

## RECOMMENDATIONS TO ECE GOVERNMENTS ON LONG-TERM PLANNING OF WATER MANAGEMENT

*Prepared by the Seminar on Long-term Planning of Water Management, held in Zlatni Piasatzi (Bulgaria) in 1976, and endorsed by the Committee on Water Problems at its eighth session.*

The supply of water required for economic and social needs makes urgent the improvement of integrated water resources management in order to reduce the risk of serious supply shortages and ecological damage. It was generally agreed at the seminar on Long-term Planning of Water Management (Bulgaria, May 1976) that these objectives would, to a considerable extent, be attained by establishing long-term plans and forecasts and by strengthening co-operation in water resources management between countries sharing transboundary rivers and international lakes.

It is therefore recommended that:

1. Due attention be paid to long-term planning as one of the most important tools for national water policy: it should be used in particular to facilitate proper decision-making at regional and basin levels; in the elaboration of these plans close contact must be maintained with other economy sectors as well as with regional and local administrative authorities.

2. Long-term plans for water management be extended to periods of 10 to 15 years, and completed with master plans or forecasts for periods of 30 to 50 years, in which an approximate evaluation of basic development trends is made: the plans must leave alternatives open in order to incorporate possible technological changes and modifications in the way of life, and to facilitate the evaluation of their consequences and modification of priorities in the course of time; furthermore, planning should be considered as a continuous activity, and long-term plans should be revised and completed periodically - a five year period seems advisable in this respect.

3. Long-term plans for water management be elaborated in a comprehensive way, not only with respect to technical aspects but also to those related to organization, economics and legislation; particular attention should be given not only to the cost-effectiveness of planned water schemes, but also to ensuring optimal social benefits of water resources use, as well as the protection of the environment as a whole.

4. Special consideration be given in long-term planning of water management to its links with land-use planning by *inter alia* zoning or restricting the use of certain areas in order to protect water resources, by establishing new industrial and municipal areas compatible with available water quality and quantity, and by preserving agricultural lands and forests.

5. In long-term planning of water management steps be taken to assure the compatibility of the general objectives of the plan with the legal regulations, to incorporate the use of economic incentives as a tool, and to ensure public acceptance.

6. In long-term plans for water management priority be given to multi-purpose and multi-objective water resources schemes, with a view *inter alia* to optimizing investments; in particular the construction of new hydro-electric schemes should be preceded by a detailed study of the agricultural, industrial and municipal needs of the area concerned.

7. In the elaboration of long-term plans for water management, use be made of systems analysis techniques, developed on the basis of some adopted indicators and criteria; this analysis will take into account the economic and social evolution of the basin, and will be as comprehensive as possible, including in particular those elements referring to time horizon, territorial extent, interactions between national economy and regional development, and linkages between different decision-making levels.

8. The river basin be considered as the general basis for the long-term planning of national water management; the objectives which are defined by long-term planning can then be elaborated in the framework of short- and medium-term planning at the level of appropriate national or regional administrative units; in the case of transboundary river basins the active co-operation of riparian countries is therefore necessary and useful; this international co-operation should be established in agreement between

the interested riparian countries, taking into account the relevant parts of the Final Act of the Conference on Security and Cooperation in Europe, through harmonization of the different long-term national plans of those countries and, at a second stage, by taking steps for the possible elaboration of a joint plan for the entire basin.

9. In preparing long-term plans, the conservation and improvement of the ecological balance of watercourses be taken into account as one of the main objectives; moreover, when planning the measures affecting sensitive and vulnerable areas studies should be carried out aiming at establishing the effects on ecosystems.

10. In preparing long-term plans, particular attention should be paid to the proper and economic use of water, by encouraging *inter alia* the use of lower quality water for cooling and irrigation purposes, more efficient irrigation practices and water recycling.

11. An increase be made in the international transfer of information and technical assistance in the planning of water supply and waste water disposal systems adaptable to developing countries, i.e. schemes with low capital costs and the intense use of labour and local resources; training programmes be also formulated aiming at providing water resources planners in developing countries with basic understanding and appreciation of all disciplines involved in water resources development.