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## Economic Commission for Europe

### Committee on Environmental Policy

#### Seventeenth session

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Item 6 (d) of the provisional agenda

#### Preparations for the Seventh “Environment for Europe”

Ministerial Conference: official substantive documents

### **Draft extended outline of the official substantive document on Sustainable Management of Water and Water-related Ecosystems\***

#### **Note by the secretariat in consultation with the Bureau of the Committee on Environmental Policy**

#### *Summary*

Pursuant to a decision by Ministers at the Sixth “Environment for Europe” Ministerial Conference (Belgrade, 2007), the Seventh “Environment for Europe” Ministerial Conference will be held from 21 to 23 September 2011 in Astana, Kazakhstan.

The Reform Plan<sup>1</sup> of the “Environment for Europe” (EfE) process stipulates that in order to reduce the amount of documents for the Conference, only one official document per selected theme will be prepared by the United Nations Economic Commission for Europe (UNECE) or another EfE partner, in close cooperation with other EfE partners.

At its sixteenth session, in October 2009, the Committee on Environmental Policy decided on two main themes for the Astana Ministerial Conference. One of the main themes will be “Sustainable management of water and water-related ecosystems”.

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\* Late submission due to the need to consult with partners.

<sup>1</sup> The Reform Plan of the “Environment for Europe” process was developed by the United Nations Economic Commission for Europe (UNECE) Committee on Environmental Policy during 2008 and adopted on 29 January 2009 (ECE/CEP/S/152 and corr.1, annex I); the Plan was subsequently endorsed by the Economic Commission for Europe at its sixty-third session (Geneva, 30 March–1 April 2009).

The Extended Bureau of the Committee, at its meeting in March 2010, requested the secretariat, in consultation with the Bureau, to develop draft outlines of the official substantive documents on the two themes of the Conference for submission to the seventeenth session of the Committee.

Following that request, the present document was prepared by the UNECE secretariat in partnership with the United Nations Environment Programme (UNEP), the Food and Agricultural Organization of the United Nations (FAO), the Regional Office for Europe of the World Health Organization (WHO-EURO), the World Meteorological Organization (WMO), the European Environment Agency (EEA), the Organization for Economic Cooperation and Development (OECD), the secretariat of the Convention on Wetlands of International Importance (Ramsar Convention) and the Global Water Partnership (GWP), as well as with some members of the Bureau of the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention). The document was developed in close consultation with the Bureau of the Committee, and it reflects the comments received, suggesting compromise solutions wherever there were differences of position.

The Committee is invited to advise the secretariat and the EfE partners on this outline and its further development. In particular, the Committee is invited to:

- (a) Comment on the scope and focus of the paper and recommend whether it should be restricted to fewer issues — and if so which ones — or, on the contrary, whether it should aim to reflect more extensively the variety and complexity of aspects related to the theme throughout the region, taking into account the length limitation of the document (10,700 words);
- (b) Suggest examples of specific issues, challenges and achievements which are exemplary and can provide guidance to other concerned countries, as well as additional recommendations that the document should contain;
- (c) Examine and revise, as needed, the questions for discussion, taking into account the desired political outcomes of the Ministerial Conference;
- (d) Mandate the secretariat to proceed with preparing the document on the basis of comments and discussion.

Comments by the Committee will be reflected in a revised document, which will be consulted with the Bureau. Thereafter, the drafting of the document's substantive content will commence with a view to having it ready in time for the special session of the Committee in May 2011.

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<sup>2</sup> Paragraph numbers will be filled in the finalized document.

## I. Introduction

This part of the document will include a short introductory text on the purpose of the document and the process of its development.

## II. Main messages and policy recommendations

To be developed following the finalization of the main text of the document.

## III. Water, ecosystems and health

### A. The issue and recent trends<sup>3</sup>

+/- Improved water quality in Western Europe due to better regulation and enforcement, and in Eastern Europe due to economic decline. However, there are remaining pressures from agriculture, industrial and domestic wastewater, mining, old chemical burdens, unsafe landfills as well as absence and/or degradation of sewage systems and wastewater treatment plants.

+/- Improved river hydromorphology (reconnection of wetlands and floodplains, and improvement of river continuity), but hydromorphological alterations are still a major challenge to good ecological status in the European Union (EU).

+ Water-related ecosystems and their services support water resources management as they capture, filter, store and distribute water. Their protection and sustainable use ensure a reliable water quantity and quality. The recognition of services of water-related ecosystems (for both water quality and quantity) and of biodiversity services has increased.

- At the same time, the needs of water and water related ecosystems in Central Asia, the Caucasus and Eastern Europe are not taken into account in economic planning and water governance systems. Environmental needs are neither considered nor prioritized.

- The system of regulation and assessment inherited from the Soviet era (and still in use in many countries in Eastern Europe, the Caucasus and Central Asia), based on the concept of Maximum Permissible Discharge (MPD) of pollutant parameters, imposes often unrealistic investments and impracticable pollution control requirements.

+ Establishment and development of protected area systems throughout the region.

+/- Differing progress regarding access to water and especially sanitation depending on subregion and social group, despite recognition of the right to water and sanitation by the United Nations General Assembly. Access to sanitation is a serious challenge in the eastern part of the region, especially in rural areas, where trends have shown no significant improvements since 1995 and the relevant Millennium Development Goal might not be achieved.

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<sup>3</sup> +/-, - or + indicate the positive trends (progress) and – negative ones.

+/- Some progress regarding water-related diseases in Eastern Europe, Caucasus and Central Asia, but also stagnation in the levels of some old diseases and the emergence of new water-related diseases, in part owing to environmental changes.

- Continued decline of water-related ecosystems (wetlands) and their services, as well as loss of biodiversity.

## **B. The way forward: tackling challenges and building on achievements**

Need to:

1. Strengthen commitment for improving quality of water and water-related ecosystems especially in the eastern part of the region (discharge permits and limits for pollutants discharge, monitoring and enforcement, investment in wastewater treatment).
2. Reform agricultural policies to reduce water pollution (good example: Netherlands tax on nutrients).
3. Adopt an ecosystem approach to water management and enforce the principle of minimum environmental flow. Increase investments in river restoration schemes to ensure minimum environmental flow, reconnect wetlands and floodplains with rivers and where possible ensure river continuity through fish passes.
4. Strengthen wetland/ecosystem protection/restoration through financial, structural and management measures.
5. Establish integrated ecosystem planning and management (water, forests, wetlands, etc.) and ensure a better coordination between integrated water resources management (IWRM) plans and plans and strategies of other sectors.
6. Improve integration and cooperation between sectors, such as water, health, forest, environment protection and conservation, and agriculture. A positive achievement is the progress regarding ratification and implementation of the Protocol on Water and Health, which fosters intersectoral cooperation, but more efforts are needed for adequate implementation.
7. Develop and upgrade monitoring and assessment systems for water and water-related ecosystems in the countries of Eastern Europe, the Caucasus and Central Asia and strengthen surveillance of water-related diseases (financing, human resources and equipment, monitoring and assessment should cover both water quality and quantity and be based on both measurements of pollutant loads as well as water determinants).
8. Mobilize financial resources for investments in water supply and sanitation through appropriate prices for water and ecosystem services.
9. Value ecosystems and their services and implement payments for ecosystem services (PES) and develop PES in closer cooperation with other sectors (e.g., afforestation) and to bundle services. Some existing good practice (New York, Vittel, etc.) and development of pilot projects to implement PES in Eastern Europe, the Caucasus and Central Asia (Issik Kul).
10. Strengthen transboundary cooperation on water quality, especially in the eastern part of the region, looking at the model of EU well-established good practices.
11. Strengthen transboundary cooperation on ecosystems (e.g., wetlands, forests).

### **C. Questions for discussion**

(a) Which set of policies, plans and measures (for both water quantity and quality) proved the most effective to protect human health?

(b) Which policies proved to be effective to value and maintain the services of water-related ecosystems, such as wetlands, forests, etc., including biodiversity services?

(c) What are the barriers to developing and implementing long-term action plans for the protection of water and water-related ecosystems in the region?

(d) How can PES be used to improve water quality and quantity? What are the next practical steps for PES implementation in the Eastern European, Caucasian and Central Asian region?

(e) What are the existing good experiences of cooperation in transboundary basins to improve water quality/quantity and protect ecosystems? What kind of decisions and practical actions may help in improving cooperation for the protection of water and water-related ecosystems?

## **IV. Improving water governance at the national and transboundary level**

### **A. The issue and recent trends**

+ Development of international legal framework for the management of water and water-related ecosystems: EU legislation — in particular the EU Water Framework Directive (WFD) — UNECE Conventions and Protocols — in particular the Water Convention and its Protocol on Water and Health — and other international instruments at the global level (Ramsar Convention, United Nations Convention to Combat Desertification, United Nations Framework Convention on Climate Change, Convention on Biological Diversity, etc.), as well as regional Conventions.

+/- Increased recognition and (to a lesser degree) application of IWRM and establishment of regulations and procedures for water quality and quantity in the EU and the countries of South-Eastern and Eastern Europe, the Caucasus and Central Asia. At the same time, increasing intersectoral competition for water quantity and quality.

+ Development of IWRM plans and of river basin management (RBM) plans in many river basins, identification of river basin authorities and programmes of measures in the EU as part of EU WFD implementation.

+/- Progress in transboundary cooperation is varied in the region.

+ Increased stakeholder involvement in the water governance processes, including the private sector.

### **B. The way forward: tackling challenges and building on achievements**

Need to:

1. Develop/enhance and implement relevant national legislation in some countries and improve compliance, although some positive ongoing reform of the water sector.

2. Improve implementation of multilateral environmental agreements (MEAs) at the national and subnational level.
3. Foster synergies and integrate implementation of global and regional MEAs.
4. Build and strengthen human capacity in national authorities responsible for management of water and water-related ecosystems. This is owing to the fact that, at present, institutional capacities vary in key water-using sectors (agriculture, energy, municipal supply) and in regulatory agencies, including differing capacity in the public/private sectors. There are also problems of continuity of staff in national authorities due to frequent political changes, as well as reductions in staff in Western European countries due to the financial and economic crisis (in particular in the new EU countries).
5. Mobilize more financial resources in many countries with economies in transition, as well as reverse the decline in Western European countries due to the crisis. Currently there are difficulties in financing the WFD programmes of measures in EU countries, which also raises doubts on the direct application of the EU WFD beyond the EU. There are also difficulties in defining cost recovery and (also due to political reluctance) difficulties in applying the polluter-pays and user-pays principles.
6. Make better use of economic instruments, enforce them and share experience.
7. Establish clear and robust policy frameworks for financing water resources management.
8. Integrate sectoral water strategies/policies (e.g., agriculture, hydropower generation, forest and water) and ensure that incentives/subsidies do not conflict with or damage other sectors.
9. Empower the National Policy Dialogues (NPDs) on IWRM and on water supply and sanitation in the countries of Eastern Europe, the Caucasus and Central Asia and take advantage of the processes to strengthen water governance in these countries. To this end, ensure the long-term sustainability of these processes.
10. Foster public-private partnerships, develop regulations for private sector involvement and facilitate investments.
11. Increase stakeholder involvement, including through the creation of water user associations (WUAs) and their national/basin federations.
12. Use more widely the guidance material to support water governance developed by international organizations, including under the different MEAs.
13. Establish/revise/strengthen the legal and institutional frameworks for transboundary water cooperation, in particular in Eastern Europe, the Caucasus and Central Asia and South-Eastern Europe, building on the positive examples such as the Chu Talas Commission, or the process in the Drin basin as well as the positive experience in Western Europe. When missing, include the status of water and water-related ecosystems in the scope and objectives of cooperation.
14. Link transboundary water cooperation to related policies (agriculture, energy, navigation, tourism, etc.).
15. Use a broad set of instruments for transboundary water cooperation, including economic instruments.
16. Strengthen cooperation with non-UNECE countries sharing waters with UNECE countries (Afghanistan, Iran, China, Mongolia, etc.) and speed up the entry into

force of the amendments to open the Water Convention and other UNECE Conventions outside the UNECE region.

### **C. Questions for discussion**

(a) What are the best instruments/measures to encourage cross-sectoral cooperation with different sectors such as agriculture, health, energy and industry? How can National Policy Dialogues help in this process?

(b) How can UNECE instruments, EU WFD tools and IWRM or watershed management principles to protect and sustainably manage water and water-related ecosystems be better applied in the region? How can progress be benchmarked and assessed?

(c) How can the private sector and the local WUAs improve water supply and sanitation services?

(d) Which mechanisms and instruments proved to be effective in addressing the often conflicting interests in managing transboundary water resources and promoting cooperation?

(e) How can trust and long-term cooperation be built between upstream and downstream countries in the Eurasian region, including Central Asia, the Russian Federation, the Caucasus and non-UNECE neighbouring countries?

(f) How can public-private partnerships contribute to the protection of water and water-related ecosystems? Which forms and institutions are most effective for such partnerships, taking into account the specificities of the different subregions, in particular the Eastern European, Caucasian and Central Asian region (such as short-term approaches, continuous institutional changes, and limited capacity of civil society)?

## **V. Extreme events and climate change**

### **A. The issue and recent trends**

- Impacts of extreme weather events and climate change are increasing and visible on UNECE water resources:

- Increased variability in precipitation, glacier melting, increases in air and water temperature;
- Increased and longer duration of floods and droughts in the region;
- Increased vulnerability to extreme events due to construction on flood-plains etc.;
- Impacts of changes in water availability on other sectors such as hydropower, irrigation, tourism, fisheries, etc.;
- Impact of extreme climate events on water quality, ecosystems and their functioning;
- Cost of achieving current water policy goals will increase due to climate change;
- Climate-independent solutions to achieve water security (e.g., desalination, re-use) are highly energy-intensive and contribute themselves to climate change.

+ Development of adaptation strategies is starting. The importance of water management in the process of adaptation is increasingly recognized, as well as its role in



mitigation (reforestation, water transport etc.): e.g., the Delta Programme in the Netherlands and activities to promote adaptation to climate change under the EU.

+ Development of sound guidance material and of implementation projects: e.g., Water Convention Guidance on Water and Adaptation to Climate Change; the programme of pilot projects to adapt to climate change in transboundary basins under the Water Convention and in cooperation with ENVSEC and other partners; the “River basin management in a changing climate — a Guidance document” issued by the Water Directors of EU member States, as a result of the European Commission White Paper, “Adapting to climate change”; and the Guidance on water supply and sanitation in extreme events under the Protocol on Water and Health.

## **B. The way forward: tackling challenges and building on achievements**

Need to:

1. Increase prevention and response capacity to extreme events and to long-term impacts of climate change through flood risk mapping and flood risk plans; vulnerability assessment in water plans; mainstreaming disaster risk assessment, preparedness, and reduction and climate change in other sectoral policies; and moving response from emergency to preventive planning.
2. Integrate extreme events plans together, e.g., drought management plans; integrated flood management plans (including “more space for waters”); plans to combat desertification in the framework of land use planning (e.g., to avoid building infrastructure (houses, roads, power plants) in flood-prone areas).
3. Manage groundwaters so that they can act as “natural dams” to be tapped during droughts so as to protect productive investments (such as perennial crops).
4. Strengthen the knowledge base and the availability of climate information for decision-making, including through the integration of hydrological and meteorological networks.
5. Enact a multidisciplinary approach and coordination among institutions to be involved in coping with extreme events and climate change adaptation, ensuring coherence and synergies between adaptation measures in different sectors.
6. Promote the development of local, national and transboundary basin-wide adaptation strategies in cooperation with other sectors.
7. Strengthen human capacity and develop training.
8. Share good practices examples.
9. Use low- and no-regret measures, flexible investment and measures aimed at increasing ecosystem resilience, as climate-proof water infrastructure is more expensive.
10. Determine and increase resilience to extreme events in water supply/drainage/sanitation systems/facilities and include the risks of extreme weather events in the overall water safety plans of municipal and industrial facilities.
11. Ensure transboundary cooperation when designing and implementing adaptation and mitigation strategies to reduce risks of negative impacts caused by uncoordinated/conflicting unilateral measures in transboundary basins

### **C. Questions for discussion**

(a) How will climate change impact water use by major water users and how can development planners build these changes into their medium- and long-term plans? What are the priorities in adapting water management to climate change? How could the “Environment for Europe” process facilitate adaptation of UNECE countries to climate change?

(b) How can the challenges faced by water supply and sanitation services owing to both increased and more severe extreme weather events be addressed?

(c) How can resilience be built to allow countries to adapt? What is the proper balance between hardware (built infrastructure-dams) and software (e.g., legislation) in handling these issues?

## **VI. Improving water use efficiency and raising water productivity**

### **A. The issue and recent trends**

+/- Importance of increasing water use efficiency both for adaptation (reduced water needs) and mitigation (reduced energy needs for pumping, water treatment and sewage treatment).

+/- Contrasting subregional contexts (i.e., economic limits of water efficiency, especially in areas which are not water-scarce).

- Slow progress in raising water productivity and improving water use efficiency due to several challenges: low interest of State-owned facilities (Eastern Europe, the Caucasus and Central Asia) to save water; low public awareness regarding possibilities for saving water in households; and political issues, such as the strong influence of farmers, low prices of water for irrigation and social difficulties in increasing water prices.

### **B. The way forward: tackling challenges and building on achievements**

Need to:

1. Develop training programmes for farmers and awareness-raising campaigns for households using the tools under the UNECE Strategy for Education for Sustainable Development.
2. Make water use sectors more accountable.
3. Increase application of demand management measures and do not rely on supply-side approach.
4. Strengthen knowledge and awareness of water consumption by economic sector in countries, including trade in water between countries (virtual water).
5. Invest in replacing/maintaining old infrastructure that causes huge losses in water distribution for irrigation and for urban water supply.
6. Aim at introducing universal water metering and progressive water pricing where the economic conditions allow.

7. Replace obsolete techniques and technologies in industry, introduce incentives to change them and make use of high water-efficient technologies.
8. Improve irrigation systems and replace water-intensive crops in semi-arid/arid regions, also addressing the economic, social and political barriers, and taking advantage of existing technologies such as precision agriculture and re-use of treated wastewater.
9. Encourage role of private sector for improving water efficiency and productivity for both industry and the agriculture sector, fostering public-private partnerships and the transfer of knowledge.

### **C. Questions for discussion**

- (a) Which mixes of policy, measures and practical tools are the most effective to improve water efficiency by different water users, especially households, industrial operations and agricultural use, and what is the role of economic instruments therein?
- (b) How can the expansion of water-intensive products and industries be contained? How can the virtual water approach help in this regard?
- (c) How and under what circumstances can progressive water pricing be utilized to improve water use efficiency?
- (d) What tools are useful to build public awareness of water use efficiency?

## **VII. Investments and sectoral issues**

### **A. The issue and recent trends**

+/- Water resources management is an important sector that can play a crucial role in greening the economy. In particular the water sector is an important energy user.

+/- Since other sectors — industry, agriculture, transport and energy — can significantly influence the status of water and its ecosystems, investments in these sectors to achieve sustainable water management are also extremely important.

- Still inadequate knowledge is available on this subject, accompanied by low political awareness.

### **B. The way forward: tackling challenges and building on achievements**

Need to:

1. Set up reasonable prices for water use to cover investments and operations in water supply and sanitation, as well as protection of quality and quantity of water.
2. Introduce financial incentives for saving water, use of Best Available Technology in industry.
3. Prioritize demand management as a way of decoupling economic growth from water use.
4. Review water allocation mechanisms at the national and regional levels to ensure that water allocated to productive uses maximizes the contribution to economic growth (flows to highest value use).

5. Invest in “natural infrastructure” such as upper basin management and wetland/ forest restoration, when it is cost-effective for achieving water policy targets.
6. Invest in hard infrastructure (i.e., dams) to protect current assets at risk, when economically efficient, and devise retrenchment strategies for other cases.
7. Define clear rules for new investments and for trade: for instance introduce water efficiency in public procurement or ensure that investments in, e.g., hydropower plants or navigation do not negatively affect hydromorphology of streams (minimum, flows, river continuity barriers etc.), which has serious impact on water ecosystems, fish and biodiversity.

**C. Questions for discussion:**

- (a) How can it be ensured that the needed investments in irrigation, drainage, water supply and sanitation infrastructure are “green”?
  - (b) What are the impacts of water policies on greening other sectoral policies?
  - (c) How could greening the economy contribute to reducing water scarcity and drought problems?
-