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Working Group on Integrated Water Resources Management

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Adapting to climate change in transboundary basins

Progress report on the collection of lessons learned and good practices on water and adaptation to climate change in transboundary basins

Prepared by the lead countries and the secretariat

Summary

At its sixth session (Rome, 28–30 November 2012), the Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes entrusted the Task Force on Water and Climate, in cooperation with the Working Group on Integrated Water Resources Management, with the preparation of a collection of lessons learned and good practices on climate change adaptation in transboundary basins (ECE/MP.WAT/37, para. 51 (d)).

The present document reflects the current status of preparations of the publication, following the first meeting of the drafting group (Geneva, 9–10 December 2013) and the second meeting of the global network of basins working on climate change adaptation (Geneva, 13–14 February 2014). The document describes the proposed approach, content, methodology and timeline for drafting the collection and contains the draft outline as well as a list of case studies received so far for the publication. The report was prepared by the secretariat with the Netherlands and Switzerland, the lead Parties for programme area 4 of the Convention's programme of work for 2013–2015, "Adapting to climate change in transboundary basins".

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Contents

I. Background, objectives and proposed action by the Working Group

1. At its sixth session (Rome, 28–30 November 2012), the Meeting of the Parties to the United Nations Economic Commission for Europe Convention of the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) decided to compile, analyse, publish and disseminate lessons learned and good practices on water and adaptation to climate change in transboundary basins from the programme of pilot projects under the Convention and other similar initiatives. This publication will be prepared in cooperation with the International Network of Basin Organizations (INBO) and a number of other partners, for launching at the Seventh World Water Forum in April 2015 in the Republic of Korea.

2. The collection aims to demonstrate and illustrate important steps and lessons learned to take into account when developing a climate change adaptation strategy in the transboundary context. Once finalized, it will be made available in electronic form, on the Internet or a web platform, and in a printed publication.

3. The collection will be developed as a complement to the *Guidance on Water and Adaptation to Climate Change*.[1] Compared with the Guidance, it will be more practical, and comprise more detailed examples from all parts of the world and practical recommendations. It could lay the groundwork for an eventual update of the Guidance in the period 2016–2018, if so decided by the Meeting of the Parties.

4. The target audience of the collection of good practices and lessons learned includes all those working on adaptation to climate change in transboundary basins: joint bodies, river basin commissions and other institutions for transboundary cooperation; developers of adaptation strategies, especially in transboundary basins; decision makers; persons working on water and/or climate change in ministries; and other authorities. A special focus is put on transboundary cooperation; however, the publication can also serve experts working on adaptation to climate change in national basins.

5. The Working Group is invited to:

(a) Review the concept note and outline of the publication contained in this document and to provide comments on the content, outline and timeline for the collection;

(b) Suggest possible additional good practices for the preparation of the publication;

(c) Entrust the Task Force on Water and Climate, in cooperation with the Bureau, to develop and finalize the publication in the course of 2014 for its launch in early 2015 at the Seventh World Water Forum.

II. Proposed content of the publication

6. The collection of lessons learned and good practices will consist of three main parts:

(a) An overview of main lessons learned and practical recommendations for the different steps of developing a transboundary adaptation strategy and adaptation plan in transboundary basins;

[1] United Nations publication, Sales No. 09.II.E.14. Available from http://www.unece.org/env/water/publications/pub.html.

(b) Illustrations of the lessons learned in the form of short stories or case studies;

(c) Conclusions/summary/way forward.

7. The overall collection of lessons learned will be designed so that it can act as a checklist for developing a transboundary adaptation strategy and plan. Some of the case studies will be presented in more detail in the annex to the publication. The main text (without case studies) should be short — a maximum of 10 pages — but can include references to other publications and processes.

A. Overview of lessons learned

8. The publication is envisaged to include the following sections:[2]

1. Introduction;
2. General arrangements: institutional arrangements and application of integrated water resource management principles;
3. The legal framework;
4. Stakeholder involvement in the whole process;
5. Information and data needed, including data exchange at the basin level;
6. Vulnerability and impact assessments;
7. Developing and prioritizing adaptation measures;
8. Financial and economic matters;
9. Evaluation of adaptation strategies;
10. Capacity development;
11. Communication and dissemination.

B. Case studies and good practices connected to the lessons learned

9. For each of the lessons learned, one or more case studies and good practice examples of the practical implementation of the lesson will be included in the publication in the form of "stories". The case studies and good practices will be collected from the experiences of the pilot projects, cases presented during the Task Force meetings and workshops and other success stories in adaptation to climate change in transboundary basins from basins worldwide.

10. Each case study or good practice will be presented in a short, concise way and should contain information on how it corresponds to the respective lesson(s) learned.

11. A matrix showing which case studies and good practices correspond to which lessons learned will be developed for preparing the publication and possible inclusion in it. As a longer good practice example, an annex to the publication will set out the whole process of developing an adaptation strategy for several transboundary basins.

12. If relevant and possible, examples of bad practices will also be included, i.e., what went wrong and why. Sometimes failures provide more compelling lessons than good practices.

[2] The full outline is included in the annexes.

III. Process of preparing the publication

13. The sixth meeting of the Task Force on Water and Climate (Geneva, 27 June 2013) decided to establish a drafting group to facilitate the preparation of the collection of good practices and lessons learned. The drafting group, which works in English, is composed of experts from pilot projects on climate change adaptation in transboundary basins, representatives of partner organizations and other institutions. The members of the drafting group serve in their personal expert capacity.

14. At its first meeting, held at the Palais des Nations in Geneva on 9 and 10 December 2013, the drafting group discussed the objectives, draft outline and content of the publication and reviewed a proposed overview of lessons learned and a template for good practices, as well as a proposed timeline for the drafting group's next steps.

15. The tasks of the members of the group include: developing and further revising the structure of the publication; identifying and selecting lessons learned and good practices and collecting case studies, stories and good examples related to them; providing draft text; reviewing drafts; and maintaining contacts with the case study authors.

16. A small team will be created for editing/writing the publication and making it coherent.

17. The progress in preparation of the publication will be regularly reviewed by the Task Force on Water and Climate and the Working Group on Integrated Water Resources Management under the Water Convention.

IV. Proposed timeline

Indicative time frame	*Activity*
13–14 February 2014	Second meeting of the global network of basins working on climate change adaptation: discussion of progress made
End of April 2014	Selection of good practices to be included
April–May	Authors to provide their draft contributions
June–September	Compilation of the first draft
25–26 June 2014	Presentation of the progress at the ninth meeting of the Working Group on Integrated Water Resources Management
13–15 October 2014	Presentation of the draft at the fifth workshop on water and adaptation to climate change in transboundary basins and the seventh meeting of the Task Force on Water and Climate; second meeting of the drafting group
October–December 2014	Finalization of the document
January–February 2015	Translation (into English and French at this stage), layout, printing
April 2015	Launch and presentation at the Seventh World Water Forum
March 2015	Flood workshop organized by Germany and Task Force on Water and Climate meeting
November 2015, Hungary	Seventh session of the Meeting of the Parties to the Water Convention

Annex I

Collection of lessons learned and good practices on climate change adaptation in transboundary basins

Draft annotated outline[a]

1. Introduction

1.1 Background and objectives of the document

1.2 Definitions

A **lesson learned** is a recommendation about a certain concept or approach that has proven to be beneficial or effective as derived from practical experience.

A **good practice** is a case situation in which certain concepts or approaches proved to be beneficial or effective and where adaptive capacity has been increased.

1.3 Target audience

The target audience of the collection of good practices and lessons learned includes all those working on adaptation to climate change in transboundary basins: joint bodies; river basin commissions and other institutions for transboundary cooperation; developers of adaptation strategies, especially in transboundary basins; decision makers; persons working on water and/or climate change in ministries; and other authorities.

1.4 Why transboundary cooperation is important in climate change adaptation

Water is a cross-cutting issue, which demands attention at all levels and across sectors. Water issues involve many stakeholders with conflicting and competing needs, and cross multiple physical, political and jurisdictional boundaries, as recognized at the United Nations Conference on Sustainable Development (Rio+20 Conference) held in 2012. Cooperation is necessary to address issues such as water allocation decisions, upstream and downstream impacts of water pollution and water abstraction, infrastructure development, overexploitation and financing of water management. Water cooperation contributes to:[b]

(a) **Poverty reduction and equity**. More inclusive governance of water and cooperation between different users can help overcome inequity in access to water, which is essential for satisfying basic human needs and reaching the Millennium Development Goals;

(b) **Economic benefits**. Cooperation can lead to more efficient and sustainable use of water resources, e.g., through joint management plans creating mutual benefits and better living standards;

[a] The present outline is a draft and still an incomplete version/work in progress as of 4 April 2014. An updated version will be presented to the Working Group at its ninth meeting in June 2014.

[b] See *Water cooperation in action: approaches, tools and processes*, report of the International Annual UN-Water Zaragoza Conference 2012/2013, held from 8 to 10 January 2013 in Zaragoza, Spain. Available from http://www.zaragoza.es/ciudad/medioambiente/onu/en/detallePer_Onu?id=710.

(c) **Preserving water resources and protecting the environment**. Cooperation facilitates the exchange of data and information and can help develop joint management strategies to preserve water resources and protect water-related ecosystems;

(d) **Promoting peace**. Cooperation on water can help overcome cultural, political and social tensions and build trust between communities, regions and States.

2. General arrangements: institutional arrangements and application of integrated water resources management principles

2.1 Demonstrate the importance and usefulness of basin-wide adaptation

Identify the mutual dependencies on the water resource and possibilities for cooperation. Also identify the economic benefits as well as (potential) cultural, political and social benefits.

2.2 Ensure that each adaptation policy considers climate change as one of many anthropogenic pressures on water resources

Other pressures include population growth, migration, globalization, changing consumption patterns and agricultural and industrial developments. These different stressors interact with each other and can have positive and negative feedbacks. This means adaptation strategies should be coordinated with other water management measures and integrated in an overall strategy. Scenarios can be helpful in assessing the possible effects of different pressures and in developing water management measures.

2.3 Involve decision makers in the adaptation process from the beginning to ensure that the process is connected with policymaking

In the area of climate change and transboundary cooperation, which can be highly political, it is crucial to bring together and involve both experts (or scientists) and policymakers from the beginning, even in the project elaboration phase, in order to ensure ownership and political support of the results achieved. This can be done through the creation of a working group in which all the different stakeholders are represented.

2.4 An institutional structure is essential to ensure cooperation between riparian countries in climate change adaptation

A joint body and joint basin management can be the means to deal with adaptation. Alternatively, a mandate can be created by a governing body, e.g., by the ministerial conference. Existing joint bodies should have or, if not, obtain the mandate to deal with adaptation.

2.5 Incorporate the ecosystem approach into adaptation strategies

The ecosystem approach is often relatively cheap and cost-effective. Increasing ecosystems' resilience can be done by including the ecosystem as a "water user" through environmental flows. Healthy freshwater ecosystems often have high natural resilience and can resist extreme events, and a transition into new ecological conditions can take place. "Hard" water infrastructure usually restricts or eliminates some of this natural resilience. "Soft" or "green" infrastructure to manage water can help combine control of water resources, restore flow regimes and rebuild natural climate resilience. Ecosystem-based adaptation has positive effects in addition to the direct effect on adaptation, such as improving the livelihoods of people. Ecosystem-based adaptation is particularly relevant in

(transboundary) basins which can be considered as one ecosystem and since ecosystem-based adaptation measures can have positive effects for the entire basin.

2.6 Apply transparency and openness throughout the process

When working together in a transboundary basin, transparency in methods used, transparency on uncertainties, on interests, etc., is needed to ensure the necessary mutual trust.

2.7 Ensure synergies and linkages between adaptation actions at different government levels (local, national, regional, transboundary) and different (economic) sectors

Numerous adaptation activities are already ongoing at the national level, with governments developing national adaptation strategies, adaptation plans, sectoral plans and numerous other policy documents. Transboundary adaptation strategies should be linked to and mainstreamed into those national adaptation strategies, also in order to ensure the eventual implementation of the measures.

3. The legal framework

3.1 Design transboundary agreements in a flexible way

New transboundary agreements should be designed in a flexible way so as to adapt to changing flow variability.

4. Stakeholder involvement in the whole process

4.1 Involve decision makers in the adaptation process from the beginning to ensure that the process is connected with policymaking

4.2 Ensure stakeholder participation in all steps of the development and implementation of adaptation strategies and measures

Interest of civil society needs to be developed for this.

4.3 Build transboundary teams among scientists, administrative authorities and experts to enable joint assessments

A joint group to harmonize the tools, methods, models and scenarios to be used is a good way to prepare a basin-wide vulnerability assessment and to advance adaptation in general. Such groups should include representatives of all riparian countries as well as different regions and sectors of basin-wide relevance. A proper exchange of information between the countries is imperative for this. A stakeholder analysis can help to identify persons to be involved. A thorough baseline study is needed to identify ongoing adaptation projects, strategies, laws and policies in the riparian countries.

5. Information and data needed, including data exchange at the basin level

5.1 Ensure collection and sharing of the appropriate and necessary data, information and models from the entire basin and across the water cycle

This includes quantitative and qualitative local knowledge, paleoclimatic records, surface and groundwater monitoring records, projected information (e.g., from the

Intergovernmental Panel on Climate Change), extreme event records, water supply/demand/ usage estimates, data for building climate, socioeconomic and environmental scenarios and an elaboration of a knowledge base on expected future changes. In situations where not all data are available, incomplete data, alternative sources (such as sometimes remote sensing/ satellite data) or expert opinions can be used instead.

To enable sharing of data, a common, integrated, accessible database is needed. Sharing of information and data can be done on a small scale at the beginning and then on a larger scale as countries and/or other data holders may initially be reluctant to share data. The various data sets need to be harmonized for scale, data resolution and focus of the data, so that data sets are usefully interoperable. The data included in the database need to be processed for verification, ground truthing, accuracy and precision and degree of uncertainty.

5.2 Evaluate thematic, spatial and temporal areas of data coverage and gaps

First, data needs should be discussed jointly at the transboundary level. Subsequently, available data need to be identified and compared. Lack of data should be clearly noted.

5.3 Ensure transfer of knowledge from science to decision makers and the political sphere

Knowledge transfer could be realized through a working group composed of decision makers and scientists.

6. Vulnerability and impact assessments

6.1 Develop a common understanding about the concepts of vulnerability, opportunity, impact and uncertainty related to climate change

Joint assessment of problems, priorities and solutions is crucial in (transboundary) basins.

6.2 Include all steps of the water cycle in the vulnerability assessment

This includes precipitation, run-off, groundwater recharge and a wide variety of water variables (e.g., quantity, quality and seasonality).

6.3 Cooperation with neighbouring countries in scenario and model elaboration and data exchange is crucial

Such exchanges make it possible to use a wider range of models and scenarios and achieve higher credibility of predictions thanks to more data.

6.4 Harmonize the use of climate, environmental and socioeconomic models and scenario development

To this end, national models can be linked together and compared. Ideally, basin-wide models and scenarios should be created.

6.5 Establish mechanisms for regularly updating the assessments, the scenarios of changes, and the implications for water resources in order to ensure flexible adaptation

6.6 Combine the vulnerability assessment with concrete measures and actions on the ground that increase adaptive capacity

For example, low or no-regret measures targeting floods or droughts.

6.7 Reconcile uncertainty and confidence in recommendations and strategy in the assessment results

7. Developing and prioritizing adaptation measures

7.1 To deal with the uncertainties of the data and information about climate change, an adaptive approach towards implementing measures is needed

7.2 Environmental impact assessment and strategic environmental assessment can provide an institutional and legal basis for climate change adaptation

7.3 Develop a mix of structural and non-structural measures

Effective adaptation strategies are a mix of structural and non-structural, regulatory and economic instruments, as well as education and awareness-raising measures to tackle the short-, medium- and long-term impacts of climate change.

7.4 Prioritize the adaptation measures

Prioritization of adaptation measures can be based on the vulnerability assessment and cost-benefit analysis as well as other decision-making tools, such as the Decision Support System developed by the Alliance for Global Water Adaptation (AGWA) and other similar tools. Such tools and their results should be sufficiently simplified for policymakers in a short document.

7.5 Involve other sectors in defining adaptation priorities

Other sectors can be involved in defining adaptation priorities, e.g., through multi-stakeholder workshops, looking for synergies with the adaptation plans of other sectors (energy, agriculture, etc.).

7.6 Assess the economic, environmental and social costs and benefits of different adaptation options

7.7 Consider linkages and integration with adaptation efforts at other management levels

Assess the potential transboundary effects of national and lower-level adaptation options. Mainstream transboundary adaptation measures, e.g., in national climate change strategies, etc., and vice versa. In addition, it is necessary to share information on national adaptation strategies and their implementation in the process of developing an adaptation strategy. Finally, it should be considered which issues need to be addressed at the transboundary/ basin-wide level — e.g., agriculture, ecosystems, infrastructure — and which issues, in contrast, do not require basin-wide coordination or action.

8. Financial and economic matters

8.1 Integrate the cost/benefit analysis and the financial mechanisms linked to the decision process

Financial issues form an important part of the decision-making process. One important element is to perform an initial approximate economic evaluation of the climate change impact on water resources in the basin in order to convince decision makers about the need to act. Further on in the process economic instruments and financial mechanisms can help to address the risks and the uncertainties.

8.2 Ensure financing of the adaptation plan through a mix of public and private funds

8.3 In a transboundary basin, it can be more beneficial to locate adaptation measures in another part of the basin and share the costs thereof

9. Evaluation of adaptation strategies

9.1 Implement concrete (low or no-regret) adaptation measures while continuing to monitor, evaluate and further develop the strategy

10. Capacity development

10.1 Identify the need for capacity development and develop a capacity-development plan accordingly

Capacity development focusing particularly on non-water areas, like planning, uncertainty management, forecasting, scenario development, etc., at the basin level may be needed.

10.2 Use education to raise awareness on the need of adaptation

10.3 Exchange knowledge and experience between stakeholders on the adaptation activities to learn and build capacities

11. Communication and dissemination

11.1 Stakeholder participation supports development of measures that take account of the local conditions

11.2 Involve local communities on the borders

11.3 Develop effective communication on adaptation to climate change and the related uncertainties

Proper communication is a means to translate technical/scientific vulnerability/impact assessment towards institutional governmental changes.

Annex II

List of good practices received as of 2 April 2014

Title	*Received from*
Forecasting model of water levels in Oubangui	Mr. Blaise-Léandre Tondo, Mr. Damien Brunel, International Congo River Basin Commission
Climate Change in the Albufeira Convention (Spain-Portugal)	Mr. Ampa Sereno, Lisbon University
Implementation of environmental planning in the context of climate change adaptation: the Lower Dniester case study	Mr. Alexei Andreev, Biotica, Republic of Moldova
Leading Factors for Climate Change Adaptation in the Context of Transboundary Water Management	Mr. John Labadie, independent expert
Brazil and the cooperation on transboundary basins in the era of climate change	Mr. Rafael Prado, Brazil
Strategic framework for the Neman River Basin adaptation to climate change based on climate and run-off assessment and forecasts, vulnerability assessment and intersectoral cooperation	Mr. Vladimir Korneev, Belarus
Classification of the Dniester Basin (Moldovan part) by its vulnerability to climate change	Mr. Roman Corobov, Eco-Tiras, Republic of Moldova
Transboundary cooperation in flood risk management at the river basin level, taking into account impacts of climate change	International Sava River Basin Commission
Niger basin case study	Mr. Daniel Sighomnou, World Meterological Organization
Development of measures aimed at adapting a transboundary basin to climate change	Mr. Iurii Nabyvanets, Mr. Mykola Babych, Ukraine