water and climate coalition

Towards A Work Programme on Water and Climate under the UN Framework Convention on Climate Change

A Discussion Paper by the Water and Climate Coalition

November 2010

Executive Summary

As part of its core advocacy messages, the Water and Climate Coalition is calling for the establishment of a work programme on water and climate under the UN Framework Convention on Climate Change (UNFCCC). The proposed functions of the work programme are as follows:

Discourse: Improving the global policy discourse on water and climate change – a work programme under the UNFCCC offers a space to 'embed' the water and climate discourse at an intergovernmental level, leading to improved understanding of the relationship between water and climate change.

Principles: Establishing guiding policy principles on water and climate change – the work programme will bring Parties together to coordinate and agree guiding policy principles on water and climate change which would be presented as recommendations to the COP. The policy principles would also help to guide the financial mechanism of the Convention.

Finance: **providing advice and guidance to the climate change funds** – the work programme would include an expert thematic advisory panel on water and climate change which would provide relevant and up-to-date information and analysis to the funds, including an assessment of the cost effectiveness of investing in water management.

Implementation: developing resources and tools, conducting analysis and capacity building to advance water and climate priorities – the work programme would include a focus on activities to enhance implementation. This would include developing resources, co-ordinating workshops and facilitating knowledge exchange.

Coherence: promoting synergies between global agreements and mechanisms on water and climate – the work programme would identify other Conventions and multilateral agreements that are relevant to water and climate change and promote the implementation of the provisions of these agreements. This would ensure coherence across the multi-lateral system and promote integration.

The work programme is being proposed as part of a broader range of 'policy asks' being put forward by the Water and Climate Coalition as part of its advocacy, outlined as follows[1]:

- The establishment of a work programme on water and climate under the Convention
- Recognition of the importance of water management for climate change adaptation through the negotiations on adaptation under the UNFCCC
- A thematic focus on water through the Nairobi Work Programme
- Finance for climate change adaptation and mitigation that is managed through the UNFCCC should be guided by criteria that promote the sustainable management of water resources to build resilience to climate change

[1] These broader proposals are outlined in the Water and Climate Coalition's document: 'Key Asks for COP16' - http://www.stakeholderforum.org/fileadmin/files/WCC%20Key%20Asks%20for%20Cancun%20Mexico%20261110.pdf

Why a Work Programme on Water and Climate under the UN Framework Convention on Climate Change?

In August 2010 the Water and Climate Coalition produced a 'Roadmap' paper entitled '*Securing a Work Programme on Water under the UNFCCC'*[2]*,* that provides helpful background reading for this document. That paper made the case for a work programme on water, highlighting the important relationships between water and climate change, and pointing out the limited focus of the UNFCCC on water issues.

Climate Change Impacts through the Water Cycle

The role that water plays in relation to climate change is well documented by a range of authoritative sources, including the reports of the Intergovernmental Panel on Climate Change, the Stern Report on the Economics of Climate Change, UN Water Policy Briefings, and the World Bank Economics of Adaptation to Climate Change study, among others. The Water and Climate Coalition has consolidated much of this evidence in a number of reports and publications.[3] Some of the core observations are as follows:

- The Intergovernmental Panel on Climate Change states that 'water and its availability and quality, will be the main pressures on, and issues for, societies and the environment under climate change'.[4] People will feel the impact of climate change most strongly through changes in the distribution of water around the world and its seasonal and annual variability.[5]

- Water is the primary medium through which climate change influences the Earth's ecosystems and therefore people's livelihoods and well-being. Already, water-related climate change impacts are being experienced in the form of more severe and more frequent droughts and floods.[6]

- Global warming will transform the hydrological patterns that determine the availability of water. Many of the world's most water-stressed areas will get less water, and water flows will become less predictable and more subject to extreme events.[7]

- Climate change will alter patterns of water availability by intensifying the water cycle. Droughts and floods will become more severe in many areas. There will be more rain at

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[2] *Water and Climate Roadmap: Securing a work programme on water and climate under the UNFCCC*, Water and Climate Coalition, August/October 2010 http://www.stakeholderforum.org/fileadmin/files/Work%20Programme%20on%20Water%20and%20Climate%20-%20Analysis%20and%20Roadmap%20REVISED%20OCT%202010.pdf

[3] Please see all Water and Climate Coalition publications for more information: http://www.waterclimatecoalition.org/index.php/pubs.html

[4] IPCC Technical Paper on Water and Climate Change, p 7, http://www.ipcc.ch/pdf/technical-papers/climate-change-water-en.pdf

[5] Stern, Nicholas, *The Economics of Climate Change*, Chapter 3 – How climate change will affect people around the world p63 http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/d/Chapter_3_How_climate_change_will_affect_people_around_the_world_.pdf

[6] UN Water Policy Brief for COP15, p 1 http://www.unwater.org/downloads/UNWclimatechange_EN.pdf

[7] United Nations Development Report 2006, *Beyond Scarcity: Power, Poverty and the Global Water Crisis* p15 http://hdr.undp.org/en/media/HDR06-complete.pdf

high latitudes, less rain in the dry subtropics, and uncertain but probably substantial changes in tropical areas.[8]

- Higher average temperatures and changes in precipitation and temperature extremes are projected to affect the availability of water resources through changes in rainfall distribution, soil moisture, glacier and ice/snow melt, and river and groundwater flows; these factors are expected to lead to further deterioration of water quality as well. The poor, who are the most vulnerable, are also likely to be affected the most.[9]

- A study commissioned by the UNFCCC estimates the additional costs for adaptation in the water sector to be in the region of $9 – 11 billion in 2030 [10]

- The World Bank Economics of Adaptation to Climate Change study estimates costs of $13.7 billion in drier scenarios, and $19.2 billion in wetter scenarios for 'Water Supply and Flood Management'. This represents the third most costly sector for adapting to climate change as identified in the study.[11] With the costs of coastal area and infrastructure adaptation (also largely water-related) adaptation to climate change is up to 70 % water-related.

One of the critical observations in response to much of this evidence is that water has two 'faces'. A positive face, in that it is a provider of water resources. But also a negative face, in that it is the transmitter of water-induced hazards, such as floods, flash floods, rainstorms, and drought. Improved management of both the resource and its hazards is needed to increase resilience to climate change.

Water and Climate Challenges

Recognizing this, the work programme is therefore being proposed to address the following identified challenges:

- The need for globally-agreed normative principles and definitions on water and climate change
- The lack of understanding at many levels on the relationship between water and climate change, and how climate change impacts are likely to manifest through the water cycle
- The lack of clarity regarding finance for integrated and adaptive water management to build resilience to climate change
- The importance of integrating water management and climate change adaptation
- The need for integration of water management with sectoral responses to climate change
- The lack of implementation of many international agreements relating to water that would help to build resilience

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[8] Ibid
[9] Ibid
[10] UNFCCC: *Investments and Financial Flows to Address Climate Change*, 2007, p 105
http://www.un.org/ga/president/62/ThematicDebates/gpicc/iffacc.pdf
[11] World Bank, *The Cost to Developing Countries of Adapting to Climate Change, New Methods and Estimates, The Global Report of the Economics of Adaptation to Climate Change Study, Executive Summary*, p6
http://siteresources.worldbank.org/INTCC/Resources/Executivesummary.pdf

Objectives of the Work Programme on Water and Climate

Building on the identified 'needs', it is proposed that the work programme is guided by the following objectives:

- To bring together Parties and other stakeholders to discuss and agree guiding and normative policy principles on water management and climate change at a global level
- To enhance understanding of the relationship between water and climate change at a global level
- To provide expert advice and analysis to the climate change funds on water management priorities
- To enhance knowledge and build capacity for the effective management of water to build resilience to climate change and to respond to climate change impacts
- To promote implementation of other global agreements and Conventions that build resilience to climate change through water management

Functions of a Work Programme on Water

To address the identified needs, and meet the outlined objectives, the work programme would consist of the following functions:

- **The Discourse Function** - Creating a global policy discourse on water and climate change
- **The Principles Function** - Establishing guiding principles on water and climate change
- **The Finance Function** - providing advice and guidance to the climate change funds
- **The Implementation Function** - developing resources and co-ordinating capacity building to advance water and climate priorities
- **The Coherence Function** - promoting synergies between global agreements and mechanisms on water and climate

The proposed functions are based on a needs assessment which was conducted with Coalition members. The functions are intended to stimulate discussion, and can be considered in isolation as well as part of an overall package. Though these functions would sit under the over-arching framework of a UNFCCC work programme, it is proposed that they be delivered in close partnership and collaboration with relevant actors and stakeholders, as well as build upon and complement existing initiatives, including:

- The joint Water, Climate and Development Program for Africa by the Global Water Partnership and the African Ministers Council on Water
- The Global Water and Adaptation Action Alliance (GWAAA)
- UN-Water's evolving work programme on water and climate change.

1. The Discourse Function

Discourse: Improving the global policy discourse on water and climate change – a work programme under the UNFCCC offers a space to 'embed' the water and climate discourse at an intergovernmental level, leading to improved understanding of the relationship between water and climate change.

Currently there are a number of gaps in the global policy discourse on water and climate change, despite a number of initiatives that have emerged and evolved over the years. Through the negotiations under the UNFCCC there are limited references to water or water management – as suggested by much of the Coalition's analysis[12]. Though particular sectors and approaches rightly occupy a prominent position in the negotiations on adaptation – such as insurance and 'loss and damage'- water management is not identified as a major tool to deal with climate challenges. Equally, the interactions between water and mitigation (played out through energy production and forests) are not addressed directly through the negotiations or the UNFCCC subsidiary bodies.

Despite the fact that water management has so far not emerged as a critical focus issue in the climate change negotiations, the elaboration of a global discourse on water and climate change has been carried forward in other global forums and by many other water-related organizations and initiatives. The Cooperative Programme on Water and Climate (CPWC)[13] has since 2001 been actively promoting attention to water and climate through its research, the coordination of dialogues, and its contribution to global forums addressing water issues. The World Water Forum has included a strong focus on water and climate issues through its sessions and has contributed to the development of helpful principles and guiding points.[14] The Stockholm World Water Week has further promoted the linkages between water and climate through its convening of a 'water and climate focus, and the issuing of statements and key messages on water and climate as a result of these discussions.[15] UN Water has played an important role in highlighting the importance of water and climate issues, through the production of policy briefs and publications, as well as the convening of a Water and Climate Taskforce.[16] The Global Water Partnership is also addressing the linkages between water, climate and development. The Convention on Biological Diversity has further advanced the cause of water and climate through its focus on building resilience through the sustainable management of freshwater ecosystems. A range of civil society organizations and NGOs – from large organisations such

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[12] *Water and Climate Roadmap: Securing a work programme on water and climate under the UNFCCC*, Water and Climate Coalition, August/October 2010 http://www.stakeholderforum.org/fileadmin/files/Work%20Programme%20on%20Water%20and%20Climate%20-%20Analysis%20and%20Roadmap%20REVISED%20OCT%202010.pdf

[13] Cooperative Progamme on Water and Climate – bridging water and climate for development http://www.waterandclimate.org/

[14] World Water Forum – one of the key focus areas of the 5th World Water Forum in 2009 was 'Adapting to Climate Change http://www.worldwaterforum5.org/index.php?id=1897

[15] Stockholm World Water Week http://www.worldwaterweek.org/programme2010

[16] For more information on UN Water visit http://www.unwater.org/

as WWF to grassroots networks such as the Freshwater Action Network - have also taken up the challenge and are actively advocating on water and climate issues. Governments, too, have begun to recognize and address the importance of water management in building resilience to climate change – the Danish government convened a series of dialogues on land and water management for climate change adaptation ahead of COP15 in 2009. These dialogues resulted in the Nairobi Principles, which have provided a useful overview of some of the policy principles underpinning the management of water, land and climate.[17]

It is clear, therefore, that the interaction between water and climate change is recognized and addressed on a number of levels, and that the global discourse is evolving and gaining profile. However, there are some limitations in integrating and 'systematizing' this discourse due to the absence of an obvious 'space' for this discussion to be fully consolidated at an intergovernmental level. For example, the Intergovernmental Panel on Climate Change has produced a Technical Paper on Water and Climate, yet it has been difficult for the observations to be translated into policy agreements due to the lack of a corresponding mechanism through the UNFCCC where these issues can be addressed fully and comprehensively. Many of these comprehensive efforts and initiatives addressing water and climate change do not, therefore, have a clear channel through which to articulate views, concerns and recommendations. The messages emerging from the World Water Week, for example, make an extremely useful contribution to the climate debate, but despite the greatest efforts it is difficult for the recommendations to penetrate the climate agenda, due to an absence of a space at the UNFCCC where the water and climate communities can effectively interact. The policy briefings on water and climate by UN Water, representing tens of UN agencies, have an authority that should be recognized and endorsed at an intergovernmental, yet there isn't currently a process at the UNFCCC which can accommodate these recommendations. As there is no functioning global Convention dealing specifically with water, there is no intergovernmental process to consolidate these initiatives, establish common principles, and evolve the discourse further.

As the relationship between water and climate change has been clearly established, and as there is an abundance of initiatives, programmes, projects and organizations addressing this issue, it is clear that for the discourse to evolve further it must become embedded at an intergovernmental level. This requires the development of a new 'space' into which ideas, energy and innovation can be channeled so as to create a common vision on water and climate change. The negotiations currently taking place under the Ad Hoc Working Group on Long-term Cooperative Action through the UNFCCC are naturally highly political and currently not flexible enough to introduce broader concerns. Therefore the establishment of a work programme on water and climate change under the subsidiary bodies of the UNFCCC could provide the opportunity to address water issues in the context of the Convention. The programme would be open to all Parties as well as experts and civil society representatives, and would offer a coherent process addressing water and climate change under a legally-binding Convention.

[17] Danish Dialogue on Land and Water Management – see http://www.landwaterdialogue.um.dk/

2. The Principles Function

Principles: Establishing guiding policy principles on water and climate change – the work programme will bring Parties together to coordinate and agree guiding policy principles on water and climate change which would be presented as recommendations to the COP. The policy principles would also help to guide the financial mechanism of the Convention.

The principles element of the work programme represents the evolution of the water and climate change discourse. Currently there are few globally agreed principles and definitions underpinning water as it relates to climate change that have been agreed an intergovernmental level or through a legally-binging Treaty. A key component of the work programme would therefore be the development and agreement of normative global principles and policy guidelines on water and climate change.

Whilst many challenges relating to water are dealt with on a local, national and regional level, the agreement of global principles on water and climate change is important for the following reasons:

1) Many countries and regions are likely to experience similar and common challenges in building resilience to climate change through water management, and responding to climate-induced water hazards. In this context the agreement of global policy norms that can help to guide responses on a national level is highly relevant. The principle of identifying and agreeing appropriate solutions to common problems is at the heart of multilateralism.

2) There are a number of concerns being addressed on a global level through the climate change negotiations for which water management has a direct relevance, though discussions on these topics often take place 'outside the water box'. This includes negotiations on disaster risk reduction, ecosystem-based adaptation, agriculture, sustainable management of forests, among others.

3) The new realities of globalization, food production and trade make water a global issue. The movement of water across borders through import and export products creates networks of interdependencies which constitute a significant risk if not managed properly. The impacts of climate change on water resources in just one 'link' of the global chain can have significant global ramifications.

4) The management of water in relation to climate change – both as a resource and as a hazard – has obvious supra-national, regional and international dimensions. Bad water management in one country can have knock-on effects on neighbouring states and

reduce their resilience to climate change. Responses to climate change impacts on water resources e.g. intensified irrigation, over-extraction of groundwater, have ramifications beyond national boundaries.

5) Coherent global policy principles and guidelines on water and climate change can stimulate and complement actions on a national level. Many activities and initiatives addressing climate change are initiated autonomously and independently of the UNFCCC, though the Convention provides an overall framework under which these activities are undertaken.

Currently, the most relevant process under the UNFCCC through which to establish these principles would be the Ad Hoc Working Group on Long-Term Cooperative Action, which addresses the four pillars of the Bali Action Plan – adaptation, mitigation, technology transfer and finance – all of which are relevant for water. Yet whilst the Water and Climate Coalition continues to advocate for stronger references to water management and water-related priorities in the AWG LCA negotiations, there is a limit to how far definitions, principles and guidelines on water management can be elaborated, due to the focus on the institutional and 'architectural' aspects of a global climate change agreement. A work programme on water under the Convention could include an element that would focus in more detail on developing principles, definitions and policy guidelines on water and climate change, which would be discussed and agreed by Parties on an annual basis.

The Water and Climate Coalition has established a number of guiding principles and policy recommendations through its research and consultation with its members.[18] These are outlined below as an indication of the kinds of policy issues on water and climate change that might be addressed, discussed and agreed at an intergovernmental level:

- **Water management** can build social, economic and ecological resilience to climate change when governed by principles that take into account the competing demands on water across sectors, and the need to guarantee minimum environmental flows. Good water management should be taken up as a main 'ingredient' in the planning process for adaptation to climate change. The concept and approach of Integrated Water Resources Management (IWRM) provides an important guiding framework for adaptive water management

- **Water management as a cross-sectoral issue –** the sustainable management of water in relation to climate change is relevant not only for water managers but must be addressed and dealt with by other sectors that rely on water. Renewable energy development, forest management, food production – all of which have climate mitigation and adaptation qualities – all have implications for water use that must be considered and properly managed.

[18] Please see all Water and Climate Coalition publications for more information: http://www.waterclimatecoalition.org/index.php/pubs.html

- **Ecosystem-based approach –** Ecosystem-based adaptation is an important component of adaptation strategies. Healthy ecosystems provide vital natural infrastructure for water storage, flood regulation and coastal defense. The availability of water resources depends on healthy ecosystems, and healthy ecosystems rely on a reliable supply of freshwater. Protecting, preserving and conserving ecosystems helps to build resilience to climate change impacts on water resources.

- **Transboundary cooperation and regional approaches –** Climate change impacts through the water cycle do not respect national and political boundaries. Adaptation strategies must involve regional cooperation and develop regional responses to climate impacts on transboundary waters, in order to cope with the additional strains that changes in water availability may put on relations between States. International water law, as a tool for governing transboundary water management, must thus be strengthened, including through the entry into force and widespread ratification of the UN Watercourses Convention and the revision of existing watercourse agreements to incorporate climate change and environmental flows concerns.

- **Water rights and allocation -** Effective water allocation systems supported by participatory water governance and fair water rights help enable flexible responses to risks and uncertainty caused by climate change. Climate-induced changes necessitate water management processes that prioritise users according to need, and regularly monitor and evaluate changes in flows to ensure the best allocation across stakeholders. Water rights and allocation systems should protect social and environmental interests, whilst permitting flexibility in economic use of water. (

- **Access to Water and Sanitation –** Access to drinking water and sanitation is now recognized as a human right.[19] This entails a legal obligation for governments to ensure universal access.[20] Water and sanitation infrastructure and management systems must be built or, where relevant, re-designed, to build resilience to projected impacts of climate change and future uncertainties. Sanitation must be considered as a fundamental component of sustainable and climate resilient water management. Further investment is needed in research into the impacts of climate change on water and sanitation delivery systems, and the associated costs.

- **Water management for climate change mitigation** – the relationship between water management and mitigation is reciprocal. Water management can be energy intensive and thereby increase carbon emissions. Conversely, mitigation arrangements including biofuels, hydropower and forest preservation all rely upon the availability of freshwater resources. Assessing the water management implications of mitigation actions is therefore critical to ensure their long-term availability. Implementing mitigation strategies based on assumptions of future water availability can be dangerous.

[19] The UN resolution: http://daccess-dds-ny.un.org/doc/UNDOC/LTD/G10/163/09/PDF/G1016309.pdf?OpenElement

[20] The position paper by the UN indenpendent expert on climate change and the right to water: http://www2.ohchr.org/english/issues/water/iexpert/docs/Climate_Change_Right_Water_Sanitation.pdf,

CASE STUDY: NAIROBI PRINCIPLES ON INTEGRATED LAND AND WATER MANAGEMENT FOR CLIMATE CHANGE ADAPTATION[21]

The Dialogues were convened by the Danish government in the run up to COP15 in Copenhagen, convening experts from all over the world to agree five principles on land and water management for climate change adaptation. It would be useful for the 'principles element' of the work programme to address and endorse such principles:

1. **Sustainable Development**

Adaptation must be addressed in a broader development context, recognizing climate change as an added challenge to reducing poverty, hunger, diseases and environmental degradation. The poor and marginalized groups are most vulnerable to the impacts of climate change, and suffer the most from accelerating water scarcity, water quality degradation, floods and droughts, and sea level rise

2. **Building Resilience**

Building resilience to ongoing and future climate change calls for adaptation to start now by addressing existing problems in land and water management. Focusing on the adaptive capacity for livelihoods and ecosystem maintenance, and building on integrated land and water resources management approaches, no regrets investments are needed for both hard and soft adaptation measures which include increased water use efficiency and water storage capacity, as well as intensification and diversification in agriculture.

3. **Governance**

Strengthening institutions for land and water management is crucial for effective adaptation and should build on the principles of participation of civil society, gender equality, subsidiarity and decentralisation. Effective adaptation for land and water requires different approaches within a comprehensive, integrated framework, where bottom-up meets top-down—from community based adaptation in the villages to the basin, national and regional/trans-boundary levels

4. **Information**

Information and knowledge for local adaptation must be improved, and must be considered a public good to be shared at all levels. The information currently available through global climate impact models and vulnerability assessment methods need to be refined to better support national and local actions to adapt to climate change within land and water management.

5. **Economics and Financing**

The cost of inaction, and the economic and social benefits of adaptation actions, calls for increased and innovative investment and financing. Sound agricultural and other land and water management practices that provide adaptation and/or mitigation benefits should be eligible for financial support through a variety of transparent mechanisms.

[21] Danish Dialogue on Land and Water Management – see http://www.landwaterdialogue.um.dk/

3. The Finance Function

Finance: **providing advice and guidance to the climate change funds** – the work programme would include an expert thematic advisory panel on water and climate change which would provide relevant and up-to-date information and analysis to the funds, including an assessment of the cost effectiveness of investing in water management.

Currently the financial architecture under the UNFCCC is still evolving. The Adaptation Fund, the Special Climate Change Fund and the Least Developed Countries Fund are all operational through the Financial Mechanism of the UNFCCC – the Global Environment Facility (GEF). The mandates for all these funds identify the broad areas and activities which are covered by the Fund. The Conference of Parties (COP) 'Decisions' in which the mandate is contained provides guidance to the governing and administrative bodies of the Funds which will be taken into account in reaching decisions on funding particular projects and programmes.[22] The interaction of the broad guidelines with the more detailed priorities outlined by individual countries in their applications balances globally-agreed objectives with the articulated needs of vulnerable developing countries.

The current negotiations taking place under the AWG LCA on a new fund for climate change adaptation and mitigation under the Convention[23] (reinforced by the agreement on a Copenhagen Green Climate Fund through the Copenhagen Accord[24]) will be designed based on a similar principle. The current negotiating text suggests that the design process for the Fund will take into account 'criteria for funding projects, programmes, policies and activities' and 'strategic priorities, policies and guidelines', alongside 'recipient country involvement to ensure country-driven priorities'[25].

This is an important approach to empower recipient countries within the parameters of globally agreed priorities. However, the broad guidelines and criteria of the Funds do not provide guidance on specific priorities, and it is difficult for the governing bodies of the Funds to make objective assessments of priority investments, especially in particular areas or sectors such as water management. This being the case, there could be a role for expert advisory panels to UNFCCC Funds, consisting of experts and analysts in particular thematic areas. The combination of broad global guidelines, priorities identified on a country-level, and expert advice relating to priority areas and sectors could help to achieve representative and equitable outcomes in relation to climate funding. It would also help to ensure that multilateral funding

[22] See for example the mandate of the Special Climate Change Fund: http://unfccc.int/resource/docs/cop7/13a01.pdf#page=43
[23] See UNFCCC AWG LCA negotiating text as of 29th October 2010 FCCC/AWGLCA/2010/INF.1 http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/lcacrp1.pdf p53
[24] Copenhagen Accord http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf p7
[25] http://unfccc.int/resource/docs/2010/awglca13/eng/inf01.pdf

appropriately reflected vulnerability as expressed through different localities, regions and sectors as analysed and observed by experts.

Such advisory panels would be appropriate across a range of thematic areas, to be agreed by the Parties in consultation with objective and expert scientific and technical advice. One of the elements of the proposed work programme on water would be to establish an expert advisory panel on water and climate change which could advise existing and new Funds under the UNFCCC. The panel could provide objective analysis of priority interventions relating to water management. In its recommendations, the panel would help to embed the principle of integration of climate change with other development and sectoral priorities. It would also be able to provide advice on the areas of water management that should be eligible for 'new and additional' funding. Through the work programme on water, the advisory panel could present its findings and recommendations on an annual basis to help inform the direction and decision-making of the Funds.

THEMATIC ADVISORY PANEL ON WATER TO THE UNFCCC FUNDS. POSSIBLE AREAS OF ADVICE

- Analysis of best practice and cost effectiveness of water management-related climate change interventions across sectors
- Assessment of 'value for money' regarding investments in water management for building climate resilience
- Outline of water management priorities that should be eligible for 'new and additional' funding
- Estimations of additional costs for integrating climate change adaptation and water management
- Review of existing financial flows for water management and how to complement these funding streams

4. The Implementation Function

Implementation: developing resources and tools, conducting analysis and capacity building to advance water and climate priorities – the work programme would include a focus on activities to enhance implementation. This would include developing resources, co-ordinating workshops and facilitating knowledge exchange.

For the work programme to be comprehensive in its impacts, it is critical that it is also complemented with an element that focuses on enhancing the implementation of water-related objectives in the context of climate change. This allows for lessons and best-practice to be disseminated and shared among and between Parties, and for the over-arching principles on water and climate change to be informed by case studies, programmes, projects and capacity building initiatives. The implementation function would primarily be delivered by existing institutions and initiatives with relevant expertise – the emerging Global Water and Adaptation Action Alliance would be highly relevant in this regard.

The implementation function would seek to address the broad needs that exist when it comes to establishing processes and implementing objectives relating to water and climate change on a country level. The capacity of many countries and communities is limited when it comes to building resilience to climate change through water management, responding to climate change impacts on water resources, or integrating mitigation strategies with water management approaches. There are many factors which contribute to this weakened capacity and therefore lead to associated needs[26]:

1. **Lack of coherent information and data** – there is a lack of available, coherent and verified data on climate change impacts on the hydrological cycle. There is a lack of integration of hydrological and climate data at global, regional and national levels. Where data exists it is often inaccessible or difficult to understand. Some datasets are also not internationally verified by agreed universal standards. This presents an obstacle in terms of planning, as projected impacts are unclear and data can be unreliable.

2. **Water management arrangements that do not build in flexibility** – even with the best and most accurate data and information on climate change impacts on hydrological patterns, there is still a reasonable margin of error. It is notoriously difficult to pin-point exact climate change impacts, so there is likely to always be a degree of uncertainty. In many areas, governments and communities will have to prepare themselves for the possibility of both droughts and floods. This means creating water management arrangements that can respond flexibly to uncertainty. Yet in many cases water is managed in a way that resists flexibility, governed by water allocation and water rights arrangements that preclude, for example, a prioritization of users (including ecosystems) at times when water is scarce

[26] Please see Water and Climate Coalition publications for further elaboration of these needs: Please see all Water and Climate Coalition publications for more information: http://www.waterclimatecoalition.org/index.php/pubs.html

3. **External social and economic drivers that exert stress on water resources and reduce overall resilience –** economic development and social change act as stressors on available water resources. Urbanisation, industrialization, intensified irrigation, energy production, among other factors associated with social and economic development, all have implications for water use, yet decisions relating to these activities are taken 'outside the water box'[27] i.e. with little consideration of the impacts on available water resources. The combination of these external drivers with often inadequate water management arrangements can dramatically reduce resilience – as climate change becomes an additional 'stressor' there is no 'leg-room' to accommodate its impacts on water resources.

4. **Lack of coordination of water management plans and strategies –** a priority for building resilience to climate change is the integration of water management into climate change adaptation plans, and conversely the integration of climate change into water management plans and processes. The challenge with integration, however, is that in many countries and regions of the world, there are no functioning integrated water management plans in place, or plans exist on paper only.[28] As managing water in an integrated way is critical to climate resilience, the absence of such arrangements hugely increases vulnerability to climate change.

5. **Establishment of adaptation 'architecture' removed from other development objectives –** there is an evolving architecture of adaptation 'activity' which is not always integrated with existing development plans and sectoral strategies. The divide between the development community, the climate community and the water community has been widely observed.[29] The development of National Adaptation Plans of Action (NAPAs) has often taken place in parallel to other plans and processes[30], which makes it difficult for adaptation to be fully integrated.

6. **Lack of capacity to adapt to climate change through water management –** many stakeholders who are involved directly or indirectly with water management do not necessarily have the knowledge or capacity to implement practices that build resilience. From water managers, practitioners and engineers through to those working in other sectors for which water is relevant (agriculture, energy, health, disaster risk reduction), capacity needs to be build to establish practices which build resilience through managing water sustainably.

7. **Lack of established links between water and climate change mitigation –** so far the links between mitigation and water management have not been fully established or recognized. Yet the linkages are reciprocal – managing water uses energy, and generating renewable energy often relies upon water availability. The failure to

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[27] See the findings of the World Water Development Report 2009 http://www.unesco.org/water/wwap/wwdr/

[28] World Water Assessment Programme Dialogue Paper, UNDP: Water Adaptation in National Adaptation Programmes for Action: Freshwater in Climate Adaptation Planning and Climate Adaptation in Freshwater Planning p 5 http://unesdoc.unesco.org/images/0018/001818/181887e.pdf

[29] See interventions and publications by the Global Water Partnership on this issue - http://www.gwp.org/

[30] Ibid

acknowledge water in relation to mitigation strategies could reduce the long-term sustainability of these strategies if assumptions are made about future water availability.

Recognizing the needs and gaps in terms of implementation, the water work programme could initiate and develop a number of helpful activities to build capacity and advance implementation.

POSSIBLE ACTIVITIES OF THE WORK PROGRAMME TO ADVANCE IMPLEMENTATION OF WATER AND CLIMATE OBJECTIVES

The following activities would be initiated by the UNFCCC Secretariat through the water and climate work programme, but would be implemented in collaboration and partnership with a network of international actors. The Global Alliance on Water and Climate Change Adaptation would be a key partner in this regard**:**

Consolidating and sharing data – the work programme could work with relevant UN agencies and research institutes to consolidate and make accessible data relating to climate change impacts on water resources.

Developing and disseminating resources, guidelines and toolkits – the work programme could consolidate existing resources and toolkits that help to build capacity for adaptive water management. Where necessary it could develop tailored guidelines for different stakeholders working in water management - from planners to engineers.

Collecting best-practices – the work programme could play a helpful role in collecting, disseminating and communicating best practices on building resilience to and responding to impacts of climate change through water management

Help-desk function – the work programme could establish a help-desk to provide advice on water management across all sectors to build adaptive capacity to climate change. This could entail water-related problems and solutions in agriculture, health, education, energy, among other sectors. It could also advise on the integrated implementation of NAPAs.

Co-ordinating workshops, events and training sessions - resources provided through the work programme could be complemented by workshops, events and 'training the trainers' sessions addressing the multiple and cross-sectoral dimensions of water in relation to climate change.

5. The Coherence Function

Coherence: promoting synergies between global agreements and mechanisms on water and climate – the work programme would identify other Conventions and multilateral agreements that are relevant to water and climate change and promote the implementation of the provisions of these agreements. This would ensure coherence across the multi-lateral system and promote integration.

There are a range of global Conventions, Treaties, Multilateral Environmental Agreements (MEAs) and mechanisms that could help to further priorities relating to water and climate change if their provisions were implemented. Though such agreements and the provisions contained within them may not be labeled as 'climate change adaptation' or 'adaptive water management', there may be a number of processes and activities that could be implemented that would contribute to enhanced resilience. One of the objectives of the work programme would be to identify these agreements, analyze the state of implementation, assess capacity needs in relation to implementation, and work collaboratively with the Secretariats of the respective Conventions on initiatives that would enhance implementation.

The activities and findings of the work programme in this area could then complement the 'Implementation Element' through presenting a range of existing agreements, tools and processes that enhance climate resilience through a water-centric approach. This would help to advance the integration of approaches, avoiding the development of a separate 'adaptation architecture' entirely removed from existing priorities.

The work programme would be responsible for conducting a full analysis, but some of the relevant international agreements are outlined below:

- **Convention on Biological Diversity – Inland Waters Biodiversity Work Programme**[31]

This work programme under the CBD aims to build capacity for the integrated management of water resources which recognizes ecosystems as water users. The programme is established on the principle that the maintenance of biodiversity should be recognised as a critical demand for freshwater supply. The link between climate resilience and healthy ecosystems is widely acknowledged. Freshwater supply is critical to ecosystem health, and in turn ecosystem health is critical for the maintenance of freshwater supply.

As climate change represents an additional 'stressor' on water resources, on top of existing and competing demands, it is important that water management arrangements are in place that allocate water resources appropriately across users and in doing so protect and preserve ecosystems and biodiversity. Healthy ecosystems build resilience to climate change by helping to maintain and regulate water supply, as well as building resilience to flooding and droughts.

[31] Convention on Biological Diversity http://www.cbd.int/waters/

Implementing the provisions of this CBD work programme would help to build resilience to climate change through sustainable and integrated water management that recognizes ecosystems and biodiversity as 'water users.'

- **Ramsar Convention on Wetlands**

The Convention on Wetlands is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Convention's mission is "the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". The Convention recognizes that wetlands provide fundamental ecological services and are regulators of water regimes and sources of biodiversity at all levels - species, genetic and ecosystem. It also promotes the role of wetlands for climate change adaptation and mitigation.[32]

The implementation of the provisions of the Ramsar Convention are critical in building resilience to climate change through the protection, preservation and sustainable management of wetlands on a national, regional and global level. Wetlands also act as 'carbon sinks' and so have significant mitigation potential.

The work programme on water under the UNFCCC could work closely with the Ramsar Convention to make the case more strongly for the role of the Convention's provisions in enhancing climate change adaptation and mitigation. The work programme could effectively apply a 'climate lens' to the Ramsar Convention, thereby promoting the implementation of the Convention and the relevance of its related activities for climate change funding.

- **UN Watercourses Convention**

The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (UN Watercourses Convention) is a flexible and overarching global legal framework that establishes basic standards and rules for cooperation between watercourse states on the use, management, and protection of international watercourses.[33] The Convention is not yet fully functioning as it is currently short of the 35 contracting states needed to bring it into force.

The Convention is a critical tool in promoting cooperation between States on the use of transboundary water resources, which are coming under mounting pressure due to the ever-increasing demand for water resources for agricultural and industrial uses as well as basic human needs. Climate change stands to exacerbate this situation due to changes in the hydrological cycle which will alter water availability around the world, and pose a further challenge to the achievement of water security. In this context, managing water within national

[32] Ramsar Convention Introductory Note http://www.ramsar.org/cda/en/ramsar-about-introductory-ramsar/main/ramsar/1-36^16849_4000_0__

[33] WWF – Everything you need to know about the Un Watercourses Convention - http://assets.panda.org/downloads/wwf_un_watercourses_brochure_for_web_july2010_en.pdf

boundaries will not be sufficient unless complemented by transboundary water management on the basis of the applicable international law.

Yet most of the world's transboundary water resources still lack sufficient legal protection. This absence of well-governed tranboundary water management arrangements represents a significant climate risk. The provisions of the UN Watercourses Convention include the obligation placed upon States to cooperate and collaborate, to avoid causing significant harm, and to follow a procedure of consultation, negotiation and data exchange, among others. Such provisions can supplement existing agreements and offer a legal basis for cooperation where such agreements are absent, thereby mitigating climate risks.

The work programme on water under the UNFCCC could play a key role in identifying how the UN Watercourse Convention may help to build resilience between and among States to the impacts of climate change on transboundary water resources. Climate change impacts will be felt beyond national and political boundaries. Legal instruments at various levels and the institutions they often create help to govern the relationship between States over shared water resources. Their role should be acknowledged and promoted as part of a climate adaptation and risk-reduction package. The water programme could outline the benefits of the UN Watercourse Convention and other legal tools in the context of climate adaptation and resilience, and provide advice and guidance accordingly.

Conclusion

This paper has attempted to identify the 'needs' in relation to climate change and water management more broadly. It advocates for the establishment of a work programme on water under the UNFCCC which would help to address these needs, in cooperation and collaboration with a range of actors. The five 'elements' of the work programme would enhance the water and climate change 'discourse', thereby raising the profile of water as an issue and putting it more firmly on the global climate agenda. The programme would also help to establish principles underpinning water management for climate change adaptation and mitigation, which could guide and inform policy development at all levels. To complement this, the work programme would seek to work with partners and existing networks of practitioners to advance the implementation of water-related objectives in the context of climate change adaptation and mitigation, through the consolidation of data and research, the co-ordination of workshops, and the provision of guidelines and advice for actors at all levels. To ensure the integration of climate change adaptation with existing activities and initiatives that build resilience through water management, the work programme would identify synergies with other Conventions and agreements, and promote the implementation of the provisions contained therein.

The objective of this paper is to promote discussion and debate among and between Parties and other stakeholders, to effectively identify needs and build a work programme that will advance the integration of water management with climate change objectives globally.

About the Water and Climate Coalition

The Water and Climate Coalition is a global coalition of organisations seeking to place water management at the heart of global climate change policy.

Members of the Water and Climate Coalition

- Cap-Net
- Chartered Institute for Water and Environmental Management (CIWEM)
- International Union for the Conservation of Nature (IUCN)
- Freshwater Action Network (FAN)
- Green Cross International
- International Water Association
- Progressio
- Stakeholder Forum for a Sustainable Future (Secretariat)
- Stockholm International Water Institute (SIWI) (Secretariat)
- University of North Carolina (UNC) Water Institute
- World Wildlife Fund (WWF)

Collaborative Partners

- Co-operative Programme on Water and Climate (CPWC)
- Global Water Partnership

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