# RECOMMENDATIONS TO ECE GOVERNMENTS ON ECONOMIC INSTRUMENTS FOR RATIONAL UTILIZATION OF WATER RESOURCES

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As water is becoming a limited and valuable resource and its development requires increasing investments, it is now generally accepted that its use must be most efficient and must secure the highest possible level of national welfare. In water management, economic instruments are considered as an important means of stimulating the rational use of water in all economic sectors, as well as promoting the conservation of water resources from over-exploitation or pollution.

It is therefore recommended that:

1. In the development of an advanced and modern water-use policy, priority should be given to the elaboration of an effective system of economic instruments stimulating rational utilization of water and efficient protection of water resources against pollution. Such economic instruments will have to be formulated and applied with care to ensure that they fit into the existing pattern of standards, norms and other legal and administrative measures, which will remain indispensable in integrated water resources and demand management. This well-balanced system should be sufficiently powerful to provide different water users with continuing incentives to control both pollution and wastage of water.

2. In the joint and co-ordinated application of economic instruments with legal, administrative and technical instruments, attention should be paid to their optimum combination with a view to encouraging efficient use of water, deriving socio-economic benefits from the conservation of water resources and pursuing social aims through the redistribution of costs and revenues among regions and water users. To this effect, the varying

responses of water users to the great variety of possible measures should be carefully studied and taken into account when elaborating long-term water-use strategies comprehensible to the public.

3. Fees and charges, penalties and fines, grants, subsidies, low-interest loans, tax relief, exemptions, etc., should not be considered mutually exclusive but should be applied in combination, depending on the level of water resources development and on the economic, social and historical conditions. This system should be introduced step by step, taking due account of the possible social and economic implications.

4. A differentiated tariff system should be adopted, which is appropriate to reduce water wastage, with a consumption-oriented rate. This rate, if necessary, should be progressive in the domestic and industrial sectors, taking into account the interests of public health.

5. The concept of effluent charges and of fines and sanctions for violation of pollution abatement regulations should be oriented towards, and consistent with, prevailing policy principles, such as "the polluter pays", compensation for damage, and equivalent conditions for economic development. Serious consideration should be given to those charges, fines and sanctions which have an economic influence on mitigating and counteracting damage caused by pollution. Charges should be based on the amount discharged and on the pollution load. Fines and sanctions would intervene and should be increased if established limits, standards or norms are exceeded.

6. Where construction grants, low-interest loans and other kinds of subsidies in water resources management are given, they should be awarded to different user-categories, including industries and agricultural enterprises, in accordance with socio-economic priorities, environmental needs and other criteria in line with the concept of rational use of water.

7. Greater emphasis should be placed on integrated planning, optimum choice of technology, timely and economic construction, and efficient operation of installations and water-management structures, particularly those built with government aid. This aid, however, should not be restricted to structural solutions if other options are more economical or rational from the

user's point of view, provided general objectives of the overall water management policy are met. Furthermore, the control function is important for the rational utilization and conservation of water.

8. In the implementation of national water policy, priority should be given to those economic and administrative instruments which promote and stimulate - in all sectors of the economy - the development and application of technology which allows more efficient use of water resources and which ensures protection of the aquatic environment, in particular the abatement of pollution at source.

9. Steps should be taken, where necessary, to improve the coordination of national research programmes for the development of more efficient, cheaper and energy-saving technologies aiming at more efficient protection of water resources and rational water use. To this end, careful attention should be paid to: (a) the impact of the application of certain technologies on the development, use and conservation of water resources, and (b) the influence of the application of certain economic instruments and regulations in the field of water-resources management on the development of technologies.

10. Financial measures, as well as other stimuli, should be applied to induce and encourage staff and managers engaged in production activities in all economic sectors to develop a more creative approach to the search for practicable ways of rationalizing the use of water and for reducing water pollution within their sphere of competence. Efforts should at the same time be directed towards establishing or improving the self-control system in those industrial, agricultural and other enterprises which are significant water users and/or polluters.

11. Efforts should also be made to establish or improve methods of statistical data collection and analysis. This should be done for evaluating the effects of economic incentives in water management on the development of rational utilization and conservation of water resources in all sectors of the national economy. In this respect, relevant experience and information gained in post-project evaluations and in the evaluation of effects caused by economic instruments should be considered as an important input in decision-making processes in water management. Therefore, in the planning of future water-demand, water-use and

discharge practice should not exclusively be based on extrapolation from past trends but should also allow for:

(a) any possible effect of control policy measures, economic incentives and other stimuli to be applied as part of a general water-use policy, and (b) the fact that in individual economic sectors water-demand, water-use and discharge practice are sensitive to any unexpected development of factors elsewhere which influence water needs.

12. Special consideration should be given to the initiation or intensification of economic research at the national level as well as to exchanges at an international level of relevant data, information, results obtained and experience acquired. This research could include the following topics: (a) elaboration of a system of technological and economic indicators for the rational use of water resources; (b) development of methods for evaluating the economic efficiency of individual facilities and complex water supply projects and carrying out cost-benefit analyses for the rational utilization of water resources; (c) determination of the influence of water on the development and distribution of national production and on the formation of infrastructure; (d) elaboration of principles and methods for assessing the economic, social and ecological damage to water resources owing to natural causes and to human economic activities; (e) evaluation of the influence of existing and planned economic instruments in water resources management on a country's price formation system.