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**REPORT OF THE EXECUTIVE SECRETARY ON THE
ACTIVITIES OF THE COMMISSION**

**PROGRESS MADE IN THE IMPLEMENTATION OF THE
PROGRAMME OF WORK FOR THE BIENNIUM 1992-1993**

Report on the
establishment of a regional committee on natural resources

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I. OBJECTIVES

1. The United Nations Water Conference (UNWC), held in Mar del Plata in 1977, and the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992, both emphasized the need to enhance cooperation and coordination at the regional level in the areas outlined below. Evaluations by regional commissions have indicated that immediate action must be taken and concerted efforts made to deal with growing demand and the increasing pressure on scarce resources. The quantitative resource aspects should be dealt with, of course, but issues related to water quality, environmental impact and the pollution of surface water and phreatic aquifers must also be addressed.

2. With respect to regional cooperation and the exercise of coordinating functions by existing structures and mechanisms, there is serious concern over the ability of water-oriented agencies and organizations to meet the growing needs and to address key issues arising from the complexity of water systems in the region and increasing pressure on these systems. Arrangements must be made to promote technology transfer and to facilitate the exchange of information on transboundary basins; to coordinate and facilitate the flow of information, an appropriate mechanism is required. Better inter-agency coordination would ensure that water-related activities complement each other and that unnecessary duplications and gaps in activities would be avoided.

3. One proposed mechanism is conceived as a body that would provide a forum for organizing new partnerships among countries. Arab organizations, international agencies and donor communities would join forces to help countries achieve their water strategy goals and objectives more effectively and efficiently. This report contains a proposal for establishing a mechanism to facilitate cooperation and consultation among Economic and Social Commission for Western Asia (ESCWA) member countries with respect to various technical water issues.

4. With a view to achieving the above, missions were undertaken covering most ESCWA countries for an exchange of views and for consultation with concerned officials regarding the form of the proposed mechanism. A consultant was also engaged to contribute to this report.

II. COOPERATION AND COORDINATION AMONG WATER INSTITUTIONS IN THE ESCWA REGION

5. Water is a scarce resource in most of the ESCWA region; the per capita share of available resources is low and is expected to decline further during the coming decades if the population continues to grow at the present high rate (or even at a reduced rate). Endeavouring to meet rising demand, many countries have taken important steps towards organizational and institutional development. Various bodies have been set up in the ESCWA region to carry out functions related to the assessment, allocation, planning, development and management of water resources. The frameworks and responsibilities vary from one country to another.

6. Although the mechanism proposed in this document is primarily concerned with cooperation and coordination functions at the regional level, the main beneficiaries of such cooperation and coordination are member countries; within each are several institutions that are potential partners in regional activities. The benefits of cooperation could be maximized if the combined interests of the different institutions and national departments are taken into account.

7. It is imperative that coordination be achieved first at the national level. The actors and partners involved in regional water-related activities are numerous, and in some countries current institutional frameworks are rather complex (due to the complexities of water-resource management issues themselves); consequently, it is rarely feasible to allocate all the necessary development and management functions to one institution.

8. One of the most important factors affecting the institutionalization of new agencies is the population explosion--particularly in urban areas, where the combined effects of immigration and high rates of natural growth have translated into much greater water demand.

9. Urban water shortages have become a major problem as many of these populous areas are situated above unproductive aquifers or saline water bodies. Moreover, whether urban or rural, water shortages are generally accompanied by a growing demand for agricultural irrigation. Urban expansion and the aridity of the region mean that two subsectors--"water supply and sanitation" and "irrigated agriculture"--are of prime concern.

10. Institutions involved in water-related activities (potential partners) that are active at the national, subregional or regional level are listed in annex II. The following sections discuss some of the general characteristics of these institutions and organizations, with emphasis on areas such as fragmentation of the institutional framework, decentralization, devolution, consolidation and coordination.

A. At the national level

11. The institutional structure at the national level generally includes three types of authorities:

(a) Decision-making and coordinating authorities define policies, and also plan and coordinate actions/activities;

(b) Advisory bodies advise, and also collaborate with decision-making and coordinating authorities;

(c) Executive authorities and bodies carry out actions/activities.

12. All three of the above could exist at the national, regional and/or local levels, thus ensuring the coverage of territories by decentralized units, with hierarchical relationships within the first and third types of authorities mentioned above.

13. Although (the principal aspects of) several water administration systems are still centralized, the second half of this century has seen a tendency towards devolution and decentralization. As water demand grows, the many problems that arise constitute a considerable burden upon national governmental structures; these problems can be more readily solved if the relevant institutional infrastructure is decentralized. The International Conference on Water and the Environment, held in Dublin in 1992, recommended that "Integrated water resources development and management...should be delegated to those lowest appropriate levels which would ensure the representation of those concerned or affected and integration of sectoral demands". (These "lowest levels" might be existing institutions or basin authorities.)

14. The multiplicity of institutions and the splitting up of authority do not necessarily result from national planning trends that aim to achieve a decentralized system. Generally speaking, most of the institutional structures in the ESCWA region have been developed in the second half of this century; during this period, State intervention in water issues has been characterized by the sharing of responsibilities with a large number of authorities which were created as water demand--and its attendant problems--increased.

15. Such sharing of responsibility among many water institutions (now common in a number of countries in the region) resulted in the fragmentation of the water sector--especially in Yemen and Egypt. In Yemen, there are several ministries and other authorities carrying out water functions. In Egypt, in addition to the Ministry of Public Works and Water Resources (the principal body responsible for both surface water and groundwater resources), there are five other ministries involved in water resource activities. In other countries within the ESCWA region, the water organization "partners" are less elaborate, and there has been a kind of structural consolidation over the last decade. In the Syrian Arab Republic, the Ministry of Irrigation has been created, replacing the Ministry of the Euphrates Dam, and the departments concerned with water functions are to be found in the Ministry of Public Works and Water Resources. In Jordan, the Ministry of Water and Irrigation is now responsible for the development, management, and conservation of water resources.

Coordination at the national level

16. Any approach intended to rationalize State control is centred around two main options: (a) to concentrate responsibility and authority for water issues in a single body; or (b) to arrange for coordination of the authorities and services concerned--at all levels--by means of a suitable mechanism. Both

options require a decentralization of management so that authorities can be set up at the basin level. The most suitable solutions naturally depend on the specific conditions of each country.

17. A coordinating mechanism at the ESCWA regional level cannot function effectively unless it exists as an appropriate coordinating body that represents the interests of all concerned agencies in a given country. Regional activities are carried out to complement and support national efforts to address certain problems. Activities such as training, information exchange and technology transfer could be of interest and benefit to the agencies involved in water-related activities, and national coordinating authorities would be the most appropriate entities to advise on the participation of national bodies in regional activities.

B. At the regional and international levels

18. Central to the establishment and functioning of a new coordinating mechanism is the identification of potential regional and international partners. Most of the agencies and organizations which provide external support (ESAs) are involved in a wide spectrum of activities--some of which may be water-related. The ESAs which undertake large water projects and those with limited water programmes will be covered in a later study; information on their activities must be updated periodically. Bilateral and multilateral ESAs that are not active in the water sector at present may support large water programmes in the future as priorities change according to evolving needs. The identification of ESAs as partners should be a continuous process, with the initial inventory regularly revised and updated.

1. Arab organizations

19. The Arab Centre for the Study of Arid Zones and Dry Lands (ACSAD) deals with water and a number of other activities. Its principal objective is to support national efforts aimed at achieving water security; this entails maintaining adequate supplies of good-quality water for the rapidly growing population and fostering cooperation among riparian countries with transboundary basins. The water strategy of the Center also includes supporting the continuous assessment and environmentally sound management of water resources in the Arab countries. Since the Center has both land and water divisions, its strategy emphasizes the integration of these two aspects.

20. The mandate of ESCWA allows it to proceed further along the line of integrated management--specifically, to foster the integration of sectoral water plans within the framework of national economic and social policy. Such an approach is of paramount importance for action in the 1990s and beyond.

21. The Arab League Educational, Cultural and Scientific Organization (ALECSO), and the United Nations Educational, Scientific and Cultural Organization's Regional Office for Science and Technology for the Arab States (UNESCO/ROSTAS) are cooperating with member countries and with other organizations involved in water-related activities in the region in the implementation of the fourth-phase activities of the International Hydrological Programme (IHP IV, 1990-1995) foreseen for the ESCWA region. The aims include:

(a) Improving understanding of the processes of the hydrological cycle and determining the manner in which these processes might be appropriately disseminated to meet the planning requirements of water management schemes;

(b) Developing guidelines for education and training programmes and for the provision of relevant water-related information to the public;

(c) Providing methodologies for the assessment and integrated management of water resources.

22. At the subregional level, the six-State Gulf Cooperation Council (GCC) concentrates on water issues which are of vital importance to the Gulf States.

2. Funding institutions

23. Funding institutions play a primary role in supporting water resources assessment and water-development or water-supply schemes. Governments usually carry out the actual assessments (and deal with other such issues), and are generally responsible for establishing a database--a prerequisite to water resource development.

24. The Islamic Development Bank (IDB) and the Arab Fund for Economic and Social Development (AFESD) provide substantial support to countries in the region for sustainable development of the water sector. The AFESD water-related programmes are generally well coordinated with the World Bank and UNDP programmes in the region. The objective of external support is to enhance the capacity of countries to develop and manage water-related programmes.

3. Organizations of the United Nations system

25. The Food and Agriculture Organization of the United Nations (FAO) and the United Nations Environment Programme (UNEP) are active in the region. The latter has a regional office in Bahrain which endeavours to promote water strategies aimed at incorporating environmental concerns into projects for water resource development. FAO has developed the International Action Programme on Water and Sustainable Agricultural Development to assist countries in integrated water resource planning, development and management to meet the future needs of agricultural production. In order to reach this objective, FAO will assist national Governments and regional institutions in updating their current policies and strategies and in developing and implementing programmes to translate these policies into action. It is now evident that water resource projects can be better planned and managed to ensure more reliable water availability and efficient water use in the agricultural sector and to reduce adverse environmental impacts such as waterlogging and salinization.

26. The water-related functions and activities highlighted above constitute only a part of the functions and strategies of existing and potential "partners" in the ESCWA region. A more thorough and complete survey of existing and planned activities for the 1990s and beyond would be an essential function of the proposed mechanism.

27. Water scarcity and the degradation of freshwater resources pose a growing threat to the region. Food security, human health and socio-economic development are all at risk, and concerted efforts are urgently needed for the effective management of water resources in this decade and in the twenty-first century.

C. Existing coordination mechanisms

28. A high-level coordination committee was established within the League of Arab States system, with the objective of coordinating its organizational programmes. The committee meets twice a year to examine proposed projects and activities related to research, education, and training, and to agricultural, industrial and socio-economic development. Water-related activities are examined within the framework of agricultural research and development programmes. Only one organization--ACSAD--is concerned with various aspects of water resources assessment, management and use (through its Water Resources Division and Land and Water Division), and the common areas for coordination include mainly human resource development, environmental impact (of agricultural and industrial water use) and public awareness. In these programme areas, coordination is achieved through the planning and implementation of joint activities and projects.

29. This organized, long-standing coordination has proved successful. Much of the work is done before the coordinating committee meeting, through the exchange of information on planned activities and through workshops and meetings held to plan major projects.

30. The AFESD maintains close cooperation with other Arab funding institutions and actively seeks to promote dialogue and to pursue practices of mutual concern. Information is regularly exchanged between AFESD and their donor institutions on issues related to capacity-building--particularly institutional and human-resource development in water-related fields. To coordinate its activities in the water sector and in other areas related to socio-economic development, AFESD also maintains close contact with the United Nations Development Programme (UNDP) and the International Bank for Reconstruction and Development (IBRD).

31. At the international level, the Economic and Social Council requested the Administrative Committee on Coordination (ACC), the United Nations organizations involved in water-related activities, and the regional commissions to make the necessary arrangements for promoting inter-organizational cooperation. Pursuant to this request, the ACC established the Intersecretariat Group for Water Resources (ISGWR) (later renamed the Subcommittee on Water Resources) for organizations of the United Nations system involved in water-related activities.

32. Effective coordination must become a priority among the groups of funding institutions, United Nations organizations, League of Arab States organizations, national agencies and other active institutions in the region.

III. CONCLUSIONS AND RECOMMENDATIONS

33. There is a need for a regional mechanism to identify key issues that must be addressed at the regional level; however, this does not necessarily entail the creation of a new mechanism. The first step of such a mechanism is to review the list of existing regional and subregional organizations and to identify the needs that are not adequately addressed by these bodies, taking into consideration the possibility of "reinforcing" them to enable them to carry out their required functions. An inventory of existing regional and international organizations and other institutions involved in water-related activities in the ESCWA region has been compiled (annex I). The mandate of these bodies (even when they are reinforced) does not allow them to tackle certain problems or fundamental issues of national and regional significance. Coordination among these institutions and organizations is ineffective or even lacking. It is vital to address certain issues of regional importance, as water problems are rapidly growing. Water security has become the long-term objective of all countries of the region.

34. More effective coordination and greater cooperation are needed to support national efforts (a proposed mechanism for this is described in annex I).

35. The proposed mechanism, acting as forum for dialogue among all parties concerned, would contribute substantially to the achievement of national goals. Such a platform would serve to harmonize the policies and programmes of international, regional and bilateral organizations, as desired and recommended by the countries concerned. It is suggested that this mechanism should be country-driven and not imposed by organizations or donors providing support to the region.

36. The envisaged mechanism is not a new structure or a separate organization; nor is it designed to be an implementing agency. Instead, it should be viewed as a framework for providing support to existing implementing bodies and facilitating exchanges among member States, for improving coordination and cooperation, and for supporting the water resource projects managed by the States.

37. Information obtained from concerned officials in a number of ESCWA countries suggests that ESCWA should introduce the proposed mechanism of cooperation by initiating a series of meetings, workshops, and seminars during which officials concerned with water resources could discuss different water issues (shared water resources; new water technologies; building capacity; water resources assessment, planning and policies; etc.). With the passage of time, these gatherings would likely result in a regional water resources coordinating council (or a similar type of forum). To ensure this conclusion, the water resources subprogramme of ESCWA for 1994-1995 includes two meetings on cooperation and coordination among agencies active in the water sector. During these meetings, water experts from different ESCWA countries are expected to discuss various water problems.



Annex I

PROPOSED MECHANISM FOR COOPERATION AND COORDINATION
IN THE WATER SECTOR



A. Proposed mechanism

1. The proposed mechanism is relatively simple, designed mainly to facilitate water resources coordination at the regional level. A "regional water resources coordinating council" could be assigned the task of reviewing and following up on the progress of Agenda 21 on freshwater issues. Permanent links would need to be established with a follow-up mechanism at the national level; such an arrangement would allow for a periodic review of progress on the water-related issues of Agenda 21. By providing a platform for consultation and dialogue, the proposed mechanism would encourage countries to play a vital role in planning future activities, coordinating ongoing projects, and dealing with existing and potential problems facing the region. Such a country-driven mechanism would be more responsive to the actual needs of the countries concerned.

B. Objectives

2. The regional water resources coordinating council would seek to:

(a) Harmonize the water policies and programmes of international, regional and bilateral organizations; provide support to countries in the region; and formulate joint activities when appropriate;

(b) Foster regional and subregional cooperation on common issues or in combating the adverse impact of water resource development;

(c) Provide a forum to encourage dialogue and the exchange of views on transboundary issues; and support the development of institutional mechanisms for the coordination of water resources management at the basin level;

(d) Periodically review the progress made in the implementation of the freshwater programme areas of Agenda 21.

C. Coordination function

3. Coordination is the principal function of the proposed mechanism. Countries in the region belong to a variety of subregional, regional and international organizations; it would be advantageous to all parties concerned to coordinate functions that have common elements and to harmonize policies and approaches where common interests exist. Equally important is the need to harmonize the efforts of overlapping subregional and regional organizations to avoid the formulation of conflicting programmes and activities.

4. Cooperation and coordination would also enhance the transfer of technology and promote joint research; the coordinating council could serve as a clearing-house for member countries, multilateral and bilateral support agencies, and international, governmental and non-governmental organizations.

5. The proposed forum would likely be more effective in the implementation of its plans and programmes if it were linked closely to the decision-making bodies and processes within the United Nations system.

D. Planning function

6. The coordinating council would help countries establish long-term strategies to meet the demands of a rapidly increasing population, taking into account considerations of sustainability.

7. A prerequisite to integrated water resources planning is the assessment and comprehensive analysis of current water resource development, national goals and priorities, problems, and key issues.

8. The council could assist Governments in evaluating a variety of institutional arrangements for decentralized planning. The degree of decentralization and the delegation of tasks and responsibilities to the appropriate levels would largely depend on the circumstances and conditions within individual countries.

E. Integrated water resources management

9. One of the new approaches included in the UNCED recommendations relates to integrated water resources management, which is of paramount importance in the 1990s and beyond.

10. The promotion of this new interactive and multisectoral approach to water resources management is an important function of the proposed coordination council. The concept is based on a better understanding of the interaction between water resource development and socio-economic development, and also on the management of a whole range of development activities within a framework which is limited by the finite nature of the resource--especially in terms of supply management, demand management and environmental sustainability.

F. Technology transfer and research function

11. The existing systems for technology transfer must be strengthened in the areas of water resources assessment and management. The use of simulation techniques for analysing aquifer systems and the development of forecasting methods and economic planning models all require the application of new techniques, including the use of geographical information system (GIS), to gather, analyse and disseminate multisectoral information.

12. The development of new sources of water supply will require intensified applied research efforts. Encouraging research coordination and technical cooperation among the countries of the region--and thereby facilitating better communication among researchers, designers and those responsible for development--is an effective way of focusing on the problems facing these countries for the purpose of finding cost-effective solutions.

13. The proposed council would assess the requirements for strengthening technological capabilities and would assist (with the support of bilateral and multilateral organizations) in the transfer and dissemination of technical information and expertise. Non-conventional methods of increasing the resource base, such as desalination and water re-use, are important and require further development.

G. Development of regional strategies for water sector capacity-building

14. A vital step towards the development of a strategy for capacity-building in the water sector is water sector assessment. Effective assessment first requires an examination of development and institutional policies, legal regulatory tools and human resource requirements. According to the Delft Declaration on Capacity-Building involves:

- (a) Creating an appropriate policy and legal framework;
- (b) Institutional development which includes community participation;
- (c) Human resource development and the strengthening of managerial systems.

15. The proposed council would assist in the coordination of ESA activities, then encourage the agencies themselves to sustain this coordination.

16. The agents for capacity-building are non-governmental organizations, professional associations, universities, training centres, and human resource development institutes.

H. Organizational structure

1. Name and headquarters

17. The proposed mechanism would be called either the "Regional water resources coordinating council" or the "Regional water resources coordinating committee". For the first three years, the council would be based at ESCWA headquarters to maximize ESCWA input during the critical early stages. At the third meeting of the council's general assembly, a decision could be taken to move the headquarters to a member country that wishes to host the council.

2. Composition

18. The council would be composed of ESCWA member States, as well as representatives of regional and international organizations and donor agencies (associate members).

3. Bodies

The council would be composed of:

- (a) A general assembly;
- (b) An advisory committee;
- (c) A secretariat.

(a) The general assembly

19. The general assembly would be composed of ESCWA "country members", and would meet once a year to examine the council programme and to evaluate the results of past and/or ongoing activities on the basis of reports presented by the permanent secretariat.

20. The meeting of the general assembly would be held at ESCWA headquarters or in a country that offered to host the meeting. The assembly would be chaired by the hosting country. If the meeting were hosted by ESCWA, a chairman would be elected for that meeting by the general assembly.

(b) The advisory committee

21. The advisory committee would consist of a number of specialists from countries which represented the various hydrological subregions (Mediterranean, Gulf, etc.) and of representatives of the organizations involved in various water activities in the region (United Nations organizations, League of Arab States organizations, donor agencies, etc.). The number of experts from each group of partners (countries and organizations) would be decided upon by the general assembly, which would then appoint these experts on the recommendation of the secretariat or country members.

22. The work of the advisory committee would be supported by the secretariat and would include:

- (i) Organizing an ad hoc working group to deal with priority programme areas suggested by the general assembly;
- (ii) Preparing recommendations that would help the general assembly carry out the coordination, planning, cooperation and other functions of the council;
- (iii) Organizing the council's overall goals and strategies by outlining a two-year programme, assessing budget needs and suggesting potential sources of financial support for the programme, and reviewing programme implementation;
- (iv) Organizing seminars, workshops, and short training courses with the support of the secretariat.

(c) The secretariat

23. A secretary for the council would be designated by ESCWA in the initial phase, after which the council would develop into an independent and autonomous mechanism. The council secretary would be assisted by a small staff.

Annex II

WATER RESOURCE INSTITUTIONS IN THE ESCWA REGION



Annex table 1. International institutions (Regional bureaux)

Institution	Subunit	Headquarters	Area covered	Objectives	Functions	Main water-related activities
Economic and Social Commission for Western Asia (ESCWA)	Natural Resources Division	Amman	Western Asia: Arabian Peninsula, Mashrek and Egypt	To coordinate international and regional water resources activities in the region as they pertain to economic and social development	(a) Water resources assessment; (b) Water resources information systems; (c) Management and efficient use of water resources; (d) Human resources development.	(a) Establishment of database systems; (b) Use of remote sensing in hydrogeological/hydrological investigations; (c) Networking in human-resource development in the water sector; (d) Optimal management and conservation of water resources; (e) Introduction of new technology.
United Nations Educational, Scientific and Cultural Organization (UNESCO)/Regional Office for Science and Technology for the Arab States (ROSTAS)	-	Cairo	Arab region	To foster regional cooperation and assist member States to contribute to and benefit from UNESCO activities	Promotion and assistance in: (a) Hydrological research; (b) Management of water resources; (c) Education/training; (d) Public information.	(a) Workshops and training courses in water resources, and database development in hydrology; (b) Water resources assessment in the Arab region; (c) Preparation of water resources atlas for the Arab region.
United Nations Environment Programme (UNEP)/Regional Office for West Asia (ROWA)	-	Bahrain	Western Asia: Arabian Peninsula, Mashrek and Egypt	To integrate environmental concerns and impacts into the management of water resources	(a) Environmentally sound water management; (b) Environmental impact assessment; (c) Definition of water policy and desertification control.	(a) Environmentally sound management of shared aquifer systems; (b) Development of strategies for the management of water resources.

Annex table 1. (continued)

Institution	Subunit	Headquarters	Area covered	Objectives	Functions	Main water-related activities
Centre for Environment and Development for the Arab Region and Europe (CEDARE)	-	Cairo	Arab region and Europe	To identify approaches and technologies for integrating environmental and socio-cultural concerns into the development process	(a) Integrated analysis and research; (b) Data collection and dissemination; (c) Public education; (d) Human resource development.	(a) Management of fresh water resources; (b) Survey of the quality and quantity of resources; (c) Maintenance of water quality.
World Health Organization/Centre for Environmental Health Activities (WHO/CEHA)	-	Amman	Eastern Mediterranean region	To promote environmental health protection measures via regional cooperation, exchange of information and educational training	(a) The provision of technical support for capacity-building; (b) Serving as a regional technical information centre for environmental health and related resource protection; (c) The provision of technical support to develop sound environmental plans and policies.	CEHA activities during the period 1985-1990 were related to: (a) Training for manpower development; (b) Information-exchange services and networking; (c) Technical cooperation for institution-building;

Note: "----" indicates that the item is not applicable.

Annex table 2. Arab regional organizations

Institution	Subunit	Headquarters	Area covered	Objectives	Functions	Main water-related activities
Arab Centre for the Study of Arid Zones and Dry Lands (ACSAD)	Water Resources Division	Damascus	Arab region	To establish the information base required for the agricultural and social development of arid zones and to achieve water security in the Arab region.	(a) Monitoring and evaluating natural resources (water, land, etc.); (b) Conserving and protecting natural resources; (c) Integrated development and management of natural resources; (d) Human-resource development.	(a) Formulation of a strategy and preparation of a plan for Arab water security; (b) Assessment and mapping of water resources in the Arab countries; (c) Development of water-resources data-bases in the Arab countries; (d) Establishment of training programmes geared towards the specific needs of countries.
Arab League Educational, Cultural and Scientific Organization (ALECSO)	Science Department	Tunis	Arab countries	To bring together the people of the Arab countries by reconciling their ideas and upgrading their cultural, educational and scientific level in order to play a positive role in human civilization	Water-related functions include: (a) Promoting education and training in the water sector; (b) Raising public awareness; (c) Facilitating the implementation of IHP* projects in the Arab region.	(a) The convening of periodic regional meetings of Arab IHP* national committees; (b) Promotion of education and training in the field of water resources (c) Awareness-creation activities.
Arab Organization for Agricultural Development (AOAD)	Natural Resources Division	Khartoum	Arab region	(a) To develop natural and human resources in the agricultural sector; (b) To increase productivity and agricultural production to achieve food security.	(a) Implementing pilot agricultural projects; (b) Conducting feasibility studies on agricultural projects; (c) Improving the State's information on and understanding of natural resources; (d) Exchanging information and human-resource development	(a) Preparation of a strategy for food security in the Arab region; (b) Assisting countries in the formulation of agricultural policies; (c) Contributing to water-use and water-security programmes.

* IHP = International Hydrological Programme.

Annex table 3. Organizations in the Syrian Arab Republic

Authority	Institution	Subunit	Headquarters	Area covered	Mandate
Ministry of Irrigation	-	-	Damascus	Entire country	The Ministry is responsible for: (a) Water resource data collection, archiving and dissemination; (b) Water resources assessment, development and protection; (c) Water resource management, water legislation and pollution control; (d) Planning and implementation of irrigation and drainage projects; (e) Training of technicians in areas related to its main functions.
	Irrigation Department		Damascus	Entire country	(a) Water resource planning; (b) Design of irrigation and drainage projects; (c) Land reclamation; (d) Development of water-use policies.
	Dams Department		Damascus	Entire country	(a) Design and implementation of dams projects; (b) Management, operation and maintenance of dams and other hydraulic structures.
	Water Resources Department		Damascus	Entire country	Comprised of a bureau for surface water responsible (along with a basins bureau) for stream and spring gauging and hydrologic studies; and groundwater bureau, responsible for the siting of water wells and groundwater investigations.
Ministry of Irrigation (continued)	Pollution control Department		Damascus	Entire country	(a) Collecting hydrochemical and pollution data; (b) Setting pollution standards; (c) Preparing legal and regulatory measures for pollution control;

Annex table 3. (continued)

Authority	Institution	Subunit	Headquarters	Area covered	Mandate
	General Directorates of irrigation:			Each Directorate covers a water basin	The general directorates are the executive authorities for water management. They cooperate with and assist local government entities, municipalities and other authorities at the local level. The General Directorates are also responsible for the collection of surface water and groundwater data, and for the implementation and water projects. The Euphrates River Agency comprises bodies for land reclamation, the management of irrigation schemes, and the operation of the reservoirs.
	(a) Yarmouk basin;	Dera'a			
	(b) Orontes basin;	Hama			
	(c) Steppe basins;	Homs			
	(d) Khabour and Tigris basins;	Hassacke			
	(e) Coastal basin;	Lattakia			
	(f) Euphrates basin.	Raqqa			
Ministry of Housing and Utilities	Drinking Water Supply Department		Damascus	Entire country	Community water supply and sanitation. (a) Identifying and monitoring sources of drinking water; (b) Conducting studies related to water resource (mainly groundwater) development.
	General Organization for Drinking Water and Sewerage		Damascus	The province (Mohafaza) in question	(a) Design and implementation of drinking-water supply and sanitation projects; (b) Management, operation and maintenance of water-supply and sanitation facilities.
General Environmental Authority	-		Damascus	Entire country	(a) Environmental protection and pollution control; (b) Protecting the quality of freshwater resources.
General Company for Water Studies	-		Homs	Entire country	(a) Water resources assessment; (b) Water resource development; (c) Design of irrigation schemes.
General Company for Irrigation and Drinking Water Supply	-		Homs	Entire country	Implementation of: (a) Water-supply schemes; (b) Irrigation projects.

Annex table 4. Organizations in Iraq

Authority	Institution	Subunit	Headquarters	Area covered	Mandate
Ministry of Irrigation	-	-	Baghdad	Entire country	(a) Collecting hydrological data; (b) Operation and maintenance of hydraulic and irrigation structures; (c) Investigation of water-related problems in reservoirs; (d) Studies related to erosion and sedimentation in rivers; (e) Rehabilitation and repair of old dams;
State Organization for Groundwater	-	-	Baghdad	Entire country	(a) Drilling and well design; (b) Operation and maintenance of water wells; (c) Hydrogeological investigations; (d) Groundwater assessment and evaluation of groundwater potential.
Soil and Water Research Institute	-	-	Baghdad	Entire country	(a) Surface and groundwater hydraulics, and the hydraulic behaviour of lakes and rivers; (b) Improvement of irrigation methods; (c) Study of hydraulic structures for the purpose of design optimization.
National Council for Scientific Research	Water Resources Institute	-	Baghdad	Entire country	(a) Hydrological and hydrogeological investigation; (b) Water resources management; (c) Research and analysis of specialized water-related technical problems.
Ministry of Agriculture and Land Development	General Establishment for Groundwater	-	Baghdad	Entire country	(a) Land reclamation; (b) Groundwater studies geared towards dealing with issues related to irrigated agriculture.
Organization for Desert Development	-	-	Baghdad	Arid and semi-arid parts of the country	(a) Study of wadi systems and aquifer recharge; (b) Development of wadi aquifers and deep non-renewable groundwater resources; (c) Research related to arid-zone hydrology.

Annex table 5. Organizations in Lebanon

Authority	Institution	Subunit	Headquarters	Area covered	Mandate
Ministry of Water and Electricity Resources	Water Development Authority		Beirut	Entire country	(a) Water resources assessment; (b) Collection and storage of water-related data and information; (c) Planning and designing water projects; (d) Water resource planning and management.
Drinking Water Supply and Sewerage Authority	-		Beirut	Entire country	(a) Design, operation and maintenance of drinking-water-supply projects; (b) Provision of sanitation services collecting, purifying, treating and disposing of water.
Agricultural Research Centre	-		Beirut	Entire country	(a) Carrying out drainage investigations, and evaluations of alternative drainage designs and operation and maintenance practices; (b) Introducing modern irrigation-technique, water-saving, and management systems; (c) Collecting, archiving and processing hydrological data.
National Authority for the Litani River	Department of Studies and Research		Beirut	Litani River basin	(a) Hydrological studies; (b) Irrigation and drainage studies; (c) Implementation, operation and maintenance of water projects.

Annex table 6. Institutional arrangements in the Gulf Cooperation Council States

State	Institution	Legislation	Mandate
Bahrain	Water Resources Council	Law No. 7, 1982 Law No. 12, 1980	Water planning, policy formulation, coordination of water activities, and groundwater conservation and development
Kuwait	Ministry of Electricity and water	-	Construction, maintenance and operation of water-supply projects, including desalination plants, groundwater exploration and licensing, and applied research
	General Commission for Agriculture and Fisheries	Law No. 94, 1983	Land and water utilization for agriculture and fisheries
	Kuwait Institute for Scientific Research (KISR)	1981	Applied water-resources research and development, in cooperation with concerned authorities
Oman	Water Resources Council and General Commission for Water Resources	Sultanate Decree No. 45/85, 1985; and No. 63/79, 1979	Water planning and policy formulation; assessment and approval of water projects; coordinating water activities; approving water legislation and regulations and budget allocations for water studies and works. Manpower training and water data banking.
	Ministry of Electricity and Water	-	Domestic water supply maintenance and operation, including desalination activities
Qatar	Ministry of Electricity and Water Resources	-	Domestic water supply maintenance and operation, and the construction of relevant networks, including desalination facilities
	Ministry of Municipal Affairs and Agriculture	-	Irrigation water supply, well-drilling permits and groundwater monitoring and development
Saudi Arabia	Ministry of Planning	-	Socio-economic development planning <u>vis-à-vis</u> water issues
	Ministry of Agriculture and Water	-	Groundwater and surface-water exploration, development and conservation

Annex table 6. (continued)

State	Institution	Legislation	Mandate
Saudi Arabia (continued)	General Corporation for Desalination	-	Water master planning and implementation, policy formulation, and wastewater treatment and distribution for agriculture; and the construction, maintenance and operation of desalination plants
United Arab Emirates	General Water Resources Commission	Law No. 21, 1981	Water planning, policy formulation, coordination of water activities and water-data collection
	Ministry of Electricity and Water	-	Domestic water supply maintenance and operation, and desalination activities
	Ministry of Agriculture and Fisheries	-	Irrigation water supply, and groundwater development, monitoring and investigation

