

ECE DECLARATION OF POLICY ON THE RATIONAL USE OF WATER

as adopted by the Economic Commission for Europe at its thirty-ninth session (1984) in its decision C (XXXIX)

The Economic Commission for Europe,

Mindful of the importance and urgency of combating wasteful use of water, both in terms of quantity and quality, and of promoting all measures which stimulate rational, economic and efficient water use to enable economic development to take place in a manner compatible with maintaining or improving the quality of life for present and future generations,

Bearing in mind the pertinent provisions of the Final Act of the Conference on Security and Co-operation in Europe by which Participating States affirmed that "the protection of nature and the rational utilization of its resources in the interest of present and future generations is one of the tasks of major importance to the well-being of people and the economic development of all countries" and by which they expressed in particular their wish to enhance co-operation with a view to improving fresh water utilization "by developing methods of production which are less polluting and lead to less consumption of fresh water",

Bearing further in mind the relevant provisions of the Concluding Document of the Madrid Meeting of Representatives of the Participating States of the Conference on Security and Co-operation in Europe,

Taking note of the Mar del Plata Action Plan which calls upon countries to intensify national and international efforts "to maximize the economic and social efficiency of all water inputs, including measures to heighten awareness, change attitudes and provide the technological means and incentives to conserve and protect available water",

Recalling General Assembly resolution 35/18 of 17 November 1980 on the Proclamation of the International Drinking Water Supply and Sanitation Decade,

Conscious of the useful role played by the Commission over more than 20 years in assisting countries to share their experience regarding the use of natural resources, including both surface water and ground water, and in promoting the rational use of water through the preparation of guidelines and recommendations,

Bearing in mind the Declaration on Low- and Non-waste Technology and Re-utilization and Recycling of Wastes, by which States participating in the High-level Meeting within the Framework of the ECE on the Protection of the Environment declared, *inter alia*, their intent to use resources rationally,

Underlining the importance of the ECE Declaration of Policy on Prevention and Control of Water Pollution, including Transboundary Pollution which, *inter alia*, stipulates that the rational utilization of water resources, both surface and underground, should be considered "a basic element in the framework of long-term water management and be viewed as an effective support to the policy of prevention and control of water pollution, taking into account the special features of each drainage basin",

Commending the efforts already undertaken by the Committee on Water Problems in paying increased attention to questions related to future-oriented water policies and strategies, to water demand management and to measures and instruments which influence user behaviour, thus bringing about economies in water use,

Noting, in this regard, the results of two seminars, namely Rational Utilization of Water (1979, Leipzig, German Democratic Republic) and Economic Instruments for Rational Utilization of Water Resources (1980, Veldhoven, Netherlands) as well as the reports on long-term perspectives for water use and supply in the ECE region (1981) and on policies and strategies for rational use of water in the ECE region (1983),

Recognizing the vital need for further developing and enhancing international co-operation and for improving co-ordination of efforts in ECE countries to formulate and apply strategies of water demand management for coping with limited water supply and to promote the concept of rational water use in the light of experience acquired during past years,

1. *Decides* to adopt the Principles of Rational Use of Water set forth in the appendix to this Declaration;⁵

2. *Recommends* to ECE Governments that they apply these Principles in formulating, reviewing and implementing their water policies on a national and international level, taking into account their specific administrative structures;

3. *Invites* the member Governments to keep the Commission informed at appropriate intervals, through the Committee on Water Problems, of action taken by them in this regard;

4. *Requests* the Executive Secretary to transmit this decision to the member Governments as a Declaration of Policy on the Rational Use of Water; and

5. *Requests* the Executive Secretary to transmit this decision to international organizations concerned, with a view to extending co-operation in this field.

PRINCIPLES

1. It is recognized that:

(a) With increasing urban concentration, industrial expansion, intensified agricultural exploitation, rising living standards and the accelerated development of touristic and recreational activities, water, being an irreplaceable natural resource, is becoming an important issue in many countries or parts of them and, in some, even a limiting factor for socio-economic development;

(b) development and further management of water resources is becoming technically difficult, expensive and may conflict with some economic sectors as well as with environmental concerns; and that

(c) water is being used sometimes irrationally, beyond an economically and socially sensible level and used as an undue recipient of harmful pollution loads.

2. Governments are therefore being called upon to formulate and adopt policies at all appropriate levels which foster measures

striving for the efficient utilization of water resources from both supply and disposal aspects, in order to secure that, as far as possible, the wastage of water is prevented together with that of energy and raw materials required for its abstraction, transportation, storage, proper use and treatment of water and for waste water purification, so that rational use of water contributes to the fullest extent to national welfare. Water use should be considered in the context of efficient utilization of common resources and should therefore be of concern to the entire population.

3. In formulating and adopting a future-oriented national water policy it should be taken into account that water, a common resource, must be used economically in the interest of the public at large. Therefore, special emphasis should be given to:

(a) A unified strategy for water withdrawal, distribution, treatment, use and discharge;

(b) Integrated water use, attaching priority to drinking water requirements and to environmental protection;

(c) Water demand management and preventive measures so as to avoid water shortages and water pollution; management options should be matched to actual supply; usable supplies should be explored and safeguarded;

(d) Non-structural measures, which aim at increasing operation efficiency of existing water schemes; they should be designed to fit into a comprehensive approach to the management of water quantity and quality;

(e) Co-ordinated utilization of both surface water and ground water, taking into account their close interrelation; public drinking water supply should be given priority in ground water use; and

(f) Measures to combat harmful effects of water: flooding, soil erosion, etc.

4. In the overall planning process of a country, thorough consideration should be given to the concept of rational use of national water resources and to alternative and multi-purpose uses of water and their impact on other natural resources as well as on the economy as a whole. The methods of systems analysis and mathematical modelling may be applied. In these planning procedures, perspectives and forecasts of future water demand,

⁵ See Principles hereunder.

use, consumption and discharge should not only be an extrapolation of past trends but should also take into account the anticipated effect of applied or foreseen control measures, economic incentives and other stimuli on future water-use practices. Due attention should be paid to long-term planning as one of the most important tools for a comprehensive water policy; planning should in particular:

(a) Ensure optimal socio-economic and ecological benefits from rational water use;

(b) Facilitate proper decision making at all appropriate levels and within economic sectors;

(c) Allow for close co-operation and co-ordination with other economic sectors as well as with regional and local administrative authorities;

(d) Permit a sufficient period for the formulation and adjustment of a system of regulatory measures and economic instruments; and

(e) Provide guidance for a rational allocation of long-term investments to promote sustainable development of water management.

5. Within the framework of the general principles set forth in this declaration of policy, specific attention should be accorded in national water policies and planning to the protection of ground water from the possibility of pollution and overuse.

6. Priority should be accorded to the co-ordination of land-use planning and water management. This could be restrictions on the use of certain areas, already subject to serious water shortages and/or heavy environmental stress, as well as the separation of areas of water use from those of water abstraction. However, the general principle should be maintained, where possible, that the establishment of new industrial complexes, power plants, intensive livestock farming, the development of new settlements and the expansion of urban areas should be compatible with the availability of water of sufficient quality and quantity at reasonable distances. River basin oriented management, including flow transfer within and between basins and the siting of future reservoirs, should be given appropriate attention in land-use planning and water management planning to achieve a long-term inte-

grated and rational approach to an efficient and sustainable use of water. In planning water management systems, consideration should be given to the creation of integrated water supply and disposal systems which could take advantage of diversities in demand patterns over wider areas - thus providing easier response to peak demands - and of economies that may result from the construction and operation of centralized water supply and sewage systems. Attention should also be given to the efficient operation of drinking water and waste water treatment plants.

7. In conformity with the administrative structure and existing regulations, adequate involvement of water users and those involved in decision-making processes should be encouraged, as they can make significant contributions both to the identification of targets and to the development, adoption and effective implementation of water saving programmes. Education and training should be regarded as an important tool in the implementation of national and regional water policies. It should, therefore, be pursued vigorously so that the public understands and respects the importance of using water rationally and appreciates the socio-economic and ecological advantages that can be achieved by improving water conservation practices; measures taken, however, should not go beyond what is in the public interest. To this end, the Governments are called upon to intensify national efforts with a view to enhancing or, if necessary, creating, as appropriate, frameworks for youth education and training in this field, in the interest of present and future generations.

8. Regulations and ordinances under certain conditions together with economic and financial instruments are considered an important regulatory tool for promoting water policy and for determining the rights and obligations of water users and their mutual relationships. Such regulative instruments may take the form of standards, criteria, rules, norms, limitations, permits or licences, control or stop orders and should be applied to setting strict targets for the use, consumption and discharge of water, especially in the industrial and agricultural sector. Administrative instruments should allow for direct regulatory control through such practices as permits and licences and should oblige prospective water users, including public water supply and pollution control organizations, to obtain authorization for the withdrawal, use, consumption and discharge of water of a certain quality and for a specific time period. Regulation of contaminants and

product standards should be enforced on substances which risk impairing the aquatic environment, in order to allow for safe and economic use and recirculation of water as well as to prevent detrimental effects to scarce available water supplies.

9. Governments should increase their efforts to develop or improve methods for the regular collection, the proper analysis and the timely dissemination of directly comparable data on water abstraction, use, consumption and discharge, both in terms of quantity and quality, in the various economic sectors. These statistics on water use and water quality should be considered along with existing data of available water resources to help to identify water-deficient areas, and those vulnerable and sensitive to future water shortages as well as to foresee possible conflicts between water users. These statistics should also be used in the evaluation of effects of administrative and economic components of long-term strategies. In this respect, relevant experience and information gained in the implementation of water-management measures should be considered an important input in water management planning.

10. In developing an advanced water policy at all appropriate levels, priority should be given to the elaboration of an effective system of economic instruments, stimulating rational water use, deriving socio-economic benefits from the saving of water both in terms of quantity and quality. In the formulation and application of such economic instruments, attention should be paid in particular to:

- (a) Their optimum combination with the existing patterns of legal, administrative and technical instruments;
- (b) Their consistency with prevailing economic principles; and
- (c) Anticipated changes of water-use practices due to measures applied.

11. This well-balanced system should at all stages provide water users with increasing incentives to reduce both wastage and pollution of water. For water fees, a differentiated tariff system may be adopted with a consumption-oriented rate encouraging the rational use of water. Effluent charges, when made, should be based both on the amount of waste water discharged and its pollution load. Appropriate sanctions should be applied if established limits, standards or norms are exceeded.

12. The general principle should be that, as far as possible, the director indirect costs attributable to pollution should be borne by the polluter and that water users should pay the costs of abstraction, treatment and distribution. However, under certain conditions, governmental aid in the form of subsidies may be considered as a possible economic instrument to reduce both wastage and pollution of water. Such circumstances include the granting of aid for the development of cleaner technologies; some degree of compensation for the heavy costs which some polluters would be obliged to meet in order to achieve a degree of cleanliness higher than the required standards; contribution to public bodies for the construction and operation of an installation for the protection of the aquatic environment which could not be wholly covered in the short-term from the charges paid by the polluters using it (the polluters would however be required to meet its running costs). In addition grants may be paid where the immediate application of very stringent standards is likely to lead to serious disturbances in the economy.

13. Policies at all appropriate levels should be geared towards promoting the rapid development and sound application of relevant technologies and their optimum operation for more efficient use of water and preventing wastage of water; both in terms of quantity and quality in all sectors. To this end, strong emphasis should be placed on those economic and administrative instruments that stimulate the application of the best available technology, taking into account economic reasonableness and feasibility. In further supporting this water strategy, Governments should encourage the establishment of research and development centres, sponsorship and cost-sharing arrangements for pilot application of technical innovations and dissemination of information on available and new technologies aiding their capability to meet the requirements set forth by the concept of rational water use. In this respect, the effects of new technologies should be comprehensively evaluated, in particular for their effects on socio-economic and environmental conditions. Such technologies could, *inter alia*, ensure:

(a) The reduction of total costs, in particular for water and other factors in the production process, as well as the reduction of water losses and of discharge of polluting effluents;

(b) The utilization of usable substances contained in waste water and sewage sludge;

(c) The application of water recycling systems within the production process, as well as the reuse of successive and concurrent uses of water within the same industry, other industrial complexes or in agriculture;

(d) The reduction or substitution of hazardous substances, in particular with regard to toxicity, bio-degradability and bio-accumulation and the reduction of eutrophication; this also in view of their risk of detrimental effects on actual or potential water supplies; and

(e) The use of automatic control and regulation systems for in-process water use and consumption.

14. Efforts should be directed to the application of effective measures to obtain water savings in the domestic and municipal sector, and in particular to achieve reduction of losses in water distribution systems. To this effect, increased attention should be paid to the detection and repair of leakage in water distribution networks.

15. In all cases where drinking water quality is not required, users should be encouraged to use water of a quality no higher than necessary. Where communal treatment of waste water is not appropriate, strong emphasis should be given to the application of pollution control measures as close to the source of pollution as possible. Since the major part of water used by industry, including thermal power plants, serves as cooling water, increased attention should be paid to cooling-water management and, in this respect, to the development and application of industrial processes which allow the reuse of cooling water as process and transport water, the recycling of cooling water with a minimum of evaporative losses and the utilization of waste heat in the industrial, domestic and agricultural sector.

16. Due to the fact that in some countries high consumption of water is frequently for irrigation in agriculture, priority should be given there to the adoption of various technical and organizational measures to combat waste of water; steps should be taken to minimize water losses during its delivery to the place of use, taking into account all aspects related to climate, soil, crops and the use of irrigation systems. Attention should be given to pro-

vide water according to the actual water demand of crops in both quantitative and qualitative terms over the growing season. Priority should be given to efficient irrigation techniques in conjunction with advanced agricultural methods in particular those with low-energy consumption. Provided that appropriate precautions are taken and where sufficient experience exists, purified waste water or brackish water may also be used for irrigation, and sewage sludge for land application. If purified waste water and sewage sludge are used, particular attention must be given to hygienic aspects. In addition, the purified waste water, sewage sludge and the soil must be monitored continually to prevent any detrimental effects due to heavy metals or other pollutants. If brackish water is used, possible adverse impacts due to salinization must be considered.

17. The concept of rational water use requires that, in the process of the integrated management of river basins, there should be an attempt to meet the water requirements not only of those types of water use which involve withdrawal of part of the flow, but also of those not involving such withdrawal, namely the fish industry, hydropower plants, water transport and recreation, and to maintain the normal state of health of watercourses.

18. Special consideration should be given to the intensification of those research programmes aimed at developing background knowledge for effective implementation of the principles of this Declaration, and in particular to:

(a) The need for enhanced international scientific co-operation;

(b) The development and improvement of programmes for training managers, maintenance personnel, technological advisers and others in industry and agriculture, with a view to developing, along the lines of relevant national or regional policies and strategies, a more creative approach in the search for practical ways to rationalize water use within their sphere of competence; and

(c) Research programmes relating to the use of non-conventional water resources and to an improved control of losses through evaporation.