

ESCWA

Economic and Social Commission for Western Asia

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

**REPORT OF THE
EXPERT GROUP MEETING ON LEGAL ASPECTS OF THE
MANAGEMENT OF SHARED WATER RESOURCES
IN THE ESCWA REGION
8-11 June 2000, Sharm El-Sheikh, Egypt**

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CONTENTS

<i>Chapter</i>	<i>Paragraph</i>	<i>Page</i>
Introduction	1-6	1
I. OPENING OF THE MEETING	7-11	1
II. WORKING PAPERS	12-20	2
III. EVALUATION OF THE MEETING	21	9
IV. RECOMMENDATIONS	22	10

ANNEXES

I. List of participants.....	12
II. Programme of work	17
III. List of documents	21
IV. Meeting evaluation	23

Introduction

1. The Expert Group Meeting on Legal Aspects of the Management of Shared Water Resources in the ESCWA Region was jointly organized by the secretariat of the Economic and Social Commission for Western Asia (ESCWA) and the Centre for Environment and Development for the Arab Region and Europe (CEDARE). The Meeting was held in Sharm El-Sheikh, Egypt, from 8 to 11 June 2000. The Meeting was cosponsored by the United Nations Environment Programme/Regional Office for West Asia (UNEP/ROWA), the Federal Institute for Geosciences and Natural Resources of Germany (BGR), the World Water Council (WWC), and the League of Arab States (LAS).
2. The Meeting was attended by water experts designated by the Governments of nine ESCWA member countries (Egypt, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, Saudi Arabia, and Yemen) and by the Sudan. Resource persons from Lebanon, Saudi Arabia, Yemen, Germany and Switzerland also attended.
3. Representatives of the following United Nations organizations attended the Meeting: the Economic Commission for Europe (ECU), the Economic Commission for Africa (ECA), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the International Network on Water Environment and Health (INWEH) of the United Nations University (UNU).
4. Participants from the following regional organizations also attended: the Arab Organization for Agricultural Development (AOAD); the Inter-Islamic Network on Water Resources Development and Management (INWRDAM); and the Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD). Funding agencies participated in the Meeting through the attendance of representatives of the Saudi Fund for Development (SFD) and the Islamic Development Bank (IDB). Participants from a university (Cairo University) and research institutions (the Kuwait Institute for Scientific Research [KISR] and the National Centre for Remote Sensing, Lebanon) also attended the Meeting (see the list of participants contained in annex I to the present report).
5. The Meeting adopted the provisional agenda (E/ESCWA/ENR/2000/WG.1/1) and the programme of work (see annex II).
6. The documentation for the Meeting consisted of background papers prepared by the ESCWA secretariat; papers prepared by CEDARE; papers prepared by consultants and resource persons from ESCWA, CEDARE, UNEP/ROWA and BGR; country papers prepared by government-designated experts; and papers prepared by representatives of regional and international organizations and scientific organizations (see the list of documents contained in annex III).

I. OPENING OF THE MEETING

7. The Meeting was held under the patronage of His Excellency Mr. Mahmoud Abu Zeid, Egypt's Minister of Water Resources and Irrigation and Chairman of the World Water Council.
8. In his speech, the Minister and Chairman welcomed the participants to the Meeting. He emphasized the importance of the role played by water resources, in particular shared water resources, in the socio-economic development of the region. He then briefed the participants on the main recommendations of the Second World Water Forum, which had been held at The Hague, Netherlands, in March 2000.
9. Mr. Kamal Sabet, the Executive Director of CEDARE, stated that the escalating demand for freshwater in the region was creating a water barrier that might prevent further socio-economic development. Competition for the limited supplies of freshwater could result in serious conflicts, especially since several major rivers and aquifers were shared by more than one country within and outside the region. There were environmental concerns about transboundary pollution, and there was a need to strengthen national and international measures to prevent, control and reduce the release of hazardous and harmful pollutants into international watercourses. The Executive Director concluded by wishing the participants all success in identifying the requirements for sustainable water resources management, in raising awareness

and preparedness for future challenges, and in enhancing and strengthening regional cooperation between member countries in the joint management of their shared water resources.

10. Mr. Walid Abderrahman, a resource person for UNEP/ROWA, stressed the interest of UNEP in the field of water resources quantity and quality protection for sustainable development and emphasized the region's need for technology and legal frameworks. He stated that the region suffered not only from water scarcity but also from misunderstandings about water laws and regulations. The Meeting provides an opportunity for experts and decision makers from the region to discuss and promote understanding of the issues involved in shared water resources.

11. On behalf of the Executive Secretary of ESCWA, the Chief of the ESCWA Natural Resources Section read out a statement welcoming the participants and expressing appreciation to the Government of Egypt and the Minister of Water Resources and Irrigation for hosting the Meeting. The statement stressed the need to enhance regional and interregional cooperation with regard to water resources in general and shared rivers and aquifers in particular. The participants were requested to devote extra attention to the issues concerning cooperation. The statement contained a review of the efforts and contributions by ESCWA, since its establishment in 1974, on behalf of water-related issues in the region. Those efforts had culminated in May 1995 with the establishment by ESCWA of the intergovernmental Committee on Water Resources. The statement called for comprehensive, objective and frank discussions to be held at the Meeting, which would lead to practical recommendations that could be implemented to help establish viable mechanisms for regional cooperation with regard to shared water resources.

II. WORKING PAPERS

12. The Meeting focused on the following five themes, namely: (a) the legal framework for the development and management of shared surface water resources; (b) the legal framework for the development and management of shared groundwater resources; (c) the environmental aspects of the management of shared water resources; (d) the institutional and technical requirements for enhanced cooperation; and (e) conflict resolution. Particular attention was given to the legal and environmental issues involved in shared surface and groundwater resources. Twenty-six papers and two oral presentations were covered during the 13 sessions of the Meeting.

13. The first paper, by His Excellency Mr. Mahmoud Abu Zeid, Egypt's Minister of Water Resources and Irrigation and Chairman of the World Water Council, briefly reviewed the history of development process of World Water Forums, which are held on a triennial basis. The Minister explained the development of the "Vision Process" and the reports and scenarios presented by the various regions of the world at the last Forum and ministerial conference held in March 2000.

14. The Minister summarized the main conclusions of the last Forum, which addressed the following four areas: (a) water cost recovery, as opposed to water pricing, and the need to incorporate into water prices the cost of infrastructures, the economic, social, environmental and cultural values of water, and adequate subsidies to protect the poor; (b) the role of non-governmental organizations (NGOs) that pay special attention to the issues of awareness and education, in both the formal and informal sectors; (c) the private-public partnership for water resources development and management; and (d) shared international water issues.

15. The following papers were presented by the ESCWA secretariat:

- (a) *"ESCWA activities on the issues of shared surface and groundwater sources"*

The paper consisted of two parts. The first part was a review of past and current activities of ESCWA with regard to shared aquifers. It briefly summarized the efforts and outputs of ESCWA for shared groundwater aquifers. ESCWA member States were called upon to further utilize those outputs and to develop joint cooperation programmes for the shared aquifers that had been investigated. Part B of the paper highlighted ESCWA activities during the current programme cycle.

(b) *“International legal norms governing the management of shared surface water resources (international and regional perspectives)”*

The paper presented a thorough review of the legal nature of water and the sources of international law in that regard, highlighting the main water agreements on the major rivers in the region and analysing the general principles of law and of international customary law. The Convention on the Law of the Non-navigational Uses of International Watercourses was also reviewed, from its development to its main articles and principles. The paper posed several questions regarding the legal status of wadi systems, and concluded with a list of the barriers to and advantages of water cooperation, international problems of water utilization and proposals for enhancing water cooperation in the region.

(c) *“Legal framework for the management of shared groundwater resources: international and regional perspectives”*

The paper began with an overview of the main groundwater basins in the ESCWA region. It reviewed the main principles and status of international water law on shared groundwater aquifers, and stated that there was a lag in the development of that particular branch of international law. The paper outlined the main problems with regard to the above Convention with respect to shared groundwater. Finally, the paper proposed a set of recommendations to enhance cooperation with regard to shared groundwater.

(d) *“Shared groundwater resources in the ESCWA region: the need, potential benefits and requirements for enhanced cooperation”*

The paper stated that there was a growing water deficit in most ESCWA member countries and pointed out that the increasing threats to shared rivers would increase the already important role of shared aquifers in meeting the heavy water demand. Hydro-political stresses were likely to increase as a result of increases in the dependency on shared water resources. The region needed to develop a mechanism to enhance cooperation among member States and facilitate agreements on the development and management of their shared rivers and aquifers. The drives, potential benefits, constraints and requirements for enhanced cooperation were identified. Finally, a mechanism to enhance cooperation, to be implemented in two phases, was proposed. During the first phase, the development phase, a framework for enhanced groundwater cooperation would be prepared. The framework would consist of three components: a charter on groundwater management, a draft agreement, and an action plan. The second phase, the implementation phase, would comprise three stages: pilot project identification, project development, and project implementation.

16. The ESCWA secretariat also made the following two oral presentations:

(a) *“Issues and requirements for enhanced cooperation in the utilization and management of shared water resources”*

The presentation listed the main symptoms of mismanagement in the ESCWA region and the issues in upstream States, downstream States, States with bordering rivers, and States with shared aquifers. Basic principles and guidelines on how to deal with those issues were suggested. The concept of “basin boundary” was the basic unit for effective management. The roles of data, international organizations and other key players in the management of shared resources were reviewed, along with the institutional aspects of the issues. The need for legal instruments for cooperation was highlighted, together with the scope and requirements for cooperation.

(b) *“Issues and requirements for enhanced cooperation with regard to transboundary pollution of shared water resources”*

The presentation listed the main environmental concerns in the region, with emphasis on the following points:

- (i) The environmental issues associated with water resources required international, regional, multilateral or bilateral conventions, agreements or protocols. The modalities for achieving bilateral and multilateral agreements were reviewed;
- (ii) Harmonization of environmental legislation, standards, monitoring and reporting protocols relevant to the protection of shared water resources was needed;
- (iii) ESCWA efforts for harmonization had revealed that standards were already harmonious to a large extent. An action plan for the harmonization of environmental standards was proposed by ESCWA;
- (iv) Promotion of standards and legislation could be carried out at the national and local levels when stakeholders took part in negotiating and adopting them;
- (v) Implementation capacities needed to be developed;
- (vi) When the legal framework for regional cooperation on the environmental aspects of shared water resources was reached, it should also provide guidelines for the management of environmental disputes.

Finally, since prevention led to protection, the presentation explained the important preventive role to be played by environmental impact assessments (EIAs) for development projects in a transboundary context.

17. CEDARE presented the following six papers, which addressed issues of conflict resolution, shared groundwater resources, environmental issues and institutional requirements for efficient management of shared water resources:

(a) *“Towards a legal framework for shared groundwater resources”*

The paper proposed a legal framework for shared groundwater resources appropriate for application in the Arab region. The proposed framework was justified by the existence of shared aquifers and the special importance of groundwater to the Arab countries. The guiding principles of the proposed framework were regulation and harmonization, with emphasis on the following: (i) control and monitoring of abstraction and spring flows in border areas; (ii) initiating frontier agreements indirectly protecting groundwater; and (iii) initiating agreements addressing the effects along frontiers of surface water development on groundwater, and groundwater development on surface water. The basis of harmonization would be the exchange of experiences between the countries sharing the aquifer system and the dissemination of best practices through networking.

(b) *“Settlement of public international disputes on shared water resources”*

The paper provided an overview of the mechanisms and tools required for settling disputes and resolving conflicts arising in regard to shared water resources. Special attention was given to Article 33 of the Charter of the United Nations, which dealt with the pacific settlement of disputes, and stipulated that

“1. The parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice.

“2. The Security Council shall, when it deems necessary, call upon the parties to settle their dispute by such means.”

The paper also reviewed the mechanism for settlement of disputes provided by the Convention on the Law of the Non-navigational Uses of International Watercourses.

(c) *“Environmental impact assessment for irrigation projects”*

The paper focused on agricultural development and irrigation projects. Particular emphasis was given to transboundary impact, in which a project in a certain country might have a substantial impact on other riparian countries further downstream. The paper introduced an Environmental Impact Assessment Decision Support System (EIADSS) developed by CEDARE to address the problem. The System was a comprehensive tool that made it possible to evaluate irrigation project alternatives on a comparative basis, analysing all relevant aspects of the surrounding environment including transboundary impact. Inputs to the EIADSS included responses to a set of multiple choice questions regarding the baseline conditions and the general design for several project alternatives. An expert system within the EIADSS translated the responses into positive and negative scores reflecting the expected impact. Other inputs to EIADSS included parameters to calculate economic indicators. EIADSS outputs, in the form of positive and negative scores, allowed the user to evaluate different criteria to assess the impact on neighbouring and project areas. The various kinds of impact were categorized as: natural resources, biological life, socio-economic, political, and economic. The user was also required to assign importance weights to each of those categories. The final output was an overall environmental index for each project alternative. EIADSS was an efficient tool for supporting the decision-making process, particularly in regard to decisions on project alternatives based on their anticipated environmental impact, including the economic aspects of that impact.

(d) *“Protection of water quality of deep groundwater aquifers in the Arab region”*

The paper briefly described the sources of freshwater in the Arab region in terms of quantity in relation to current and future demands. The critical situation facing the Arab countries, with respect to the availability of water resources and water quality deterioration, was emphasized. The paper further elaborated on the sources of water pollution, categorizing those sources as follows:

- (i) Natural: related to overexploitation of groundwater resources resulting in sharp drops in the water table/peizometric heads and intrusion of sea water into coastal aquifers;
- (ii) Industrial: related to illegal dumping of solid and liquid hazardous wastes, untreated effluents, and acid rain resulting from excessive air pollutants. The effects of mining and petroleum industries on the quality of deep aquifers were highlighted;
- (iii) Urban: related to untreated sewage and wastewater effluents;
- (iv) Agricultural: related to agricultural drainage water, pesticides and fertilizers.

Groundwater protection measures were highlighted within the framework of integrated water resources management, including how to address the issues of sewage and wastewater, artificial recharge, public awareness and capacity-building.

(e) *“Institutional aspects for proper management of shared water resources”*

The paper presented an in-depth review of the institutional aspects and requirements necessary to ensure proper management of a shared water resource. Examples of established bodies and institutional frameworks responsible for the management of such resources could be found in Europe (the European Commission of the Danube), North America (the International Joint Commission [Canada-United States of America]), Africa (the Senegal River Development Organization [OMVS]), and Asia (the Mekong River Commission). The paper concluded with the following remarks:

- (i) Any river-basin institutional arrangement was largely a reflection of the political situation within the basin;
- (ii) Constant dialogue between riparian countries was needed to establish a joint institution for any given river basin;

- (iii) ESCWA member States needed to develop, as a common denominator, a conceptual framework of water management.

Other recommendations were made urging ESCWA member countries to adopt a conceptual framework, such as the Helsinki Rules on the Uses of International Waters of International Rivers, in order to achieve agreement on common definitions. The paper concluded by emphasizing that adherence to the same water resources management principles would help ESCWA member countries to resolve their internal and external water issues by reinforcing their negotiating powers.

(c) *“Mechanisms of sustainability for environmental management of shared water resources: a case from Lebanon/Syrian Arab Republic ”*

This paper focused on the environmental issues in two rivers shared between Lebanon and the Syrian Arab Republic: the Orontes (*Al-A'ssi*) and the Al-Kabeer Al-Janoubi. The paper reviewed water needs and proposed an integrated approach to achieve sustainability of the shared water resources. The environmental problems were reviewed, along with a framework of the capacity needs for a functional environmental management system, which comprised legal, institutional, financial and technical components. The paper concluded with a structured approach to be followed bilaterally, ensuring proper mechanisms for sustainable environmental management of shared water resources.

19. Four country papers were presented at the Meeting to review the status of, and recent developments in, the water sectors of ESCWA member States with regard to shared water resources and agreements reached with riparian States.

(a) *Egyptian paper: “Units and measures of water requirements for the benefit of all different fauna and flora in the Nile Basin”*

The paper presented a systematic analysis of the water consumption of various fauna and flora in the Nile Basin and stated that that consumption, which drew upon the total water input into the Nile Basin (rainfall), should be taken into account in estimating the total consumption by downstream States.

(b) *“Iraqi paper: “Adverse impact on Iraq of the Turkish projects to exploit the Euphrates and Tigris basins” (in Arabic)*

The paper stated that the continued development projects by upstream States on the Euphrates and Tigris river systems, without an agreement (with Iraq) on the allocation of the water resources of those systems, was causing a substantial decrease in the quantity and quality of water inflow into Iraq. The paper also stated that, on the Euphrates, the annual flow to Iraq would decrease from 30.3 to 8.45 billion cubic metres (BCM), while the salinity would increase from 475 to 1,220-1,275 parts per million (ppm); on the Tigris, the annual flow to Iraq would decrease from 20.9 to 9.16 BCM, while the salinity would increase from 250 to 375 ppm.

(c) *Jordanian paper: “Jordan’s water resources and their management” (in Arabic)*

The paper reviewed Jordan’s conventional (groundwater and surface waters) and non-conventional (treated wastewater) water resources. It outlined the institutional structure of the Ministry of Water and Irrigation and gave a listing of the main components of the water legislation in Jordan. The paper also gave a brief account of recently signed water treaties with neighbouring countries.

(d) *Palestinian paper: “The need to legally define Palestinian water rights”*

The paper reviewed various measures taken by the Israeli authorities that it stated had deprived the Palestinian population of their water rights. Those measures had led to the widening of the water gap between the Jewish and Palestinian communities from near equal consumption in 1948 to a current 3:1 consumption level. The paper outlined the Palestinian viewpoint which, it stated, essentially sought equitable and reasonable sharing of international watercourses based, *inter alia*, on article 6 of the 1997

Convention on the Law of the Non-navigational Uses of International Watercourses. With regard to food security, the paper stated that there needed to be a calculation of “equivalent agricultural utilization per capita” between the Palestinians and the Israelis, also taking into account the percentage of gross national product (GNP) from the agricultural sector. The paper concluded by stating that the issue of water should not lose its rightful importance and true value in the permanent status negotiations.

20. A number of representatives of United Nations entities and other regional and international organizations and scientific institutions presented the following papers:

(a) *The Economic Commission for Europe: “Instruments for protecting and managing shared water resources in the UN ECE region”*

The paper reviewed the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, signed at Helsinki in 1992, and the 1999 Protocol on Water and Health, and their use as implementing instruments for protecting and managing shared water resources. The background and issues with regard to the regional instruments developed by the Economic Commission for Europe were addressed. The contents of the above Convention and its implementation were described, as well as the recent development of the Protocol on Water and Health. The relation to the Convention on Environmental Impact Assessment in a Transboundary Context, adopted in 1991 at Espoo, Finland, was reviewed, and a comparison was made with the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses. The potential of the Conventions as tools to promote conflict prevention and dispute settlement was analysed. Lessons and conclusions were drawn from the experience on the management of transboundary waters in Europe.

(b) *UNESCO: “Transboundary Aquifer Resources Management Programme (TARM Programme): summary note”*

The presentation gave an overview of the TARM Programme initiative of UNESCO, the International Association of Hydrogeologists (IAH), FAO and ECE. The initiative, implemented in February 1999, was aimed at raising the profile of groundwater issues and assessing the trends and effects of control, protection, and other management measures in key aquifers. The ultimate goal was to give greater prominence to integrated and sustainable management of international aquifers. The presentation referred to the IAH proposals submitted at the UNESCO-sponsored Meeting on Regional Aquifer Systems in Arid Zones: Managing Non-Renewable Resources, which was held in Tripoli in November 1999. The proposals addressed three needs: (i) rules on equitable utilization of shared aquifers; (ii) prevention of harm to such resources and to the environment; and (iii) the exchange of information and data. In March 2000, a working group had defined the scope of the programme and had put forward some definitions and recommendations. The proposed work plan of TARM was reviewed. A position paper and Web site were already under preparation. For the medium term (the next two years), a bibliography, database on transboundary aquifers, case-studies of selected aquifers, and regional consultations for participation and consensus-building at the regional level would be developed. For the long term (the next six years), a TARM tool kit would be developed, comprising technical guidelines, examples of legal and cooperative frameworks, a reference database and comprehensive case-studies. The presentation concluded with suggestions on how to pursue the development of legal regimes for the management of shared aquifers.

(c) *United Nations University: “Strengthening management capacity for sharing scarce water resources: Palestinian Ministry of Environmental Affairs”*

The paper consisted of two parts. The first presented an overview of the water resources shared by the Israelis and the Palestinians and the mandate of the joint water committee between the two parties. The second part reported on the findings of an assessment of the institutional framework of the Palestinian Ministry of Environment. A plan was put forward to strengthen that Ministry.

(d) *ACSAD: “Environmental aspects in the management of shared water resources, and means to protect them” (in Arabic)*

The paper gave an overview of the shared surface water and groundwater resources in the Arab region. The paper addressed the environmental impact of the development of shared water resources, especially the Turkish GAP project, which was expected to increase the salinity of the waters of the Euphrates and the Tigris. The environmental impacts of GAP would be tremendous. Water quality degradation and soil erosion in the Nile Basin were cited as another example. The paper also reviewed the environmental problems arising from excessive pumping of shared groundwater aquifers (salt water intrusion and exhaustion of the resource). Examples cited were from the Arabian Peninsula, the Syrian Arab Republic, and the Nile and Maghreb regions. The paper examined the principles of use of international shared water resources, the Convention on the Law of the Non-navigational Uses of International Watercourses, and the international norms for the use of shared groundwater resources. The paper concluded with a number of recommendations to protect water resources in the region and enhance their sustainability.

(e) *Inter-Islamic Network on Water Resources Development and Management paper: “Shared water management: an Islamic perspective”*

The paper presented the conditions necessary for the sustainable management of shared water resources from an Islamic perspective. Water management principles were reviewed with respect to water-sharing, pollution prevention, and cooperation. The paper stated that, with the advances in water technology, the comparative advantage of an upstream riparian State in a river basin was likely to be marginal. The paper recommended the adoption of a regional vision for shared waters in the region. The vision would be based on a new social contract based on Islamic principles.

(f) *Arab Organization for Agricultural Development: “The challenges facing Arab shared water resources”*

The paper began with an outline of shared surface water and groundwater resources in the Arab region. It reviewed the environmental impact of the utilization of shared water resources, mainly with regard to water salinity. The legal norms in the utilization of shared water resources were highlighted, with emphasis on the United Nations Convention on the Law of Non-navigational Uses of International Watercourses. The paper stated that international law had not sufficiently covered the issue of shared aquifers, and concluded with a number of recommendations.

(g) *Kuwait Institute for Scientific Research: “Trans-border environmental side effects of the civil works in upstream countries of the Tigris-Euphrates basin on the northern Gulf marine environment”*

The paper reviewed the impact of the recent construction work along the Euphrates, Tigris and Karun rivers and stated that it had resulted in drastic changes in the amount and quantity of freshwater being discharged into the northern Gulf, resulting in a significant change in its physical, chemical and biological characteristics. Such changes were affecting the marine life and environment in the northern Gulf region.

(h) *Cairo University: “The Cairo University training course on shared water resources”*

The paper provided an overview of a recently established diploma programme at Cairo University that offered training in the management of shared water resources. The programme, which had commenced in 1998 in collaboration with Egypt’s Ministry of Water Resources and Irrigation, was focused on river basins.

III. EVALUATION OF THE MEETING

21. At the end of the Meeting, the participants were requested to evaluate the relevance of the Meeting by completing the evaluation questionnaires prepared by the organizers. The results of the evaluation indicated the following:

(a) Of the five themes of the Meeting, the theme on the legal aspects of shared surface water resources was most interesting (according to 93 per cent of the respondents) while the theme of the legal aspects of shared groundwater resources was least interesting (according to 60 per cent of the respondents). The results showed that the question of shared aquifers was not the main issue in the minds of the professionals in the region. However, it was also possible that the above result might have been biased by the large number of participants from Egypt, where surface water was the main issue;

(b) According to 80 per cent of the participants, the Meeting addressed a topic that was relevant to their work. The Meeting was a water priority issue for the participating countries/organizations, according to 87 per cent of the respondents;

(c) The quality of the documents, and the presentations and discussions, was rated as very good to excellent by 67 and 86 per cent of the respondents respectively.

Some analytical remarks extracted from the questionnaire are presented in annex IV to this report.

IV. RECOMMENDATIONS

22. The participants in the Meeting made the following recommendations and comments:

(a) The Meeting called upon the riparian countries in the ESCWA and CEDARE regions to take the following measures:

- (i) Carefully assess the existing situation with respect to shared surface and groundwater resources to achieve sustainable development;
- (ii) Initiate consultations and cooperative measures to achieve equitable arrangements for the sustainable utilization, protection and management of shared water resources;
- (iii) Undertake the necessary measures to strengthen regional cooperation between ESCWA and CEDARE member countries with respect to shared water resources, including the necessary reform and harmonization of national legislation and the institutional aspects of the issue;
- (iv) Respect the rights of downstream countries in shared waters by adhering to internationally accepted legal norms with the intention of reaching equitable agreements;
- (v) Seek joint management of shared groundwater resources, including the establishment of the necessary joint committees and coordination of regulatory policies;
- (vi) Incorporate provisions for water quality together with water quantity in legal instruments;
- (vii) Adopt harmonized methodologies for the preparation of environmental impact assessments of shared water resources, develop appropriate baseline data and data banks for this purpose and pay special attention to the development of efficient monitoring networks;
- (viii) Consider, in the environmental impact assessment of water-related projects, the impact of these projects on the terrestrial, river and marine environments;
- (ix) Make use of the Environmental Impact Assessment Decision Support System developed by CEDARE for predicting the national and regional impact of irrigation projects;

- (x) Benefit from the training course on the management of shared water resources developed by Cairo University. ESCWA and CEDARE member countries are also encouraged to develop national training capacities in this field;
 - (xi) Address potential disputes on shared water resources through peaceful means.
- (b) The Meeting supported the ESCWA initiative to develop a cooperation mechanism for shared aquifers, including the drafting of a general framework in this regard, in cooperation with CEDARE and other regional organizations.
- (c) The Meeting called upon ESCWA to continue its efforts in the field of shared water resources management, and to incorporate into the forthcoming planning cycle of the secretariat the implementation of the recommendations of the Meeting.
- (d) The Meeting urged both ESCWA and CEDARE, in view of the evolving nature of international law on shared groundwater resources, to develop acceptable guidelines and legal instruments for the utilization and management of shared aquifers and to participate actively in ongoing international efforts in this field.
- (e) The Meeting called upon ESCWA and CEDARE to coordinate with other United Nations organizations, the League of Arab States, and other concerned international and regional organizations in compiling data, and making use of their experiences in order to develop a regional framework for water cooperation.
- (f) The Meeting also called upon other regional and international organizations to make available to ESCWA and CEDARE their experience in the development of cooperation mechanisms, including legal, technical and institutional instruments for the management, conservation and protection of shared water resources.
- (g) The Meeting urged international and regional organizations, donors and funding agencies to include the water sector as a high priority, strategic component in bilateral, multilateral and regional financing cycles so as to enhance national capacity-building in the field of water resources management.
- (h) The Meeting acknowledged the work of the ESCWA/BGR technical advisory project, and the CEDARE Nubian Sandstone Aquifer System Programme on the establishment of information bases for shared aquifers, in facilitating regional cooperation.

Annex I

LIST OF PARTICIPANTS

A. ESCWA MEMBERS AND OTHER ARAB COUNTRIES

Egypt

His Excellency Mr. Mahmoud Abu Zeid
Minister of Water Resources and Irrigation
Cairo
Tel.: (202) 3123309
Fax: (202) 3108227

Mr. Fatma Abdel Rahman Attia
Head of the Groundwater Section
Ministry of Water Resources and Irrigation
Cairo
Tel.: (202) 4444360
Fax: (202) 444 8219
E-mail: f-attia@mail.link.com.eg

Mr. Abdelfattah Mohamed Metawie
Undersecretary, Minister's Technical Office
Ministry of Water Resources and Irrigation
Cornish El-Nile, Imbaba, Giza
Cairo
Tel.: (202) 3123710/3503408
Fax: (202) 3108227

Mr. Aref Abdel Mobdy Gharib
Ministry of Water Resources and Irrigation, Cairo
Tel.: (202) 3123309
Fax: (202) 3108227

Mr. Bayoumi B. Attia
First Undersecretary & Head of Planning Sector
Ministry of Water Resources and Irrigation
Cornish El-Nile, Imbaba, Giza
Cairo
Tel.: (202) 3130185/3129257
Fax: (202) 3130185
E-mail: bamfaopr@link.com.eg

Mr. Essam Menoufy Mohamed
Vice-Chairman, Nile Water Section
Ministry of Water Resources and Irrigation
13 Murad Street, Giza
Cairo
Tel.: (202) 5722767
Fax: (202) 5723147

Mr. Hussein Ihssan Elatfy
Undersecretary
Ministry of Water Resources and Irrigation
Cornish El-Nile, Imbaba, Giza
Cairo
Tel.: (202) 3122967/3123751
Fax: (202) 3109591

Mr. Shams El-Din Karara
Civil Engineer/PJTC, Nile Water Section
Ministry of Water Resources and Irrigation
13 Murad St., Giza
Cairo
Tel.: (202) 5720218
Fax: (202) 5723147

Mr. Ahmed Bahaa El-Din
Engineer – Nile Water Section
Ministry of Water Resources and Irrigation
13 Murad St., Giza, Cairo
Tel.: (202) 5720218
Fax: (202) 5723147
E-mail: nwater@idscl.gov.eg

Mr. Ouf A. Ouf Salama
Engineer, Nile Water Section
Ministry of Water Resources and Irrigation
13 Murad Street, Giza, Cairo
Tel.: (202) 5720218
Fax: (202) 5723147
E-mail: nwater@idscl.gov.eg

Mr. Ahmed Mohamed Fahmy Abdalla
Engineer, Chairman of Nile Water Section
Ministry of Water Resources and Irrigation
13 Murad Street, Giza, Cairo
Tel.: (202) 5720218
Fax: (202) 5723147
E-mail: nwater@idscl.gov.eg

Iraq

Mr. Moaid Jawad Abdul Ghani
Director-General, Planning and Follow-up Office
Ministry of Irrigation, Baghdad
Tel.: (964-1) 7720240
Fax: (964-1) 7740672 or c/o UNDP Baghdad
Fax: 8731506423

Mr. Mubarak Jumah Mohamed Al-Dhabary
Manager, Legal Department
Ministry of Water Resources
P.O. Box: 2575 Code No. 112, Muscat
Tel.: (968) 788845
Fax: (968) 797385

Jordan

Ms. Rabab Faleh Al-Tal
Head of Contracts and Legislation Department
Ministry of Water and Irrigation, Amman
Tel.: (962-6) 5680100
Fax: (962-6) 5680075
E-mail: Rabab_Tal@MWI.gov.jo

Palestine

Ms. Karen Assaf
Advisor, Palestinian Water Authority
P.O. Box: 2174, Ramallah
Tel.: (972-2) 295-9022
Fax: (972-2) 298-1341
E-mail: kassaf@planet.edu or
kassaf@pwa-pna.org

Kuwait

Mr. Faisal Al-Mutawa
Deputy to Asst. Undersec. for GW Affairs
Ministry of Electricity and Water
P.O. Box: 5395 – Safat, Kuwait
Tel.: (965) 5371240
Fax: (965) 5371251

Sudan

Mr. Idris Mohamed Idris
Director, Groundwater and Wadis Directorate
Ministry of Irrigation and Water Resources
P.O. Box: 878, Khartoum
Tel.: (249-11) 225740; Home: 382358
Fax: (249-11) 773838
E-mail: gww-infocent@sudanmail.net

Lebanon

Mr. Hassan Hachem
Director-General of Exploitation
Ministry of Hydraulic and Electric Resources
Corniche El-Nahr, Beirut
Tel.: (961-1) 565001/ 2
Fax: (961-1) 565555
E-mail: ministry@hydro-electric.gov.lb

Mr. El-Rayah Moh'd Hamed
Director of Nile Water's Directorate
Ministry of Irrigation and Water Resources
P.O. Box: 378, Khartoum
Tel.: (294-11) 777151
Fax: (294-11) 773838

Oman

Mr. Khalid Hilal Saud Al-Busaidi
Acting General Manager of Regional Affairs
Ministry of Water Resources
P.O. Box: 2575/Code No. 112, Muscat
Tel.: (968) 788850
Fax: (968) 797385

Yemen

Mr. Mohammed Ali Sewar
Prime Minister's Office
Al-Hasba, Omran Road
P.O. Box: 8944, Sana'a
Tel.: (967-1) 282671

B. REGIONAL ORGANIZATIONS AND FUNDING AGENCIES

Arab Center for the Studies of Arid Zones and Dry Lands

Mr. Abdallah Droubi
Head of Water Quality Section
P.O. Box: 2440, Damascus
Syrian Arab Republic
Tel.: (963-11) 5743039
Fax: (963-11) 5743063
E-mail: acsad@net.sy

Arab Planning Institute

Mr. Essa Al-Ghazali
Director General/ API
P.O. Box: 5834 Safat, 13059 Kuwait
Tel.: (965) 484-71648
Fax: (965) 4842935
E-mail: api@api.org.kuw

Arab Organization for Agricultural Development

Mr. Ashraf Rabie
Specialist in AOAD Cairo Office
11, Al-Islah Al-Zeraii St., Cairo, Egypt
Tel.: (202) 3365795/8
Fax: (202) 3365799

League of Arab States (LAS)

Ms. Nadra M. Dhia Kebba
Manager, General Department for Economic
Affairs
Tahrir Square, Cairo, Egypt
Tel.: (202) 5750511
Fax: (202) 5740331

Inter-Islamic Network on Water Resources
Development and Management

Mr. Murad Jabay Bino
Executive Director
P.O. Box: 1460, Jubieha PC 11941, Jordan
Tel.: (962-6) 5332993
Fax: (962-6) 5332969
E-mail: inwrdam@nic.net.jo

The Saudi Fund for Development

Mr. Sufyan Al-Hassan
General Director/Legal Department
The Saudi Fund for Development
P.O. Box: 50483, Riyadh 11523
Saudi Arabia
Tel.: (966-1) 4640292
Fax: (966-1) 4647450

Islamic Development Bank

Mr. Karim Allaoui
Technical Assistant to the Vice-President of
Operations
P.O. Box: 5925, Jeddah 21432, Saudi Arabia
Tel.: (966-2) 6466729
Fax: (966-2) 6374131
E-mail: kallaoui@isdb.org.sa

Mr. Abdullah Mohammad Al-Shoaibi
Project Officer
P.O. Box: 56283, Riyadh 11554
Saudi Arabia
Tel.: (966-1) 4640292
Fax: (966-1) 4647450

Mr. Abdelmoneim Mohamed Tom
Legal Advisor
P.O. Box: 5925, Jeddah
Saudi Arabia
Tel.: (966-2) 6361400 (Ext.: 7102)
Fax: (966-2) 6366071
E-mail: atom@isdb.org.sa

C. REGIONAL COMMISSIONS, SPECIALIZED AGENCIES AND OTHER ORGANIZATIONS
IN THE UNITED NATIONS SYSTEM

Economic Commission for Europe

Mr. Branko Bosnjakovic
Regional Advisor on Environment
UNECE, Palais des Nations
CH-1211 Geneva, Switzerland
Tel.: (41-22) 917-6932
Fax: (41-22) 917-7010
E-mail: Branko.bosnjakovic@UNECE.ORG

Economic Commission for Africa

Mr. Stephen Maxwell Donkor
Regional Advisor, Water Resources
UNECA
P.O. Box 3005
Addis Ababa, Ethiopia
Tel.: (251-1) 443422
Fax: (251-1) 514416
E-mail :

United Nations University/International Network
on Water, Environment and Health

Mr. Walid Saleh
Regional Coordinator - MENA (Middle East and
North Africa) Region
P.O. Box: 560
Postal Code: 11941 Amman, Jordan
Tel.: (962-6) 5330334
Fax: (962-6) 5330309
E-mail: wsaleh.unu-inweh@nchrd.gov.jo

United Nations Educational, Scientific and
Cultural Organization

Mr. Bo G. Appelgren
Water Policy Consultant
UNESCO-IAH-FAO-ECE TARM WG
(Transboundary Aquifer Resources
Management Working Group)
Via Colesanti 13, Bolsena, I-10230, Italy
Telefax: (39-0761) 797112
E-mail: bo.appelinvpl@flashnet.it

D. GOVERNMENTAL AND NON-GOVERNMENTAL ORGANIZATIONS

Kuwait Institute for Scientific Research

Ms. Faiza Al-Yamani
Research Scientist/KISR
P.O. Box: 1638
Salmiyah 22017, Kuwait
Tel.: (965) 5711295
Fax: (965) 5711293

World Water Council

His Excellency Mr. Mahmoud Abu Zeid
President
World Water Council (WWC)
Marseille, France
E-mail: fyamani@kisir.edu.kw

E. OTHER ORGANIZATIONS

Cairo University

Mr. Mostafa Ahmed Ghaith
Assistant Professor
Irrigation and Hydraulics Department
Cairo University
6 St, No. 155 Borg Elmohandseen - Maadi
Cairo, Egypt
Tel.: (202) 3584932
Fax: (202) 3584932
E-mail: Maghaith@Yahoo.com

Professor Salah El-Din Amer
Professor, Head of Public International Law
Department
Cairo University
6 Tahrir St., Dokki, Giza
Cairo, Egypt
Tel.: H: (202) 3480304/3383594
O: (202) 7497508/7603329
Fax: (202) 3366025

F. CONSULTANTS AND RESOURCE PERSONS

Mr. Walid Abdrrahman
Professor, Manager, Water Section
King Fahd University of Petroleum and Minerals
P.O. Box: 493
Dhahran 31261, Saudi Arabia
Tel.: (966-3) 8603895
Fax: (966-3) 8604518
E-mail: awalid@kfupm.edu.sa

Mr. Peter Kessler
Undersecretary
Environment Ministry
Mainzer Strasse 80
D-65189 Wiesbaden, Germany
Tel.: (49-611) 815-1300
Fax: (49 -611) 815-1941

Mr. Tarek Mohamad Majzoub
ESCWA consultant
Professor, Beirut Arab University
IstiqlalSt., Rana Bldg. (7th Floor)
P.O. Box: 11-5020
Beirut, Lebanon
Tel.: (961-1) 376116
Fax: (961-1) 798961/818402
E-mail: wmec@hotmail.com

Mr. Mohamad Khawlie
Director, National Center for Remote Sensing
National Council for Scientific Research
P.O. Box: 11-8281, Sports City, Beirut, Lebanon
Tel.: (961-4) 409845/6
Fax: (961-4) 409847
E-mail: mkhawlie@cnrs.edu.lb

Mr. Abdulkarim Al-Fusail
Water Expert
National Water Resources Authority
Sana'a
Tel.: (967-1) 231530
Fax: (967-1) 231530

Mr. Bernard J. Wohlwend
Legal Consultant, BGR
Rue du Jura, Signy
1274 Signy, Switzerland
Tel.: (41-22) 3622218
Fax: (41-22) 3622218
E-mail: bjwconsult@worldcom.ch

G. ORGANIZERS OF THE MEETING

1. ESCWA secretariat

Chief, Natural Resources Section
Energy, Natural Resources and Environment
Division
E-mail: mabdulrazzak@hotmail.com

Regional Advisor on Water
Programme Planning and Technical Cooperation
Division

First Economic Affairs Officer
Natural Resources Section
Energy, Natural Resources and Environment
Division
E-mail: maleryani@hotmail.com
Regional Advisor on Environment

Programme Planning & Technical Cooperation
Division
E-mail: khordagui@escwa.org.lb

Mr. Wolfgang Mueller
Technical Advisor
ESCWA/BGR
Natural Resources Section
Energy, Natural Resources and Environment
Division

ESCWA mailing address: UN-ESCWA
Riad El-Solh Square
P.O. Box: 11-8575, Beirut, Lebanon
Tel.: (961-1) 981301/981311
Fax: (961-1) 981510/981512

2. CEDARE secretariat

Mr. Kamal Sabet
Executive Director
CEDARE

Mr. Ahmad Wagdy
Freshwater Specialist
Land and Water Management Programme
E-mail: awagdy@cedare.org.eg

Mr. Omar El-Badrawy
Engineer
GIS Specialist

CEDARE mailing address:
2 El-Hegaz Street, Cedare Bldg., Heliopolis
P.O. Box: 1057, Heliopolis Bahary, Cairo, Egypt
Tel.: (202) 4513921/2/3/4, Fax: (202) 4513918
E-mail: cedare@ritsecl.org.eg
web site: <http://www.cedare.org.eg>

Annex II

PROGRAMME OF WORK

Thursday, 8 June 2000

- 8.30 - 10.30 a.m. Registration: Pyramisa Hotel, Sharm El-Sheikh
- 10.30 - 11.30 a.m. Opening session (agenda item 1)
Opening speeches
- Mr. Kamal Sabet, Executive Director, CEDARE
 - Mr. Mohamed Abdulrazzak, Chief, Natural Resources Section, ESCWA
 - Mr. Wolfgang Mueller, Technical Advisor, BGR
 - Mr. Walid Abderrahman, UNEP/ ROWA
 - His Excellency Mr. Mahmoud Abu Zeid, Minister of Water Resources and Irrigation of Egypt and Chairman of the World Water Council
 - Discussion of the agenda of the Meeting (by Mr. Ahmad Wagdy, CEDARE)
 - Adoption of the agenda of the Meeting
- 11.30 a.m. - Noon Break
- Theme I. Legal framework for the development and management of shared surface water resources**
- Chairperson: Mr. Murad Bino, INWRDAM
Co-chairperson: Mr. Ahmed Wagdy, CEDARE
Rapporteur: Mr. Mohamed Abdulrazzak, ESCWA
- Session 1**
- Noon - 12.30 p.m. Reflections from the Second Water Forum (agenda item 5 D) (His Excellency Mr. Mahmoud Abu Zeid, Minister of Water Resources and Irrigation of Egypt and Chairman of the World Water Council)
- 12.30 - 1 p.m. ESCWA activities on the issues of shared surface and groundwater sources (agenda item 5 A [i.]) (A representative of the ESCWA secretariat)
- 1 - 2.30 p.m. Break
- Session 2**
- 2.30 - 3 p.m. *āĀĀĀĀ Āā ĀāĀĀĀĀ ĀāĀāĀĀ āŪ ĀāĀ ĀāĀĀĀĀ:* (Memorandum on international cooperation with the States of the Nile basin) (agenda item 5 B [vii]) (Mr. Ahmed Fahmy, Head of the Nile Water Authority, Egypt)
- 3 - 3.30 p.m. The Convention on the Protection and Use of Transboundary Watercourses and International Lakes, as an instrument for protecting and managing shared water resources in the ECE region (agenda item 8 [a]) (Mr. Branko Bosnjakovic, ECE)
- 3.30 - 4 p.m. Discussion
- 4 - 4.30 p.m. Break
- Session 3**
- 4.30 - 5 p.m. UNESCO-IAH-FAO-ECE Working Group on Transboundary Aquifer Resources Management Program Initiative (agenda item 8 [b]) (Mr. B. Appelgren, UNESCO)

Thursday, 8 June 2000 (continued)

5 - 5.30 p.m. Egyptian country paper : Units and measures of water requirements for the benefit of all different flora and fauna in the Nile Basin (agenda item 6 [a]) Mr. Abdelfattah M. Metawie, Advisor, Ministry of Water Resources and Irrigation

5.30 - 5.45 p.m. Discussion

Friday, 9 June 2000

Theme I (continued) Legal framework for the development and management of shared surface water resources

Chairperson: Mr. Salah El-Din Amer, CEDARE

Co-chariperson: Mr. Walid Saleh, UNU/INWEH

Rapporteur: Mr. Mohamed Al-Eryani, ESCWA

Session 4

8.30 - 9 a.m. Legal principles and international norms governing the management of shared surface water resources: international and regional perspectives (agenda item 5A [ii]) (Mr. Tareq Majzoub, ESCWA consultant)

9 - 9.30 a.m. Issues and requirements for enhanced cooperation over the utilization and management of shared water resources in the ESCWA region (agenda item 5A [vi]) (A representative of the ESCWA secretariat)

9.30 - 10 a.m. Iraqi country paper *ÇáÇäÚBÇÓÇÊ ÇáÓáÈíÉ ááãÔÇÑíÚ ÇáÈÑßíÉ áÇÓÈËÇÑ íæÖí ÌáÉ æÇáÝÑÇÈ Úáì ÇáÚÑÇÐ* (Adverse impact on Iraq of the Turkish projects to exploit the Euphrates and Tigris basins) (agenda item 6 B) (Mr. Moaid A. Ghani/ Director General for Planning and Follow-up Office, Ministry of Irrigation, Iraq)

10 - 10.15 a.m. Discussion

10.15 - 10.45 a.m. Break

Session 5

10.45 - 11.15 a.m. Jordanian country paper *ÇáãæÇÑí ÇáãÇÆíÉ Ýí ÇáÃÑíä* (Water resources in Jordan and their management) (agenda item 6 C) (Ms. Rabab Al-Tal, Head of Contracts and Legislation Department., Ministry of Water and Irrigation, Jordan)

11.15 - 11.45 a.m. Palestinian paper: The need to legally define Palestinian water rights (agenda item 6 D)(Ms. Karen Assaf, Advisor, Palestinian Water Authority)

11.45 a.m. - 12.45 p.m. Discussion

12.45 - 2.30 p.m. Break

Theme II. Legal framework for the development and management of shared groundwater resources

Chairperson: Ms. Fatma Attia, First Undersecretary, Ministry of Water Resources and Irrigation, Egypt

Co-chairperson: Mr. Omar Joudeh, ESCWA

Rapporteur: Mr. Walid Abderrahman, UNEP

Session 6

2.30 - 3 p.m. Legal framework for the management of shared groundwater resources: international and regional perspectives (agenda item 5 A [iii]) (A representative

of the ESCWA secretariat)

Friday, 9 June 2000 (*continued*)

- 3 - 3.30 p.m. Towards a legal framework for shared groundwater resources in the Arab region (agenda item 5 B [i]) (Ms. Fatma Attia, Head of Groundwater Sector, Ministry of Water Resources and Irrigation, Egypt)
- 3.30 - 4 p.m. Break
- Session 7**
- 4 - 4.30 p.m. Shared groundwater resources in the ESCWA region: the need, potential benefits and requirements for enhanced cooperation (agenda item 5 A [iv]) (A representative of the ESCWA secretariat)
- 4.30 - 5 p.m. Integrated water resources management: national and international legal and institutional requirements: a new vision (agenda item 5 C [ii]) (Mr. Bernard Wohlwend, BGR)
- 5 - 5.30 p.m. Discussion

Saturday, 10 June 2000

Theme III. Environmental aspects in the management of shared water resources

Chairperson: Mr. Hosny Khordagui, ESCWA

Co-chairperson: Mr. Peter Kessler, BGR

Rapporteur: Mr. Ahmed Wagdy, CEDARE

Session 8

- 8.30 - 9 a.m. The Rhine River success story: rehabilitating an international river (agenda item 5 C [i]) (Mr. Peter Kessler, BGR)
- 9 - 9.30 a.m. Environmental impact assessment for irrigation projects (agenda item 5 B [iii]) (Mr. Ahmad Wagdy, CEDARE)
- 9.30 - 10.15 a.m. Panel discussion on environmental aspects for shared water resources management: Mr. Hosny Khordagui/ESCWA; Mr. Branko Bosnjakovic/ECE; Mr. Ahmad Wagdy/CEDARE; Mr. Peter Kessler/BGR; Mr. Mohamed Abdulrazzak/ESCWA
- 10.15 - 10.45 a.m. Break
- Session 9**
- 10.45 - 11.15 a.m. Panel discussion (*continued*)
- 11.15 - 11.45 a.m. Strengthening management capacity for sharing scarce water resources (agenda item 5 B [iv]) (Mr. Walid Saleh, UNU/INWEH).
- 11.45 a.m. - 12.15 p.m. ÇáàÇàÈ ÇáÈiÆiÉ Ýi ÁiÇÑÉ ÇáãæÇÑi ÇãÇÆiÉ ÇãÔÈÑBÉ æÓÈá íaÇiÊâÇ. İ/ÚÈİ Çáã ÇáİÑæÈi - ÆBÓÇİ (Environmental concerns in the management of shared water resources and the means of protecting them) (agenda item 7 [a])
- 12.15 - 12.45 p.m. Trans-border environmental side effects of the civil works in upstream countries of the Tigris-Euphrates basin on the northern Gulf marine environment (agenda item 9 A) (Ms. Faiza Al-Yamani, KISR)
- 12.45 - 1 p.m. Discussion

1 - 2.30 p.m.

Break

Saturday, 10 June 2000 (continued)

Theme IV. Institutional and technical requirements for enhanced cooperation

Chairperson: Mr. Bernard Wohlwend, BGR

Co-chairperson: Mr. Ahmed Fahmy, CEDARE

Rapporteur: Mr. Mostafa Ghaith, Cairo University

Session 10

- 2.30 - 3 p.m. Institutional aspects for proper management of shared water resources (agenda item 5 B [v]) (Mr. Salah El-Din Amer, CEDARE)
- 3 - 3.30 p.m. Mechanisms of sustainability for environmental management of shared water resources: a case from Lebanon/Syrian Arab Republic (agenda item 5 C [iii]) (Mr. Mohamed Khawlie, BGR)
- 3.30 - 3.45 p.m. Discussion
- 3.45 - 4.15 p.m. Break

Session 11

- 4.15 - 4.45 p.m. Capacity-building for shared water resources management; Cairo University diploma (agenda item 9 B) (Mr. Mostafa Gaith, Cairo University on behalf of Mr. Ahmed Khashab, Cairo University)
- 4.45 - 5.15 p.m. Shared water management: an Islamic perspective (agenda item 7 B) (Mr. Murad Bino, INWRDAM)
- 5.15 - 5:45 p.m. Discussion

Sunday, 11 June 2000

Theme V. Conflict resolution

Chairperson: Mr. Bernard Wohlwend, BGR

Co-chairperson: Mr. Ahmed Fahmy, CEDARE

Rapporteur: Mr. Mostafa Ghaith, Cairo University

Session 12

- 8.30 - 9 a.m. Settlement of public international disputes on shared water resources in the Arab region (agenda item 5 B [ii]) (Mr. Salah El-Din Amer, Legal Advisor, Ministry of Water Resources and Irrigation, Egypt)
- 9 - 9.30 a.m. مفاوضات المياه في المنطقة العربية (Water issues in the Arab region) (agenda item 5 E) (Ms. Nadra Kebba, League of Arab States)
- 9.30 - 10.30 a.m. Discussion
- 10.30 - 11 a.m. Break

Session 13

Chairperson: Mr. Mohamed Abdulrazzak, Chief, Natural Resources Section, ESCWA

Co-chairperson: Mr. Ahmad Wagdy, CEDARE

Rapporteur: Mr. Mohamed Al-Eryani, ESCWA

- 11 a.m. - 12.45 p.m. Conclusion and recommendations
- 12.45 - 2.15 p.m. Break
- 2.15 - 2.45 p.m. Closing session

Symbol	Title
E/ESCWA/ENR/2000/WG.1/14	Strengthening management capacity for sharing scarce water resources: Palestinian Ministry of Environmental Affairs
E/ESCWA/ENR/2000/WG.1/15	Instruments for protecting and managing shared water resources in the UN ECE region
E/ESCWA/ENR/2000/WG.1/16	Transboundary aquifer resources management programme: summary note
E/ESCWA/ENR/2000/WG.1/17	ÇáàæÇáÈ ÇáÈìÆíÉ Ýí ÁÏÇÑÉ ÇáãæÇÑÌ ÇáãÇÆíÉ ÇáãÔËÑßÉ æÓÈá ÌãÇíÊâÇ (Environmental concerns in the management of shared water resources, and means to protect them)
E/ESCWA/ENR/2000/WG.1/CP.1	ÇáÇáÚßÇÓÇÊ ÇáÓáÈíÉ áããÔÇÑíÚ ÇáÊÑßíÉ áÇÓÈÈãÇÑ ãíÇá ÌæÖí ÌáÉ æÇáÝÑÇÊ Úái ÇáÚÑÇÐ (ÌããæÑíÉ ÇáÚÑÇÐ) (Adverse impact on Iraq of the Turkish projects to exploit the Euphrates and Tigris basins)
E/ESCWA/ENR/2000/WG.1/CP.2	ÇáãæÇÑÌ ÇáãÇÆíÉ Ýí ÇáÃÑã æÁÏÇÑÊâÇ (ÇáããáßÉ ÇáÃÑãíÉ ÇáãÇÓãíÉ) (Water resources in Jordan and their management)
E/ESCWA/ENR/2000/WG.1/CP.3	The Palestinian situation: the need to legally define Palestinian water rights
Background paper	Selected reference material on legal aspects of shared water
No symbol	Capacity-building for shared water resources: Cairo University diploma
No symbol	Settlement of public international disputes on shared water resources
No symbol	Institutional aspects for proper management of shared water resources
No symbol	ÞÖÇìÇ ÇáãíÇá Ýí ÇáããØÞÉ ÇáÚÑÈíÉ (Water issues in the Arab region)
No symbol	Reflections from the Second World Water Forum
No symbol	Units and measures of water requirements for the benefit of all different fauna and flora in the Nile Basin (Egyptian country paper)

Annex IV

MEETING EVALUATION

I.	QUESTION 1	MOST INTERESTING	LEAST INTERESTING		
	<i>Which themes of the meeting were most or least interesting to you?</i>				
	·1 Legal framework for the development and management of shared surface water resources	93%	6%		
	·2 Legal framework for the development and management of shared groundwater resources	60%	20%		
	·3 Environmental aspects in the management of shared water resources	80%	13%		
	·4 Institutional and technical requirements for enhance cooperation	87%	--		
	·5 Conflict resolution	80%	6%		

II.	QUESTIONS 2, 3 and 14	YES	SOMEWHAT	NO	
	<i>Were the topics of the meeting relevant to your work ?</i>	80%	20%		
	<i>Does the subject of the meeting represent a water priority issue for your country/ organization ?</i>	87%	20%		
	<i>Did the meeting provide an opportunity to interact and exchange experiences with others ?</i>	60%	13%		

III.	QUESTIONS 5, 6 and 15	EXCELLENT	VERY GOOD	FAIR	POOR
	<i>How do you rate the quality of documents?</i>	20%	47%	27%	
	<i>How do you rate the quality of presentations and discussions ?</i>	13%	73%	13%	
	<i>How do you rate the preparation and arrangements for the meeting?</i>	40%	53%	6%	

IV.	QUESTION 7	INFORMATION	POLICY ORIENTED	BOTH	
	<i>How do you evaluate the nature of the meeting ?</i>	40%	13%	47%	

V.	QUESTION 8				
	<i>How much did you benefit from the meeting?</i>	SUBSTANTIALY	SUFFICIENTLY	INSUFFICIENTLY	
	·6 Understanding of problems and uses presented	40%	53%		
	·7 Increasing familiarity with the meeting topics	20%	47%	13%	
	·8 Introduction to new concepts and methods	13%	53%	13%	
	·9 Possible application of tools and techniques	13%	47%	66%	

VI.	QUESTIONS 9 and 10	Very much	Somewhat	None	
	<i>Has the meeting been up to your expectations ?</i>	60%	40%		
	<i>To what extent do you expect to utilize what you had acquired from the meeting ?</i>	53%	47%		

VII.	QUESTIONS # 11, 12 and 13	ADEQUATE	TOO LONG	TOO SHORT	
	<i>How do you rate the duration of presentations ?</i>	80%		13%	
	<i>How do you rate the duration of discussions?</i>	73%	6%	13%	
	<i>How do you rate the length of the meeting with regard to its work programme?</i>	73%	13%	13%	

VIII.	QUESTION # 4	ALL	Shared SW	Shared GW	Other
	<i>Which of the sessions are useful to your work?</i>	80%	80%	66%	Islamic Law

IX.	QUESTION # 16				
	<i>Any other remarks (please see table below)</i>				

EFFEICIENCY OF PAPERS	REMARKS ON THE RECOMMENDATIONS	FURTHER SUGGESTIONS	ORGANIZATIONAL MATTERS	OVERALL
A number of the presented papers were hardly related to the main theme of the meeting.	The recommendations of this meeting should have been the outcome of a more genuine consultative process. ^{1/}	A suggested topic for a future meeting would be the aspects of financing shared water projects. Financing institutions may be asked to present their experiences and the problems they encounter in this regard.	Invitation letters should reach the participants on time. ^{3/}	Successful meeting
It would have been of greater use had one or more papers been presented on the financing of shared water projects.		Presentations by specialists from member States could provide professional inputs.	Choice of the location was not good.	
Country papers were less relevant to the topic of the meeting.		Electronic conferences are less costly and could cover a wider participation. ^{2/}	Hotel was expensive.	
			Country paper should be paid for. ^{4/}	
			Evaluation form not well designed. ^{5/}	

ESCWA remarks on the above:

^{1/} Participants were asked to write their recommendations and submit them to a recommendations committee, which was formed by the floor. The Committee returned to the floor with draft recommendations, which were further refined and adopted at the concluding session.

^{2/} The ESCWA secretariat is currently looking into this matter. Serious consideration is being given to the holding of a trial meeting using this method.

^{3/} Invitation letters are extended to member States at least three months prior to meetings. Replies are typically received one-two weeks before the meeting. This occurs despite the deadlines for nominations and papers stipulated in the information notes.

^{4/} Although the Meeting is for experts, and the ESCWA secretariat sponsors the Government-designated experts, the secretariat cannot defray additional costs for papers.

^{5/} The evaluation form follows the format of United Nations forms.