institute for water education, focusing on developing countries and countries in transition, that aims to integrate climate change into its teaching and research.<sup>206</sup> It collaborates closely with the Co-operate Programme on Water and Climate on training and education.<sup>207</sup>

## PUBLIC AWARENESS

The importance of public awareness on climate change and adaptation is widely recognized. At the community and individual level this includes improved weather warnings, understanding of climate impacts, knowledge of ways to improve current livelihood and/or alternative livelihood options.

The NWP partner organization Satkhira Unnayan Sangstha (SUS) is working to improve understanding and awareness of the south-west coastal community in Bangladesh on climate change related variability, extreme events and its impacts on their lives and livelihoods. It aims to raise public awareness on climate change issues and impacts in these communities so that:

- The south-west community of Bangladesh will be more responsive about climate change issues.
- School children and adolescents are aware about climate change and natural disasters.
- Local or community based adaptation or practices are documented, and disseminated regularly to the community and different stakeholders.

Practical Action is working to increase the understanding of communities through video-based learning. DVDs of Practical Action's work on DRR through strengthening livelihoods are being prepared for wide circulation on the YouTube website, as well as on Practical Action's website.

Public awareness raising is also important at national, regional and international level to ensure understanding of and integration of climate change adaptation and DRR into decision making. A range of NWP partners have included public awareness raising in their activities and action pledges. For example, Christian Aid is lobbying governments to raise awareness of climate change issues. ICLEI – Local Governments for Sustainability through its Resilient Cities 2010 project aims to provide a global forum for exchange, learning, networking, debating and policy making on approaches and solutions for climate change adaptation and resilience building in cities.

## CAPACITY-BUILDING THROUGH RESEARCH

Further research is needed on climate change impacts, vulnerabilities and adaptation, in all sectors, particularly in regards to the socio-economic effects on communities as well as cross-sectoral issues. This research would help guide decision making at all levels. Partners are carrying out work in this regard under their action pledges.

For example the International Union of Forest Research Organizations aims to contribute to the NWP by (i) providing a global assessment of scientific information about the impacts of climate change on forests, their implications for human wellbeing, and options for adaptation, (ii) effectively disseminating the assessment results to policy makers, stakeholders and the public, and (iii) developing follow-up activities supporting the objectives and activities of the second phase of the NWP. ICRIAT's action pledge is based on a range of on-going climate risk and adaptation research projects in the semi-arid tropics of Sub-Saharan Africa and Asia. One example is Community management of crop diversity to enhance resilience, yield stability and income generation in changing West African climates. The Commonwealth Scientific and Industrial Research Organisation's (CSIRO) Climate Adaptation Flagship contributes, through a range of inter-related research projects, to enhance the Asia-Pacific region's effort in adaptation to climate change through informing planning, regulation and investment decisions.

Under the NWP private sector initiative, Caisse des Dépôts reported its international research programme on adaptation, launched in 2008 and focussed on designing and funding infrastructure. The international research programme addresses five themes (North-South problems; cities and local government; water, agriculture and forests; industrial infrastructure; and the financial sector) as well as economic and financial instruments.

<sup>200</sup> <<http://www.ids.ac.uk/go/knowledge-services>>.

<sup>201</sup> <<http://www.eldis.org>>.

<sup>202</sup> <[http://wikiadapt.org/index.php?title=Frontline\\_Knowledge\\_Explorer](http://wikiadapt.org/index.php?title=Frontline_Knowledge_Explorer)>.

<sup>203</sup> <<http://www.cba-exchange.org>>.

<sup>204</sup> <<http://www.weadapt.org>>.

<sup>205</sup> <<http://adaptationlearning.net>>.

<sup>206</sup> <<http://www.unesco-ihe.org>>.

<sup>207</sup> <[www.waterandclimate.org](http://www.waterandclimate.org)>.

## 5.5. ADAPTATION PLANNING AND PRACTICE AND SUSTAINABLE DEVELOPMENT

Climate change impacts have the potential to push developing countries back into the poverty trap, and to undo many achievements that have been made towards attaining development goals including the MDGs (Table V-6, UNFCCC 2007a). Future vulnerability depends not only on the magnitude of climate change but also on development pathways. Sustainable development in turn can reduce vulnerability to climate change and assist adaptation by increasing resilience to climate change impacts.

In order to achieve effective implementation of adaptation, it is important that it is integrated into the national and international sustainable development priorities and national and sectoral development plans.

Many countries are starting to take concrete action on adaptation to climate change and integrating adaptation into planning (FCCC/SBSTA/2007/MISC.10 and Add.1, FCCC/SBSTA/2009/MISC.4).

A number of organizations have reported on their work related to adaptation action to support sustainable development in many countries. For example, UNDP assists countries to strengthen domestic policies and practices, and/or adopt new ones, so as to achieve MDGs in the face of climate change and its associated impacts. As part of the programme 'Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa', UNDP will support 21 countries in implementing integrated and comprehensive adaptation actions and resilience plans. The USD 92.1 million initiative is funded by the Government of Japan and seeks to ensure that national development processes incorporate climate change risks and opportunities in order to secure development gains under a changing climate. UNDP helps countries establish an enabling environment and develop the capacity required to design, finance, implement and monitor long-term and cost-effective adaptation policies and plans.





## VI. KEY MESSAGES AND LOOKING FORWARD

*Adaptation is an essential pillar of any comprehensive policy response to climate change. Given the context-specific nature of adaptation, learning by doing can enhance our understanding of the adaptation process and build the knowledge base to facilitate effective adaptation actions.*

Adaptation to the impacts of climate change will continue to be a necessity for all countries, particularly developing countries, especially the LDCs, SIDS and countries in Africa suffering from drought, desertification and floods.

The adaptation policy context, information base, assessment process and planning and practices explained in this publication, including the valuable experiences gained, and gaps, needs and opportunities identified, can be used to support the implementation of adaptation action as part of an enhanced adaptation response in the future.

*The NWP has played a significant catalytic and facilitative role in promoting stakeholder engagement, knowledge sharing and learning, and targeted adaptation actions.*

Through a wide range of submissions, workshops, expert meetings, stakeholder involvement and links with other UNFCCC processes, the NWP has helped identify gaps, needs, opportunities and possible further actions that could be carried out to advance actions on adaptation. The NWP has engaged organizations, institutions and businesses at all levels and in a large range of sectors as well as adaptation experts through action pledges<sup>208</sup>. Calls for action<sup>209</sup> catalyze adaptation activities at international, regional, national and subnational levels. These have enhanced efforts for adaptation between partners and on the ground (UNFCCC 2009h).

*Although substantial progress has been made, opportunities for further progress remain.*

Important opportunities include: maintaining and enhancing communication and exploiting opportunities for collaboration on efforts and sharing of practices between Parties and stakeholders, between sectors, and across levels; bridging data gaps, making provisions of relevant data, information and knowledge at all levels in particular traditional knowledge, tools and methods, and good practices and practical lessons learned; building capacity for the ongoing implementation of adaptation

across all sectors and levels, including ensuring appropriate education and training opportunities and research efforts to continue developing the adaptation knowledge base; and continuing the integration of adaptation activities into sustainable development efforts. Rising availability of financial resources, in particular for developing countries, is crucial. Increased investment in adaptive capacity, such as strengthening the ability of countries to reduce disaster risk, will safeguard economic progress already made, and enable climate-resilient development.

*Looking to the future, much progress can be made with political momentum, increasing interest from the public and private sectors, as well as enhanced investment.*

The growing level of public awareness and stakeholder engagement could further catalyze investment and targeted actions. Lessons learned and good practices from early adaptation actions are now more visible and can provide much needed evidence-based knowledge sharing and learning opportunities for adaptation. With strengthened public-private sector partnerships, the private sector is well supported and is ready to play an important role in advancing the adaptation agenda through a wide variety of actions including being adaptation champions, and providing crucial investment in climate risk management schemes.

Other initiatives under the UNFCCC processes, and the UN at large, are further supporting the adaptation information base, adaptation assessment, and planning and practice, including research, technology and capacity-building. This includes the development and implementation of a new Global Framework for Climate Services (GFCS), adopted at WCC-3, the research dialogues under the UNFCCC, TT-Clear, the UN Delivering As One on adaptation across all organizations and agencies (UNFCCC 2008e) and work with LDCs (UNFCCC 2009d).

Looking to the future, an enhanced future adaptation regime will benefit from an expanded knowledge sharing and dissemination system, as well as further engagement of organizations. The NWP has successfully created a network of partners and stakeholders and a substantial knowledge base, and is poised to respond to the evolving needs of countries in the context of an enhanced future adaptation regime.

<sup>208</sup> <<http://unfccc.int/5005.php>>.

<sup>209</sup> <<http://unfccc.int/4430.php>>.



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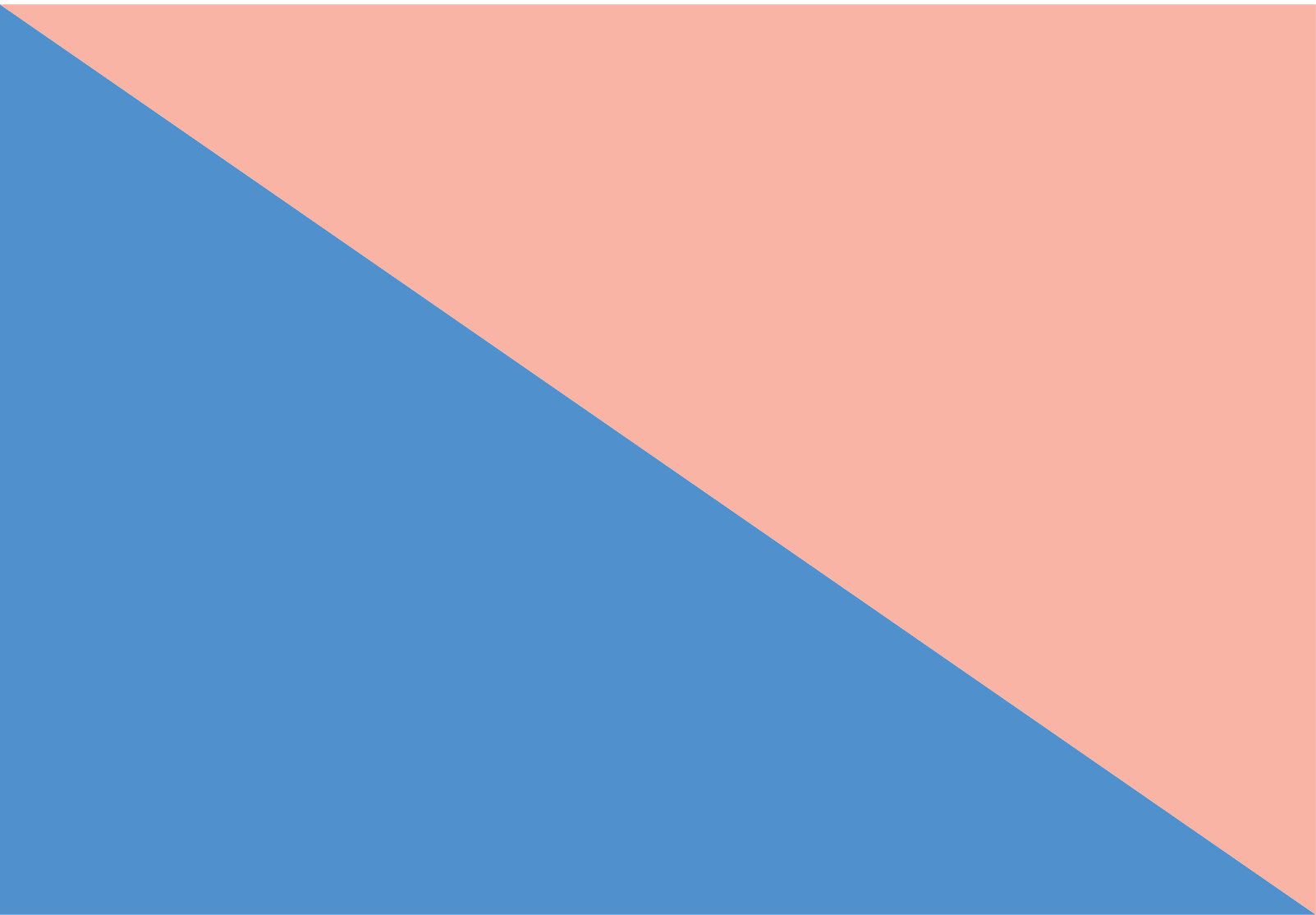
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