



Convention on the Protection and Use of Transboundary
Watercourses and International Lakes

Working Group on Water Management
Fourth meeting
Agenda item 5 (a)

Working Paper N. 3
English version

INTEGRATED WATER RESOURCES MANAGEMENT (IWRM) INCLUDING TRANSBOUNDARY RIVER BASIN ISSUES

Background paper for the Environmental Strategy of the 12 countries in Eastern Europe, the Caucasus and Central Asia (EECCA), prepared by the United Nations Economic Commission for Europe (UNECE) and the Global Water Partnership (GWP) ¹

¹ This paper draws mainly on the Environmental Performance Reviews carried out by UNECE in Armenia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Ukraine and Uzbekistan, and by OECD in collaboration with UNECE in Belarus and the Russian Federation; as well as on the conclusions and recommendations of the second International Conference on Sustainable Management of Transboundary Waters in Europe (Miedzyzdroje, Poland, 21-24 April 2002) that marked the 10th anniversary of adoption of the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes. Use was also made of the most recent publications of United Nations bodies and the European Environment Agency (EEA). Input was also provided by the Regional Office for Europe of the World Health Organization that carries out, jointly with UNECE, the secretariat functions for the Protocol on Water and Health.

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Introduction

Access to safe water is a fundamental need and a human right, vital for dignity and health of all people. Furthermore sustainable nature resource development is crucial for creating jobs, attracting investments and generating funds for social development and for ensuring the availability of resources for generations to come (UNECE Regional Ministerial Meeting for WSSD). Effective development and management of water resources are essential for sustainable growth and poverty reduction.

The challenge of water resources management has become acute for the newly independent States (NIS), hereinafter referred to as EECCA², as water scarcity grows, quality declines, environmental and social concerns mount and the threats posed by floods and drought are exacerbated by climate change. Furthermore the unsustainable use and inefficient protection of the quality of water have economic, social and public health impacts that constitute potential sources of conflict.

Many EECCA countries consider water management and its interrelation with agriculture, industry and public health among their highest priorities. Their recent policies call for improvement in the area, but financial resources for full implementation are only partially available.

Integrated water management is a multifaceted concept and water management is gradually extending its scope: it integrates surface water and groundwater, coastal water and the marine environment, on the one hand, and water, land, legal, social and economic aspects, on the other.

In order to reach the objective of the EECCA Environmental Strategy's part on "integrated water resources management including transboundary river basins", activities should include development and harmonization of evidence-based policies and legislation; definition of organizational roles and strengthening of institutions; pollution prevention and control; integration of environmental considerations into sectoral policies; elaboration of financing mechanisms; development of democracy in decision making; and establishment of transboundary cooperation.

² The EECCA is an abbreviation for Eastern Europe, Caucasus and Central Asia and it includes the following countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

I. CHALLENGES

A. Major problems

Sub-optimal management of water resources has negative effects on human health, the environment, the economy and can be a cause of international conflicts. The EECCA Environmental Strategy's water component could particularly address:

- Quality of water resources; and
- Allocation of water resources.

1. *Quality of water resources*

Pollution of surface and groundwater is a serious problem in the whole region. The quality of water from surface sources is low as a result of discharges of insufficiently treated and untreated sewage from populated localities and industrial plants, as well as of industrial accidents. In the EECCA, only 60 per cent of the population is connected to sewers; for 18 per cent of these, wastewater is discharged untreated. The remaining wastewater is treated before being discharged into surface waters, mainly by secondary treatment to remove organic matter.

Irrigation and use of fertilizers, manure and pesticides in agriculture can lead to increased salinity and pollution of surface waters and/or groundwaters by nitrates, phosphorus and pesticides. The quality of surface waters and groundwaters is also affected by waste-water discharges from industries (mainly mining and chemical industries), industrial accidents including accidents with tailing dams and pipelines and leakages from municipal landfills, leading to a high concentration of heavy metals and other toxic chemicals.

For drinking water supply, the situation is aggravated by the unsatisfactory sanitary and technical conditions of water supply equipment and networks, a shortage of chemicals for purification, a low standard of laboratory equipment, and often source water compromised by man-made and natural contamination.

This situation has a very serious impact on health, with more than 1/3 of the population in some countries using drinking water that does not meet hygiene standards. In some sub-regions this proportion can exceed 50%. Infectious intestinal diseases, often caused by poor drinking water, are among the main causes of infant mortality in the southern regions of the Russian Federation and in Central Asia ³.

³ WHO/EURO is establishing an evidence-base under the Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, particularly with inputs from the Russian Federation and Central Asia countries.

Floods are a major concern in all EECCA countries. Following the outcome of the 1999 UNECE Seminar on sustainable flood prevention, floods of different magnitude and origin threaten 400,000 km² of land in the Russian Federation. Out of this area, more than 150,000 km² (including some 300 major cities, thousands of rural settlements, industrial areas and some 7 million ha of agricultural land) suffer from floods with return intervals of 20 to 100 years. The annual average damage is in the order of 1.45 billion USD, and there is also a high risk of infection in flooded areas with 1.5 million cases each year.

Environmental and health-related effects of water pollution and floods are frequently serious. Biodiversity in water as well as other biotopes may also be significantly affected as a result of pollution and flooding..

2. *Allocation of water resources*

The problem of water allocation should be considered both in a national context (sharing of water between various uses/users within a country) and a transboundary context (sharing of water between two or more countries in a transboundary river basin). It includes the problem of water stress, water scarcity and competition between water uses and/or users.

In the national context, restricted access to water for domestic use and agriculture is a major problem in some parts of the region, particularly in Central Asia, in the southern part of Ukraine and in the South of the European part of the Russian Federation. Important reasons are poor management and frequently inefficient irrigation systems leading to over-consumption of water in agriculture. Agriculture is the dominant water user in Central Asia, accounting for more than 90 per cent of total use. Inefficient irrigation practices, poor water resources management and lack of incentives for water conservation are among the main causes of water scarcity. Over-exploitation of water, especially increasing use of groundwater for public water supply, and over-use of surface water for irrigation, has serious consequences such as drying-up of spring-fed rivers, salinization of (shallow) groundwater resources, destruction of natural wetlands and salt-water intrusion in coastal aquifers. In the case of Central Asia, the vanishing Aral Sea is a particular concern.

Sub-regional agreements on water allocation has been working since 1992 in Central Asia and in other EECCA countries, and before that within the Soviet Union. However, competition among water users on how to share water both within countries and internationally between upstream and downstream countries is in many cases not resolved. In Central Asia, for example, upstream countries prioritise the use of water for hydroelectricity generation in winter whilst downstream countries mainly use water for irrigation in summer. Reasonable and equitable use of water resources is also a problem in river basins such as the Kura basin (shared between Azerbaijan, Georgia and Armenia) or the Samur basin (between the Russian Federation and Azerbaijan).

B. Tools for water management

Important tools that need to be developed in order to tackle the above issues are:

- Legal and regulatory framework and its implementation;
- Establishment and strengthening of institutions;
- Improvement of infrastructure and non-structural measures related to water, human health and the environment;
- Monitoring and assessment;
- Access to information and public participation;
- Development of concerted action programmes; and
- Financing (as an integral component of all the above topics).

1. *Legal and regulatory framework and its implementation*

The regulatory framework is frequently not optimal and its implementation weak. Clear, evidence-based targets are often lacking and enforcement mechanisms tend to be insufficient. There are still many outdated regulations and standards, which are inconsistent with international guidelines (e.g. WHO drinking water quality guidelines), too complex and sometimes unrealistic. In other cases, regulations on quality of raw water destined for the production of drinking water, are lacking from the national legal instruments. Another problem is the lack of the necessary by-laws needed to implement the environmental legislation (operational regulations on monitoring, procedures for expertise, auditing, insurance, public access to information, public participation, certification, procedures for emergency situations), which leads to inconsistencies in the implementation of environmental policies, and limits their effectiveness.

The enforcement activities have further not received sufficient political and financial support, the enforcement tools are often ineffective, and the compliance efforts insufficient and not prioritised. This, together with sometimes unrealistic environmental policies, is the reason for widespread violations of environmental laws.

Another important issue is the insufficient level of cooperation on transboundary waters. A particularly difficult issue of the EECCA countries is the fact that many water allocation and pollution problems that were previously national issues within the Soviet Union are now transboundary issues. This requires a new and negotiated legal and regulatory framework for water resources management between sovereign States, which has proven difficult to achieve. Even if there are agreements between countries, these are not always implemented, may not be effective tools to tackle the relevant issues, nor address social, economic and environmental impacts.

2. *Establishment and strengthening of institutions*

Institutions and bodies responsible for water resource management are already in place, but there is sometimes not a clear definition of responsibilities. An unclear division of responsibilities together with lack of communication and coordination between the authorities often cause “gaps” in or duplication of decisions and activities. Lack of resources is also a frequent problem.

Even if significant efforts have been and are being made in the EECCA to raise the capacity of staff, further efforts are needed.

Organization of institutions is crucial in order to obtain a good public participation, which is not very common in the EECCA where the representation of or the communication with the different stakeholders is not adequate.

Bilateral or multilateral river basins commissions, which are needed for the management and cooperation between countries in transboundary river basins, have not always been established.

3. *Improvement of infrastructure and non-structural measures related to water, human health and the environment*

Water infrastructure is often obsolete, e.g. reservoirs are silting up, water distribution networks are leaking, with huge consequences in water losses, which can be up to 50%. Faulty networks may pose a direct threat to human health partly through influx of polluted water from the surrounding soil, partly through incompetence of the managers of the network who have been known to close down the network when significant leaks are detected thus even strongly furthering entry of polluted water into the network. Irrigation systems are falling into disrepair affecting efficiency.

The extent and consequences of these losses are not fully recognized, since the operational arrangements for monitoring and controlling leakages are often weak.

The conditions of dams and pipelines are another concern: due to a general lack of maintenance over a long period of time, their safety is, in many cases, not guaranteed.

For what concerns wastewater treatment installations, not all industrial and municipal water is treated, and also the efficiency of the treatment in existing treatment plants is sometimes inadequate due to either faulty design and/or operational difficulties.

Contingency plans and warning systems to counteract accidents and serious effects of possible accidents are often missing.

4. *Monitoring and assessment*

Adequate information, based on reliable data, for decision-making and the public, is a necessary precondition for the protection and sustainable use of water. In many cases, reliable data are not available, monitoring stations not working, laboratory equipment and methods not adequate and monitoring systems not harmonized in the basins, due to different methodologies and equipments and/or lack of funds for operation and maintenance. Thus, water quality and quantity is not correctly assessed.

Present knowledge and information for decision-making on water and land, and related socio-economic factors, is not sufficient, not reliable, not consistent and reporting not sufficiently well organised for planning and decision-making, nor to provide information to the public.

5. *Access to information, public participation and access to justice*

Access to information, public participation and access to justice are important to enhance the quality and the implementation of policies for sustainable integrated water management. These aspects should receive particular attention especially with regards to monitoring and assessment as well as organization of institutions and promotion of compliance (see above). In the EECCA, despite a general effort, environmental awareness is sometimes restricted and access to information, public participation and access to justice still limited.

6. *Development of concerted action programmes*

In EECCA, as in many other countries, integrated water resources management (IWRM) as a holistic approach to the management of water in river basins (and its link to coastal/marine waters) is still in its infancy. An inter-sectoral approach for the prevention, control and reduction of negative effects on the environment, infrastructure and human health should be employed by the EECCA countries in their endeavour to prevent damage to the water environment; ensure the conservation and, where necessary, the restoration of aquatic ecosystems; prevent damage by waters, including river regulation, drainage, floods, droughts and erosion; and foster water-demand management measures, including water supply services and the rational use of water.

By definition, the above implies work related to the prevention, control and reduction of water-related diseases⁴, in particular, work to be undertaken under the Protocol on Water and Health, including the assessment of water-related diseases in the EECCA.

Concerted action programmes, established to deal with the whole complex of problems and needs, are in most cases lacking.

⁴ "Water-related disease" means any significant adverse effects on human health, such as death, disability, illness or disorders, caused directly or indirectly by the condition, or changes in the quantity or quality, of any waters.

7. *Financing*

Financing of water management is frequently weak, an important reason being the difficult overall economic situation many EECCA countries are facing. In particular, there is a shortage of funds for investments in water supply for drinking water and irrigation, wastewater treatment and sewage systems. Most countries, despite the introduction of discharge and abstraction permits and pricing mechanism for water use, do not have fully functioning systems for self-financing of provision of services, such as drinking-water supply and waste-water treatment.

The resources devoted to water management are not sufficient and lower than even minimal cost estimates. Due to the lack of clear priorities, the few available funds are often divided over the measures to be taken, which can result in no single measure being fully implemented.

Financing is covered in more detail in the background paper on financing mechanisms.

II. ACTION TAKEN TO-DATE

During the 1990s, EECCA countries have made significant efforts in environmental management and are continuing to do so. Nevertheless, economic and social difficulties in the transition to a market economy are important reasons why the efforts have not always been successful. The economic and social difficulties are also reasons why environmental issues today are not among the top priorities in these countries.

Since their independence, the EECCA countries have adopted basic environmental legislation and introduced new environmental policies, generally based on a combination of legal and regulatory instruments (e.g. standards, norms, environmental impact assessment, permits for water abstraction and discharge) and economic instruments (e.g. charges for water use and pollution discharge, fines). Notwithstanding difficulties and severe human and resource constraints, environmental enforcement agencies have continued their efforts to control compliance and enforce environmental laws.

The administrative system for river basin management was already developed in the Soviet Union in the 1980's. The Russian Federation continues using this concept. Many other countries have also recognized the advantages of the river-basin approach for water management and, after testing it on particular basins (for instance the Dnieper basin in Ukraine) are now considering using it more widely. The approach has proven to be useful not only for pollution control, but also to optimise funds collection and use.

Several measures for water conservation have been adopted. Economic instruments, mainly based on the "polluter and user pay" principles have been introduced (abstraction charges, permits, increased water charges and taxes). More could be done to change consumer attitudes, especially by introducing metering, which has proven to be a very efficient tool to reduce water use.

There exists a variety of jointly agreed principles, approaches and best practice to manage national and/or transboundary waters and resolve the above problems. Examples include guiding documents drawn up under the UNECE Water Convention (see annex I).

The EECCA is part of the UNECE region, the only region where a unique legal environmental framework has been put in place. Among the five regional environmental conventions, two focus on the protection and use of transboundary watercourses and international lakes; and the preparedness for, and response to industrial accidents. The Protocol on Water and Health addresses the prevention, control and reduction of water-related diseases; and a legally binding instrument on civil liability for damage to transboundary waters due to industrial accidents is being prepared for adoption and signature at the Kiev Ministerial Conference. The EECCA countries have been very active at the international level, participating in the negotiations of UNECE environmental conventions, ratifying many environmental conventions and developing sub-regional cooperation on the basis of various bilateral and multilateral agreements.

Also with regards to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention), the EECCA countries have been very active: almost all countries have ratified it and are promoting its implementation through different activities (workshops, creation of environmental information centers).

There has also been a certain activity with regard to negotiating and signing water basin agreements according to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes during the past years. Examples on new agreements are between the Russian Federation and Estonia on the Lake Peipsi-Narva basin, between the Russian Federation and Belarus, Russian Federation and Kazakhstan and between Kyrgyzstan and Kazakhstan on the rivers Chu and Talas. The agreement of 1993 between the states in Central Asia to continue the allocation of water in the Syr Darya and Amu Darya basins according to practices and quantities employed during Soviet times, and its implementation has been very important for a region where access to water is restricted. An agreement has been successfully concluded between Azerbaijan and Georgia on the river Kura, however, little progress is expected to be made for the other parts of the entire catchment area (i.e. the area shared by Azerbaijan, Armenia and Iran, i.e. the sub-basin of the river Araks).

Funding for water management activities is obtained from national, regional and local budgets and environmental funds, and from private investments. Bilateral and multilateral official development assistance (ODA) and International Financing Institutions have contributed to funding of projects aiming at developing water management as well as to investments in drinking water supply and waste-water treatment. Examples of funding sources include the European Union (see annex II), the European Bank for Reconstruction and Development, the World Bank and the Global Environment Facility. However, while international investment projects on wastewater treatment and improvement of drinking water supply have developed successfully in Central and Eastern Europe, in particular in the Candidate Countries to the EU, such projects are not frequent in the EECCA countries.

Further details are provided in the background papers on Financing mechanisms and on Urban water supply and sanitation.

A number of projects, aiming at developing sustainable management of national and/or transboundary waters have been or are being carried out in the EECCA countries. Recently, additional initiatives have been proposed, the most important being the Danish proposal of a EECCA component of the EU Water Initiative, which was launched at the World Summit on Sustainable Development in Johannesburg.

Examples of ongoing work with the participation of UNECE include pilot projects under the Convention in EECCA countries on monitoring and assessment of transboundary waters (rivers Kura, Pripjat, Severski Donets and Tobol), financed under the EU TACIS programme⁵, the UNECE-ESCAP SPECA project under which, a strategy for the rational use of water resources and energy in Central Asian countries is being drawn up.

International networks that bring together people and organizations from different backgrounds exist or emerge in the region. Examples include the Global Water Partnership, the Water Convention's International Water Assessment Centre, the European Centre for River Restoration, the WHO European Centre for Environment and Health and the future international groundwater assessment centre of UNESCO, that serve as hubs for knowledge on water and water management. These networks could possibly help to develop and implement the EECCA countries' "water" strategy.

III. FURTHER ACTIONS NEEDED

IWRM, that integrates water quantity and quality aspects, as well as both flood and groundwater protection, social, environmental and economic aspects is the best approach to achieve the objectives of improved:

- Quality of water resources; and
- Allocation of water resources.

Proposed activities with regard to the development of water management in the EECCA countries are elaborated below, following the seven tools to tackle the issues described in Part I. The proposed actions will be further defined in the framework of the EU Water Initiative in partnership with the EECCA countries. The project "Transboundary water agreements in the newly independent States" which will be implemented by UNECE, UNEP's Regional Office for Europe, the Ministry for Natural Resources of the Russian Federation and the Swedish Environmental Protection Agency (further called "Project on transboundary waters") will yield more detailed inventories and recommendations on actions

⁵ Other pilot projects on the rivers Bug (Belarus, Poland, Ukraine) and Latoriza/Uhz (Slovakia, Ukraine), financed under TACIS programme, have been completed in 2002.

in the field of transboundary water cooperation. It is planned that these recommendations will be available in April 2003. Some preliminary proposals are also given in annex III

*A. Legal and regulatory framework and its implementation*⁶

1. National level

It is important for the EECCA countries to review the role of Government in water resources management. New trends put Government in an enabling role rather than an implementing one. The enabling role implies that prescriptive, central approaches to developments within the water sector should be replaced by the creation of a framework within which participatory, demand-driven sustainable development can take place.

EECCA countries should take all appropriate action to create legal, regulatory and administrative frameworks which are stable and enabling and within which the public, private and voluntary sectors can each make its contribution to improving water management for the purpose of preventing, controlling and reducing national and transboundary impact, and water-related disease. It includes taking national action in support of sub-regional agreements (e.g. harmonization of law among all riparian countries).

While all Governments should make a serious attempt to transfer service provision tasks to non-governmental stakeholders, this may take many years to achieve in some countries. Where Governments retain provision functions it is an important principle that provision agencies should not regulate themselves; separation of regulatory and implementation functions helps ensure transparency and accountability, which are major concerns in the EECCA countries. In general, it is critical that greater attention be paid to improving public sector performance. Improvement of utility efficiency be it public or private, has to be accompanied by government decisions to address key problems such as water tariffs, overstaffing, the needs of the urban poor, etc.

Proposed actions:

Revision of the legal and economic instruments, in close cooperation with all stakeholders, to establish:

- Clear priorities, targets, time frames and phased implementation. In particular:
 - ✓ Define water-quality objectives, for raw water destined at the production of drinking water, drinking water, water for bathing and water used for aquaculture, or for the production or harvesting of shellfish, as well as environmental objectives. For the countries bordering the EU, these objectives and their

⁶ In the following, “regional” refers to the whole UNECE area; “sub-regional” refers to a territorial unit covering part or the entire area of at least two States (e.g. the Kura River Basin); “national” refers to the level of State; and “local” refers to all relevant levels of territorial unit below the level of the State.

achievement could be according to the requirements of the Water Framework Directive (WFD)⁷.

- ✓ Harmonize/define realistic emission limits for waste-water discharges and quality criteria for the reuse of (treated) waste water, particularly in agriculture;
- ✓ Strengthen measures to improve efficiency of water use, including economic instruments and incentives;
- Performance indicators which should be measured and published regularly;
- Incentives for increased participation of non-governmental stakeholders in management and service provision within the water sector;
- Procedures that promote water management based on expressed demand rather than on possible supply;
- Adequate provisions for relevant capacity building among all stakeholders;
- Implementation responsibilities clearly defined at all levels of governments to ensure effective response;
- Adequate, self-sustaining funding for domestic implementation of water management provisions, including for enforcement;

2. *Regional level*

To take advantage of achievements of cooperative work and achieve the purposes of the regional agreements, the Convention on the Protection and Use of Transboundary Watercourses⁸ and its Protocol on Water and Health⁹ as well as Convention on the Transboundary Effects of Industrial Accidents¹⁰ should be ratified by all EECCA countries.

Proposed actions:

- Ratification of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes by the Parliaments of the following EECCA

⁷ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

⁸ Parties include the following EECCA countries: Azerbaijan, Kazakhstan, Republic of Moldova, Russian Federation, and Ukraine.

⁹ Ratifications include ratification by the Russian Federation.

¹⁰ Parties include the following EECCA countries: Armenia, Kazakhstan, Republic of Moldova, and Russian Federation.

countries: Armenia, Belarus (in progress), Georgia (in progress), Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.

- Ratification of the Convention on the Transboundary Effects of Industrial Accidents by the Parliaments of the following EECCA countries: Azerbaijan, Belarus, Georgia, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
- Ratification of the Protocol on Water and Health by the Parliaments of the following EECCA countries: Armenia, Azerbaijan, Belarus, Georgia (in progress), Kazakhstan, Kyrgyzstan, Republic of Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
- Attribution of full powers (by the Heads of States, Heads of Governments or Ministers of Foreign Affairs) to the heads of the delegations from all EECCA countries (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan) for signature of the legally binding instrument on civil liability for damage to transboundary waters due to industrial accidents during the Kiev Ministerial Conference

3. *Sub-regional level*

In accordance with the Water Convention and the Protocol on Water and Health, Riparian Parties - on the basis of equality and reciprocity - should draw up bilateral or multilateral agreements or other arrangements, where these do not yet exist, or adapt existing ones, where necessary, to eliminate the contradictions with the basic principles of these legal instruments and to define their mutual relations and conduct regarding the aims of these instruments.

In particular it would be important to revise existing agreements in Central Asia and negotiate and agree on agreement(s) in the Caucasian States.

The agreements should define mutual relations and conduct of the basin States regarding integrated water resources management and water-related diseases. They should define duties of the riparian countries with regard to unilaterally planned water utilization, procedures for transboundary environment impact assessment and responsibilities in case of floods, drought or emergency situations. It should provide operational mechanisms to prevent, control and reduce transboundary impact including identification of pollution sources, water pollution abatement, monitoring water quality, public information and participation, liability regime for damage, and dispute settlement.

Recommendations and guidelines, adopted by the Parties to the Convention, could provide further guidance on the drawing up of sub-regional agreements and the implementation of regional environmental conventions and protocols (see Annex I).

Proposed actions:

- Following the provisions of the Water Convention and the Protocol on Water and Health, and taking into account the specific features of the river basins, bilateral and multilateral agreements, respectively, should be drawn up/modified for the following river basins. Where a river basin includes both EECCA countries and EU accession countries, the drawing up of the agreements should take into account, as appropriate, the requirements of the EU Water Framework Directive:
 - ✓ Daugava (Belarus, Latvia and the Russian Federation) ¹¹
 - ✓ Nemunas (Belarus, Lithuania, Russian Federation)
 - ✓ Samur (Azerbaijan, Russian Federation)
 - ✓ Kura (entire basin: Armenia, Azerbaijan, Georgia, Iran and Turkey), at least Azerbaijan and Georgia as a first step
 - ✓ Waters shared by Georgia and the Russian Federation (Rivers Psou and Terek)
 - ✓ Waters shared by the Russian Federation, Kazakhstan and Mongolia
 - ✓ Severski Donets shared by the Russian Federation and Ukraine
 - ✓ Dniester and other waters shared by the Republic of Moldova and Ukraine
 - ✓ Lower Danube basin shared, inter alia, by the Republic of Moldova and Ukraine and several other countries
 - ✓ Syr Darya and Amu Darya shared by Kyrgystan, Tajikistan, Kazakhstan, Uzbekistan and Turkmenistan (existing agreements are temporary and cover mainly allocation of water, and thus need to be re-negotiated)
 - ✓ Chu and Talas shared by Kazakhstan and Kyrgyzstan.
 - ✓ Zeravshan shared by Tajikistan and Uzbekistan.
 - ✓ Ili shared by Kazakhstan and China
 - ✓ Irtysh shared by Kazakhstan, China and the Russian Federation
 - ✓ Araks shared by Armenia, Azerbaijan and Iran
 - ✓ Choroki shared by Georgia and Turkey

¹¹ An agreement has already been signed between Belarus and the Russian Federation.

- ✓ Debeda shared by Armenia and Georgia
- ✓ Lake Gandari between Azerbaijan and Georgia
- ✓ Lake Peipsi, River Narva and other waters shared by Estonia, Latvia and the Russian Federation

The above list will be updated. An inventory of transboundary waters where needs of new agreements or revisions of agreements are identified will be elaborated in the above-mentioned “Project on transboundary waters” and will be available in April 2003.

B. Establishment and strengthening of institutions

1. *National level*

When discussing the roles and functions of organizations at different levels, it is important to stress that there can be no blueprints valid for all cases. This is an area where stage of development, financial and human resources, traditional norms and other specific circumstances should play an important part in determining what institutional arrangement is most appropriate in a given context. A key issue is the creation of effective coordination mechanisms between different agencies responsible for various aspects of water management. In many cases the establishment of an “Apex” body at the national level may be desirable for the accomplishment of IWRM. It should at least be responsible for developing policies and strategies, and for coordination and national planning regarding water resources. Preferably, it should be independent of major users of water and should report to Government at a high level. EECCA countries should review their institutional set-up in the water resources management sector with a view to ensuring the above-mentioned characteristics of their institutional framework for water management.

River basins should be considered the logic planning unit for water resources management. However, in accordance with the principle of demand-driven development, a river basin organization should only be established in response to a perceived and expressed demand. Existing administrative divisions and regulatory conditions might discourage the management of water according to river basins. Having noted that, it must be recognized that the application of river basin management with proper stakeholder involvement is under-utilized, also in EECCA countries. River basin organizations responsible for integrated water resource management should be established, where appropriate. Their functions should include water allocation; resource management and planning, to balance all users needs and to provide protection from water related hazards; education of basin communities; development of natural resources management strategies and programmes of remediation and conflict management.

To be effective, these institutions should have adequate human resources; sufficient financial resources (including an ability to generate some form of sustaining revenue); clear jurisdictional boundaries and appropriate powers; and a broad stakeholder involvement.

Proposed actions:

- EECCA countries should review and analyse their current water management system and ensure that gaps and overlaps in responsibility between institutions be removed, and that proper co-ordination mechanisms be established.
- The responsible institutions – be they river basin organizations or otherwise – should possess or have access to the relevant tools for water management, i.e. countries should provide them with the necessary mandate, competent staff, appropriate budget, and obligation to involve all relevant stakeholders.

2. *Joint bodies for transboundary river basins*

Agreements or other arrangements to be drawn up or revised according to the Water Convention's basic principles shall provide for the establishment of joint bodies. A joint body is any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties, such as meetings of Plenipotentiaries.

Proposed actions:

- Countries that are riparian to the same transboundary waters (see the basins referred to under the section on legal frameworks) should establish joint bodies, preferably for the whole basin, that have the necessary competence and capacity to identify pollution sources, exchange information on existing and planned uses of water likely to cause transboundary impact; set emission limits for waste-water discharges; establish water-quality objectives or other relevant targets and target dates; establish warning and alarm procedures and systems and linking them with national/international notification systems for industrial accidents; participate in environmental impact assessments; and carry out other river-basin specific tasks. An inventory of transboundary waters where joint bodies have not been established shall be elaborated in the "Project on transboundary waters" and will be available in April 2003.
- Staff of joint bodies should be competent in surface water and groundwater management issues. An exchange and training programme for members in and staff servicing joint bodies should be developed.

If there are different joint bodies in the same river basin, institutional and administrative arrangements should be made for cooperation between these joint bodies. Similarly, cooperation among joint bodies established for the protection of inland waters and the protection of the marine environment should be established.

3. *Institutional and administrative arrangements for consultations and mutual assistance*

In critical situations, such as accidental pollution of transboundary waters, floods and droughts, the Riparian Parties should provide mutual assistance upon request. Mutual assistance should also be provided in responding to outbreaks and incidents of water-related disease and significant threats of such outbreaks and incidents, especially from water-pollution incidents or extreme weather events. Consultations shall be held between the countries in the river basin on the basis of reciprocity, good faith and good-neighbourliness, at the request of any such country. Institutional and administrative arrangements should be made among the riparian countries that are supportive of conducting consultations and providing assistance.

Proposed actions:

- EECCA countries should, if they have not already done so, draw up and agree upon procedures for mutual assistance that include:
 - ✓ The direction, control, coordination and supervision of assistance;
 - ✓ Local facilities and services to be rendered by the Party requesting assistance, including, where necessary, the facilitation of border-crossing formalities;
 - ✓ Arrangements for holding harmless, indemnifying and/or compensating the assisting Party and/or its personnel, as well as for transit through territories of third Parties, where necessary;
 - ✓ Reimbursement of assistance services.

An inventory of transboundary waters where such procedures have not yet been established shall be elaborated in the “Project on transboundary waters” and will be available in April 2003.

- For transboundary river basins, countries in the river basin should make arrangements for consultations, preferably through existing joint bodies in order to:
 - ✓ Consult each other, and exchange information and share knowledge with the other countries bordering the same waters about the transboundary waters and the problems and health risks, which they present;
 - ✓ Exchange information on effective means of disseminating to the public information about the prevention, control and reduction of transboundary impact and water-related disease.

An inventory of transboundary waters where procedures for such consultations have not yet been established shall be elaborated in the “Project on transboundary waters” and will be available in April 2003.

C. Infrastructure and non-structural measures related to water, human health and the environment

The actions proposed in the background paper on “Urban water supply and sanitation, including financing of water infrastructure” should be complemented by actions that aim to assist in implementing the targets set by each of the Parties to the Protocol on Water and Health in the local, national and transboundary contexts.

Apart from infrastructure (e.g. collective systems in urban and rural areas; storages including reservoirs; irrigation systems; etc.), action involve non-structural measures such as surveillance and early-warning systems, contingency plans for extreme events as floods, droughts, accidents capable of causing negative effects on waters, and response capacities especially in relation to water-related diseases.

Proposed actions (in addition to the OECD EAP Task Force’s background paper):

- Identification of a priority list for investment in water supply installation, irrigation systems, sewerage and waste-water treatment, covering the construction of new and the repair of old installations, their scheduling and their funding arrangements;
- Identification and remediation of particularly contaminated sites which adversely affect waters;

D. Monitoring and assessment

Integrated water resources management as well as planning and decision-making should rely on consistent, relevant and timely information on the status of the water systems, including socio-economic information, which is tailor-made to the needs for integrated water resources management (IWRM), planning and decision-making. As the ultimate goal of monitoring is to provide the information needed to answer specific questions for IWRM decision-making and planning, and the information requested by the public, an analysis of information needs should be carried out for each river basin. This analysis of information needs should be the basis for the establishment of:

- (a) Tailor-made monitoring and assessment strategies for rivers, lakes/reservoirs, groundwaters and/or estuaries;
- (b) Monitoring programmes, including warning and notification systems,
- (c) Tools for simulation of development scenarios, based on reliable monitoring data,
- (d) Procedures for data management; reporting and quality management.

Information needed for IWRM also include information on what is required by law (e.g. water classification systems, water abstraction policy, flood risk criteria, water-quality

objectives, targets and/or standards); information on water users and water needs in the river basin; point sources of pollution from industry and municipal waste (in terms of production process, pollution composition and discharge load); land uses and diffuse pollution sources from land use; potential sources of accidental pollution; etc. It is therefore important to establish inventories of available information; carry out surveys if insufficient data are available to identify problems in the river basin; and identify hot spots.

Monitoring and assessment programmes and strategies are also corner stones for the access to information and public participation. Not only is there a necessity to make results from monitoring and assessment public, but an analysis of the information that is important for the public should also influence the design of monitoring programmes and policies for publication.

Proposed actions:

- To develop a successful, tailor-made and cost-effective monitoring programme, riparian countries should carry out an analysis of the information needs in order to develop a precise understanding on what kind of information is needed to answer the specific questions in IWRM, decision making and planning.
- As supporting information is often incoherent and distributed among different agencies/institutions, riparian countries should establish inventories of available information and information sources, and agree on the conduct of surveys if insufficient data are available from the inventories.
- Having reached agreement on the information needs in river basins, riparian countries should through their joint bodies agree on assessment strategies in order to design and operate monitoring programmes in such a way that the desired information is obtained. Only thereafter, monitoring programmes should be jointly designed.
- Countries should prioritise the establishment of decision support systems as a means of transforming collected monitoring data into useful information that can be used to support decision-making in water resources management. Mathematical models for simulation of river water quality, groundwater levels or river basin water allocation are examples of tools that may illustrate effects of various development scenarios which can be used to communicate with stakeholders on water resources management options and priorities.
- Data management (i.e. data handling and analysis) and reporting are crucial steps for a successful transboundary monitoring and assessment programmes; and riparian countries should carefully design their joint activities.

E. Access to information, public participation and access to justice

Access to information and public participation in decision-making concerning water and health should be improved in order to enhance the quality and the implementation of the decisions, to build public awareness, to give the public the opportunity to express its concerns

and to enable public authorities to take due account of such concerns. Such access and participation should be supplemented by appropriate access to judicial and administrative review of relevant decisions.

Proposed actions:

- Russian Federation and Uzbekistan should ratify the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters while other countries should seek to implement it to the maximum effect.
- Competent authorities should actively disseminate to the public, for example on a web site, the text of water law, including transboundary agreements, as well as water plans and programmes. They should grant access to information on the conditions of waters and results of monitoring thereof; measures taken to prevent, control or reduce negative impact, including transboundary impact, and water-related diseases; ecological restoration projects; water-quality objectives and other targets and results of checking compliance with them; and provided lay-persons' guides to this information.
- Countries should enhance public participation, also at the transboundary level, particularly regarding environmental impact assessment and NGOs involvement, e.g. by involving NGOs as non-voting participants in meetings and other activities of competent authorities. This must be based on transparent and reasonable criteria.
- In the case of transboundary watercourses, basin States and joint bodies should establish procedures, including communication strategies, so that the public can have an oversight role in the conduct of transboundary cooperation including the fulfilment of obligations arising from agreements. The development and implementation of international documents (e.g. water management and contingency plans) and response measures should be open to public participation. Basin States are encouraged to provide for public participation, including NGOs, in the preparation and development of agreements, and NGOs should be invited to participate in intergovernmental negotiation meetings and comment on draft texts. Due account should be taken of such input.

F. Development of concerted action programmes

Water resources should, as far as possible, be managed in an integrated manner on the basis of catchment areas, with the aims of linking social and economic development to the protection of natural ecosystems and of relating water-resource management to regulatory measures concerning other environmental mediums. Such an integrated approach should apply across the whole of a catchment area, whether transboundary or not, including its associated coastal waters, the whole of a groundwater aquifer or the relevant parts of such a catchment area or groundwater aquifer.

Particular issues linked to water-quantity and water-quality aspects should include:

- Measures for the rational use of water in countries located in water-deficient regions;
- Guidance on reasonable and equitable use of transboundary waters, particularly in arid and semi-arid areas or under other physical and socio-economic constraints; and
- Consideration of the development objectives of the coastal zones in the development of freshwater management policies, to ensure protection of the marine environment, in particular coastal areas.

Proposed actions:

- River basin management plans should be established and published. These should include:
 - ✓ General description of the characteristics of the basin;
 - ✓ Land use inventories;
 - ✓ Assessment of current water availability and demands
 - ✓ Identification of the pressures and impact sources (point source and diffuse source pollution, pressures on the quantitative status, and other impacts of human activity);
 - ✓ Monitoring programmes;
 - ✓ Environmental objectives for surface waters, groundwaters and protected areas;
 - ✓ Programme of measures to achieve these objectives including legislative, administrative, economic and fiscal instruments, emission controls, codes of good practice, recreation and restoration of wetlands, abstraction controls, demand management measures such as promotion of water-saving irrigation techniques, water-efficient technologies in industry, projects for water and environment protection and restoration, and any other measures to prevent and reduce pollution, including pollution of marine waters;
 - ✓ Economic analysis including of water use and financing mechanism;
 - ✓ Responsibilities and time schedule for implementation.
- For transboundary waters, if they have not already done so, countries should establish and publish with the other countries bordering the same transboundary waters:

- ✓ Joint targets, for the standards and levels of performance that need to be achieved or maintained for a high level of protection against transboundary impact and water-related disease;
- ✓ Joint or coordinated water-management plans for the purpose of preventing, controlling and reducing any transboundary impacts;
- ✓ Joint or coordinated systems for surveillance and early-warning systems, contingency plans and response capacities as part of, or to complement, the national systems for the purpose of responding to outbreaks and incidents of water-related disease and significant threats of such outbreaks and incidents, especially from water-pollution incidents or extreme weather events;
- ✓ Agreed ways and means to jointly carry out environmental impact assessments of different economic development strategies and sectoral policies, plans, programmes and legislative proposals that have an impact on the water environment in river basins.

G. Financing

The financing aspect is crucial for the development and implementation of sustainable water resource management policies. In all EECCA countries greater financial resources are essential to solve the many problems of the water sector. EECCA countries need to:

- Improve access to international sources of finance (bilateral and multilateral assistance);
- Give themselves mechanisms to coordinate and monitor all ongoing water related initiatives; to approve all up-coming, donor-financed (partially or totally) projects before their implementation in order to ensure coordination and compliance with already existing water related projects, thus avoiding double work, overlaps and possible conflicts; and to formulate and propose to potential donors water related projects that are considered of crucial interest;
- Apply economic instruments in support of more environmentally friendly solutions, including incentives for polluters to invest in pollution minimization and abatement;
- Introduce and/or improve systems for self-financing of water supply and waste-water treatment.

In deciding on financing issues, due account should be taken of the requirements of the Protocol on Water and Health, including the provisions related to people who are particularly vulnerable to water-related disease; and to members of the population, who suffer a disadvantage or social exclusion.

Further details are provided in the background paper on “Strengthening mechanisms for mobilising and allocating financial resources”.

IV. INDICATORS OF PROGRESS TOWARD THE OBJECTIVE

Many sets of indicators on the basis of the DPSIR framework¹² have already been developed, for example by the European Environment Agency, or are being drawn up to answer specific requirements¹³. With UNECE as lead agency, UN bodies have recently developed a set of indicators for the World Water Development Report, which are currently tested world-wide in rivers basins including transboundary river basins such as the Lake Peipsi basin¹⁴.

In the course of the further development of the EECCA water strategy, the most suitable indicator sets that are of value for assessing the effectiveness of measures taken will be designed by the International Water Assessment Centre in cooperation with EECCA countries, the Global Water Partnership and Parties to the Water Convention. Specific events from October 2002 to spring 2003, such as the meetings of the working groups under the UNECE Water Convention (see annex III), will be used for discussion between the EECCA countries and the other partners in order to define indicators for the different actions described in chapter III.

V. THE ROLE OF INTERNATIONAL COOPERATION

Even if the EECCA countries have the main responsibility for the implementation of the proposed activities, different bilateral donors and other UNECE countries with valuable experience, international organisations and IFIs could play an important supportive role. Important directions of international support are to:

- Take advantage of achievements of the cooperative work done under regional agreements (e.g. Water Convention and its Protocol) and sub-regional agreements (e.g. EU WFD for riparian states at the fringe of an enlarged EU area; bilateral and multilateral river basin agreements).
- Use existing experiences, sources of expertise and opportunities for capacity building as efficiently as possible to intensify the provision and dissemination of information and know-how in the right format, to share experience, to offer assistance for cooperation and to create partnerships and mechanisms for capacity-building, including funding;

¹² Driving Forces - Pressures - State - Impact - Responses.

¹³ Development of indicators in the area of water and health by EEA and on transboundary waters by the Meeting of the Parties to the Water Convention.

¹⁴ Examples include indicators for surface and groundwater resources, extreme events, water storage and delivery, water and health, municipal-industrial-and-energy-water demands, food and agriculture, ecosystem coping capacity, in-stream and other non-consumptive use, and poverty and gender.

- Design specific implementation projects that would address the major difficulties that EECCA countries face in integrated water management, to provide, for example guidance on normative approaches, support capacity-building, strengthen institutional frameworks, provide access to sources of finance, and assist in planning and implementing concerted action plans.

On the basis of this paper and the tentative proposals on specific implementation projects (see annex III), a more detailed version, including recommendations on the role of international cooperation, will be developed within the framework of the EECCA component of the EU Water Initiative, particularly its part on IWRM. After a series of consultations a first draft of these recommendations will be presented in February 2003.

Annex I

UNECE GUIDELINES AND RECOMMENDATIONS ON WATER MANAGEMENT

- **Recommendations to ECE Governments on waste-water management**, prepared at the Seminar on waste-water management, held in Munich (Germany) in 1990, and adopted by the Senior Advisers to ECE Governments on Environmental and Water Problems at their fourth session in March 1991 (published in document ECE/CEP/10)
- **Recommendations to ECE Governments on water-quality criteria and objectives**, as adopted by the Senior Advisers to ECE Governments on Environmental and Water Problems at their sixth session in March 1993 (published in document ECE/CEP/10)
- **Guidelines on the prevention and control of water pollution from fertilizers and pesticides in agriculture**, as adopted by the Committee on Environmental Policy at its second session (1995) (published in document ECE/CEP/10)
- **Recommendations to ECE Governments on specific measures to prevent, control and reduce groundwater pollution from chemical storage facilities and waste-disposal sites**, prepared by the Seminar on the prevention and control of groundwater pollution from the storage of chemicals and from waste disposal, held in Madrid, Spain in 1995, and adopted by the Committee on Environmental Policy at its third session in May 1996 (published in document ECE/CEP/11)
- **Guidelines on licensing waste-water discharges from point sources into transboundary waters**, as prepared by the task force on water pollution control from point sources, with France as lead country, and adopted by the Committee on Environmental Policy at its third session in May 1996 (published in document ECE/CEP/11)
- **Guidelines on monitoring and assessment of transboundary rivers**, developed by the UNECE Task Force on Monitoring and assessment under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (March 2000)
- **Guidelines on monitoring and assessment of transboundary groundwaters**, developed by the UNECE Task Force on Monitoring and assessment under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (March 2000)
- **Guidelines on sustainable flood prevention**, as prepared by the Seminar on sustainable flood prevention and adopted by the Parties to the Convention on the

Protection and Use of Transboundary Watercourses and International Lakes at their second meeting in March 2000 (published in document MP.WAT/2000/7)

- **Guidance on public participation in water management and framework for compliance with agreements on transboundary waters**, prepared by a group of experts with the Netherlands as lead country, under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, in cooperation with the Regional Office for Europe of the United Nations Environment Programme (2000)

Annex II

EXAMPLES OF PROGRAMMES ON WATER MANAGEMENT FUNDED BY TACIS ¹⁵

1. Aral Sea

Since 1995, Tacis has been supporting the Aral Sea Basin Programme together with UNDP/UNEP/WB (GEF project) through the Water Resources Management and Agricultural Production in Central Asian Republics (WARMAP) projects. An amount of €7.25 million was already committed. Main objectives were the preparation of interstate agreements on water management, creation of regional information systems (WARMIS), analysis of water use and farm management (WUFMAS) and assistance to the GEF project.

Further support amounting to €2.5 million will be provided through another WARMAP project included in the Regional Cooperation Action Programme 2000. Under the condition that the countries concerned will sign the relevant agreements prepared under previous Tacis assistance, this project will continue providing support to the Interstate Agreements, improved river basin management and dissemination of information. Terms of Reference (TOR) are being finalized and it is expected that the project will start later this year.

2. Caspian Sea

Since 1997, Tacis has been supporting the Caspian Environmental Programme (CEP) together with UNDP/UNEP/WB (GEF project). Two projects of a total amount of €6.5 million have been completed (the later in December 2001). Tacis assistance has been instrumental for establishing the initial CEP framework and carrying out main part of the technical research necessary to developing the future Caspian Strategic Plans. The assistance included support to four Regional Thematic Centres located in the EECCA countries, the identification of investment projects and support to the development of a draft sustainable fisheries management agreement.

Further support of €4 million has been included in the Regional Cooperation Indicative Programme 2002-2003. The main objective is the promotion of sustainable development and management of natural resources in the Caspian Sea. More specific objectives are: to assist the four countries in the region meet their commitments under the Caspian Environment Programme, especially with regard to the management of fish resources, pollution reduction and prevention and monitoring of environmental factors, including oil contamination, water level and the quality of the sea; to increase the level of investment related to the Caspian Environmental Programme, by assisting in the development of demonstration projects. A project should be included in the Action Programme 2002, but it will not start before mid-2003.

¹⁵ Prepared by the European Commission, DG-IX, for the consultation meeting on the EU Water Initiative and the EECCA Environmental Strategy, Brussels, 30 July 2002.

3. Black Sea

Since 1992, Tacis has been one of the main donors of the Black Sea Environment Programme (BSEP) together with UNDP/UNEP/WB (GEF Project). Several projects have been completed representing an amount of around €8 million.

Other projects should start in 2002:

- A €3 million technical assistance project (included in the Regional Cooperation Action Programme 2000) will support the three RAC-Regional Activity Centres in the EECCA countries establishing regional credibility and financial sustainability, maintain and develop the impetus of the technical work programme and developing regional strategy documents, including monitoring, priority setting for pollution reduction, biodiversity recovery, improvement of the management of the coastal zone, information and data exchange; continue the successful information preparation, dissemination and public awareness activities of earlier Tacis support; and support specific activities of the BSEP secretariat to become a fully operational Secretariat;
- A €7.5 million Tacis co-financing of an EBRD investment project (included in the Regional Cooperation Action Programme 2001) aiming to improve the quality and reliability of the water supply as well as the waste water treatment for Kherson and Mariupol (South Ukraine). Tacis contribution will focus on environmental components of the EBRD project.

Moreover, further support of €3 million has been included in the Regional Cooperation Indicative Programme 2002-2003 aiming at developing an integrated approach for EECCA countries around the Black Sea based as far as possible on the most important elements of the Water Framework Directive. A project should be identified and included in the Action Programme 2003, thus not starting before 2004.

4. Transboundary river management

A Joint River Management €4 million project, supported through the Regional Cooperation Action Programme 1999, aims at preventing, controlling and reducing adverse transboundary pollution impact caused by the quality of four rivers: Kura (Georgia/Azerbaijan), Pripyat (Belarus/Ukraine), Tobol (Russian Federation/Kazakhstan) and Severski Donets (Russian Federation/Ukraine). It links with the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, assists in the application of guidelines on monitoring and assessment of transboundary rivers (see annex I) and promotes investment into transboundary river monitoring. The project started in January 2002 and will be completed after 2 years.

5. Water management and supply

Water management and supply is one of the priorities included in the Regional Cooperation Indicative Programme 2002-2003. The general objective is to reduce pollution and health

risks and provide water resources to the population while promoting a more efficient use of these resources. The specific objective is to strengthen the institutional capacity and regulatory compliance of water services operators (water supply, distribution and wastewater collection) as well as improving their financial, environmental and health performance. A total amount of €5.0 million has been foreseen for this activity to be included in the Action Programme 2003 under which concrete projects will be identified (start not before 2004).

Annex III

TENTATIVE PROPOSALS ON SPECIFIC IMPLEMENTATION PROJECTS

Specific implementation projects could be designed to address the major difficulties that countries in the EECCA region face in integrated water management, to provide, for example guidance on normative approaches, support capacity-building, strengthen institutional frameworks, provide access to sources of finance, and assist in planning and implementing concerted action plans.

EECCA countries already made preliminary proposals during the negotiation meetings of the Protocol on Water and Health and at a meeting on the interim implementation of the Protocol (Consultations on pilot projects on water and health in Bled, 1999). These included the preparation of a concerted action plan for a Romanian-Ukrainian transboundary river basin (proposal by Ukraine); monitoring and assessment of transboundary watercourses, including health-related surveillance for the rivers Kura, Tobol, and Severski Donets (proposals by Azerbaijan, Georgia, Kazakhstan, Russian Federation and Ukraine); monitoring and assessment of Lake Issyk-kul (proposal by Kyrgystan); and an inventory of surface waters and groundwaters (proposal by Kazakhstan).

In the meantime, further thoughts have been given by EECCA countries to some of these proposals that have led to specific projects on monitoring and assessment of transboundary rivers, including those on the rivers Bug, Kura, Latoritza/Uhz, Pripjat, Severski Donets and Tobol, the preparation of monitoring projects for two international lakes (Lake Peipsi and Lake Pyhäjärvi), and preparations for pilot projects on monitoring and assessment of transboundary groundwaters.

The following tentative proposals on specific implementation projects will be further elaborated under the auspices of Working Groups established under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes. To this end, a series of meetings were already conducted or have been scheduled to further specify the projects on legal issues (Working Group on Legal and Administrative Aspects, Geneva, late 2002), on water management and institutional aspects (Working Group on Water Management, Helsinki, spring 2003), on monitoring aspects (Working Group on Monitoring and Assessment, Helsinki, 3-5 October 2002), and on water and health aspects (Working Group on Water and Health, Budapest, 28-29 October 2002). Both the Global Water Partnership and representative of the EECCA countries participated or will take part.

Legal and regulatory framework and its implementation

Development of model law/regulations for 2-3 river basins

Establishment and strengthening of institutions

- Institutional analysis/reform studies at national and local levels.
- Development of model agreements for 2-3 joint bodies.

Improvement of infrastructure and non-structural measures related to water, human health and the environment

The Danish Government has contracted the Danish Hydrological Institute (DHI) to provide guidance to the Government of Georgia on measures to be taken to implement the Protocol on Water and Health to the 1992 Convention on Transboundary Waters and International Lakes. A first assessment mission has taken place and its outcome is presently being assessed. It can be expected that the full pilot project will take approximately one year to complete. On the basis of the outcome of this work, pilot projects in other countries/river basins may be launched.

A review and assessment of guidelines and standards for various aspects of water management, for example, drinking-water standards considering the economic feasibility, could also be undertaken.

Monitoring and assessment

Work in EECCA on monitoring and assessment could proceed in five directions as follows:

- Continuation of the Tacis pilot projects (see annex II) for the rivers Kura (Azerbaijan, Georgia), Pripyat (Belarus, Ukraine), Tobol (Russian Federation, Kazakhstan) and Serverski Donets. After completion in 2004/2005, the second phase, i.e. implementation of the recommendations for investment, should start;
- Start of the second phase of pilot project on the rivers Bug (Belarus, Poland, Ukraine) and Latoritca/Uzh (Slovakia, Ukraine);
- Continuation of the pilot project on monitoring and assessment of transboundary/international lakes for Lake Peipsi (Estonia, Russian Federation) and Lake Pyhäjärvi (Finland, Russian Federation);
- Design and implementation of one or two pilot projects on monitoring and assessment of transboundary groundwaters (in addition to those which are planned for Central European countries);
- Design and implementation of a decision support system for a rivers basin, including capacity building of staff.

Access to information, public participation and access to justice

Components concerning access to information, public participation and access to justice should be integrated in each developed project, in particular in monitoring projects.

Concerted action programmes

The development of concerted action programmes could be envisaged for 3-4 river basins, at least two of them should be transboundary basins.

A particular issue to be dealt with in these projects should include the integration of freshwater resource management and coastal zones management, for which under the EU Water Initiative UNEP/GPA and UNDP act as lead agencies for programme development. The Kura River basin seems to be particularly suited for this purpose,¹⁶ an alternative being the Dniepr River basin.¹⁷

¹⁶ Kura River basin and relevant parts of the Caspian involving the 3 Trans-Caucasian countries: Armenia, Azerbaijan and Georgia, as well as Iran and Turkey. The project could make use of the ongoing TACIS project on monitoring and assessing the Kura in Azerbaijan and Georgia and of cooperation with UNEP/GPA, UNDP and WHO regarding coastal zone management and protection of the marine environment.

¹⁷ These proposals regarding transboundary watercourses in the UNECE region are being further considered by the “Partnership to strengthen the implementation of Agenda 21 - Linking Integrated Water Resources Management (IWRM) and Integrated Coastal Zone Management (ICZM)”, which includes UNEP, UNECE, the Global Water Partnership, DHI (Denmark) and other national and international partners.