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DEVELOPMENT AND INTERNATIONAL ECONOMIC CO-OPERATION

Regional reviews of activities pertaining to the International
Drinking Water Supply and Sanitation Decade

Report of the Secretary-General

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I. INTRODUCTION

1. This report is presented to the General Assembly on the occasion of the launching of the International Drinking Water Supply and Sanitation Decade pursuant to paragraph 6 of Economic and Social Council resolution 1979/31 of 9 May 1979, in which the Council recommended that regional commissions should support countries in their activities and present regional reviews of preparatory activities for the Decade.
2. The report contains reviews from the five regional commissions of the United Nations including the Economic Commission for Africa, (ECA), the Economic Commission for Europe (ECE), the Economic Commission for Latin America (ECLA), the Economic and Social Commission for Asia and the Pacific (ESCAP) and the Economic Commission for Western Asia (ECWA) which have been based on national reports received in response to the Secretary-General's note verbale of 2 November 1979, as well as on other material available to the Commissions. They attempt to give a picture of the situation in their respective regions, with respect to drinking water supply and sanitation.
3. Each of these summaries provides a broad review of the region's present status in the field of drinking water supply and sanitation and of national plans and programmes for the Decade. They also provide a general review of financial and manpower requirements, of the needs for the mobilization of internal and external resources, and of the constraints that stand in the way of progress.
4. In the case of ECA, it should be noted that the Commission convened an intergovernmental meeting from 4 to 8 August 1980 in preparation for the launching of the Decade, in order to review the needs and activities in the region in this area of endeavour. It is envisaged, therefore, that additional information on the outcome of this meeting will be presented to the General Assembly. In the case of ECE, the situation of its member countries as regards drinking water supply and sanitation is for the most part very different from those of other regions. For this reason, and also in view of the differences in working methods of this Commission as compared to the others, the review of developments in the ECE region does not conform to the approach taken elsewhere.
5. The national reports obtained from Governments vary greatly in their scope and degree of coverage, and thus the regional summaries can only give a broad picture of the present status in the field of drinking water supply and sanitation in the various regions and of the activities envisaged within the context of the Decade. They do provide, however, a general appraisal of the types of problems to be faced during the Decade, as well as indications - which need in many cases to be supplemented - against which to measure the success of the regional commissions and indeed the United Nations system as a whole in generating significant progress during the next 10 years.

II. ECONOMIC COMMISSION FOR AFRICA

A. Present status of service in the sector

6. The present level of service in water supply and sanitation in urban and rural areas in 26 countries of the ECA region is shown in annex I, table 1.

7. The estimated cumulative population of the 26 countries is 209.82 million. Of this, 59.77 million (28.5 per cent) is urban population and 150.05 million (71.5 per cent) is rural population. Out of the total urban population, 72.8 per cent is served with potable water, whereas for rural areas this service is available to only 24.2 per cent of the population.

8. The figures on the rural water supply situation show that out of 26 countries, 6 have water-supply facilities covering less than 10 per cent of the rural population; 14 countries cover 10 to 30 per cent, while Algeria, Egypt and Zambia have respectively 60, 64 and 95 per cent rural population coverage. The coverage in Mauritius is stated as high, and that for Chad and for Mauritania is stated to be low. Thus, the over-all picture shows that in most of the countries, the facilities for potable water supply in the rural sector are rather poor. The coverage in the urban sector of the population is relatively better.

9. In general, the situation in the field of sanitary services is not being given priority attention. From table 1, it may be observed that only nine countries have given indicative figures on present coverage in both the urban and rural sectors of their populations. In general, the coverage in urban and rural areas alike is very low except in Algeria, Egypt, Malawi, Mauritius, Swaziland, Tunisia and Zambia, which have over 64 per cent urban population coverage. Of the above, only Tunisia, Mauritius and Algeria have sanitary services covering 40 per cent or more of their rural populations.

10. It may be concluded that the current status of sanitary facilities is very poor. In fact, it appears that little serious consideration is being given to remedying this situation, and rural sanitation in particular is conspicuous by the very low service levels in most countries.

B. Establishment of goals for the Decade and development of national plans and programmes

11. The objective during the Decade (1981-1990) is to provide water for urban and rural areas by 1990 and to adopt and accelerate programmes for sanitary services and waste-water disposal. However, only a few countries of the region have adopted this target. A number of countries have set lower targets for water supply and sanitation in urban and rural areas. In some countries, there are no targets for the Decade. In general, it is observed that, in most countries having national development plans, these plans do not extend beyond 1982 or 1983. Thus, the major part of the Decade remains uncovered.

12. Whereas it is noted that many countries have reoriented their policy and have placed emphasis on providing water supplies for the urban poor and for rural populations, it appears that national plans and programmes for water supply and sanitation covering the whole Decade have not yet been formulated. In fact, the planning cycles which have continuing and proposed projects often end in 1982 or 1983. A number of countries have stated that plans and programmes are still to be drawn up and will be incorporated in the national development plans. These vary from country to country extending over periods of three to five years in most cases.

C. Requirements for improved performance in drinking water supply and sanitation during the Decade and related constraints

13. This section contains a brief analysis of the major requirements or constraints indicated in the country reports and in other available sources. (For requirements and constraints, see annex I, table 2.)

1. Engineering feasibility studies of projects

14. Various types of projects have been identified in the different countries of the region. Some have identified only project areas, while others have major specific projects. In some countries, a number of projects are planned for execution during the early part of the Decade. As national plans and programmes have still to be prepared in most countries, very few projects have been studied for engineering feasibility.

2. Manpower

15. One of the major constraints to accelerated development of the sector is shortage of manpower at all levels. Thus the manpower situation must be assessed in order to determine the present and future needs for additional staff at the professional, intermediate and skilled labour levels. These needs should be established in correspondence with the programmes for the Decade. It is therefore necessary for countries to arrange training programmes for the implementation of activities in the sector. Such action has already been taken by some countries and needs to be taken by all.

3. Mobilization of public opinion

16. Massive national campaigns to promote more rapid progress in implementing community programmes concerning water supply and sanitation are needed. To this end, reliance is placed on existing agencies and on the mass media to carry out health education programmes and relevant activities. That endeavour should develop into a national movement in which all sections of the community would have a role to play.

4. Institutional aspects

17. It is noted that in some countries of the region there are no planning mechanisms. In other countries, where this is not the case, a number of agencies

concerned exist and a consequent proliferation of authorities. In order to co-ordinate activities in the sector, some countries have established their national action committees, while in others these committees have yet to be established.

5. Mobilization of internal resources

18. To carry out the plans and programmes for the Decade, the community water supply Plan of Action ^{1/} calls for the establishment of national revolving funds for execution of water supply and sanitary programmes. Very few countries have much capacity to generate investment. In fact, some countries lean heavily on external finance for their water supply and sanitation programmes. Only about 50 per cent of the countries have given figures on external financial assistance. Of those countries that have indicated external financial needs, four countries have estimated that the contribution to be made by external financing would need to be over 70 per cent. (For the financial data, see annex I, table 3.)

19. Out of 26 countries, 10 have presented figures on their financial requirements for water supply and sanitation during the Decade. Of these 10 countries, 5 have given separate figures for water supply and sanitation for urban and rural areas, and the other five have provided figures on their over-all needs. Financial data provided by other countries do not cover the full period of the Decade.

20. Some countries have planned water-tariff policies which are intended to support schemes for operation and maintenance of water facilities.

6. Constraints

21. From a study of 26 national reports, it is noted that the countries have expressed a need for various types of inputs for their water supply and sanitation programmes. In their efforts for development, countries have faced the following constraints, of which some are common to the majority of the countries, while others are particular to relatively few:

(a) Common constraints:

- (i) Shortage of professional and subprofessional staff;
- (ii) Lack of training facilities;
- (iii) Lack of funds;
- (iv) Problems of educating the people;
- (v) Lack of co-ordination among responsible agencies;
- (vi) Institutional problems;

^{1/} Report of the United Nations Water Conference, Mar del Plata, 14-24 March 1977 (United Nations publication, Sales No. E.77.II.A.12), resolution II.

(b) Other constraints:

- (i) Absence of firm plans, policies and targets;
- (ii) Delay in securing foreign exchange and problems of raising local funds;
- (iii) Shortage of construction materials, machinery and chemicals;
- (iv) Poor maintenance of existing systems and quality control norms;
- (v) Shortage of natural resources and lack of data on these resources;
- (vi) Poor utilization of indigenous material and technology;
- (vii) Poor infrastructure facilities;
- (viii) Dispersed community population;
- (ix) Lack of socio-economic data;
- (x) Topographical difficulties.

D. Conclusions

22. It is noted that water supply in urban and in what have been termed rural problem areas has some priority over sanitation. At the same time, it may be noted that sanitation facilities are deficient in the majority of urban areas and practically non-existent in rural areas. Urban sanitation is given a low priority and allocations for rural sanitation are very small indeed.

23. Few countries have adopted targets for the present plan periods; those which have been adopted vary in coverage from country to country. Where indicated, targets for urban sanitation are very low and almost non-existent for the rural sector. Targets for the Decade have not been defined in the majority of countries.

24. A review of the available reports shows that awareness is widespread in the countries of the ECA region of a need to provide reasonable access to water and to make provision for facilities of excreta and waste water disposal for their urban populations. Many countries have now adopted a policy of assigning high priority to the improvement of rural water supply services; sanitation facilities are given a lower priority.

25. In order to promote greater achievement in the water supply and sanitation sector, it is necessary for nations to establish targets covering the whole period of the Decade, including national plans, programmes and projects for engineering feasibility studies; to make a systematic assessment of their manpower requirements at all levels and establish training programmes to fulfil their needs; to mobilize community participation and involve the public in the planning of projects; and finally to allocate resources necessary for the attainment of Decade goals.

III. ECONOMIC COMMISSION FOR EUROPE

26. The Economic Commission for Europe, through its Committee on Water Problems, has a long-standing experience in the field of water management.
27. Water management and development in the ECE countries has passed through several stages. In many countries, an abundant supply of good quality has now become a limited resource in relation to present and future needs. The studies undertaken under the auspices of the Committee on Water Problems have shown that, although the over-all quantity of water available is sufficient until the year 2000, it is often not adequate in the place where it is needed or at the time of greatest demand. As a consequence, long-term water management plans and strategies for the integrated development of river basins are becoming a major tool for decision making.
28. Water demand is likely to increase as a result of improved amenities and greater comfort in dwellings. This expected increase in consumption could be partly met by reducing quantitative losses in distribution networks, losses which have been estimated at up to 25 per cent of the total water supply in big cities. A recent study on long-term perspectives for water use and supply, conducted under the auspices of the Committee on Water Problems, indicated that the water abstraction to meet the needs of the population in 15 ECE countries will amount to about 120 km³ in 1990 as compared to 75 km³ in 1975, which corresponds to an increase of 60 per cent.
29. The majority of industrialized countries aim to provide a central system of water supply for 80 to 95 per cent of the population by 1990/2000. A total demand of 400 to 500 litres per person per day has been estimated in urban areas. Available data indicate that the average abstraction per inhabitant during the past decade varied widely from country to country, the extreme values being 71 and 553 litres per day respectively (figures for 1975).
30. Ground water is of considerable importance as a source of drinking water supply for the population. It has been used for centuries and enjoys special protection in almost all countries. Several countries carry out intensive exploratory work in order to discover unused aquifers. Other ECE countries have developed major programmes for the replenishment and stabilization of usable ground water resources.
31. At its thirty-fifth session, in April 1980, the ECE welcomed the Declaration of Policy on Prevention and Control of Water Pollution, including Transboundary Pollution as adopted by the Committee on Water Problems at its eleventh session. Several principles contained in the Declaration, refer specifically to drinking water and the preservation of water resources. According to principle 3, the aim of water pollution control is to preserve, as far as possible, the natural quality of surface and ground water, to protect the environment which depends on such water, and to decrease existing levels of water pollution in order to protect public health and to allow the satisfaction of the needs of such water, under the best economic conditions and in sufficient quantity. Among the uses to be considered, the Declaration explicitly singles out the provision of drinking water of sufficiently good quality for human health as being of the highest priority. It has also been recommended that Governments, in setting criteria and standards of

water quality in rivers and lakes as well as of effluents, should take into account, inter alia, public health and drinking water supply.

32. With regard to sanitation problems, the Committee on Water Problems is currently engaged in a major study of advanced techniques and means for industrial and municipal effluent purification. In particular, the Committee will review and consider present techniques of purification in order to promote the application of advanced technologies and to make recommendations on methods and criteria for the optimization of waste water treatment.

33. At the ECE Seminar on Rational Utilization of Water Resources (Leipzig, German Democratic Republic, 1979), several questions directly related to the improvement of drinking water supply and waste water treatment were discussed at length. One of the recommendations specifically asks that all possible efforts should be made to detect and repair leakages in order to reduce as far as possible undue water losses in the supply grid.

34. In response to the Mar del Plata Action Plan, the Committee on Water Problems decided to include two projects in its programme of work as a contribution to the International Drinking Water Supply and Sanitation Decade. The first project will focus on problems associated with water supply and effluent disposal systems in (i) areas with seasonal population fluctuations; (ii) lowly populated areas; and (iii) densely populated areas, in particular old town centres. The purpose of the study will be to recommend measures to ensure an economic and safe supply of water and environmentally acceptable means of sewage disposal and treatment. A seminar on the same subject will be held in 1982. The second project is concerned with existing practices for the control of the drawn-down and quality of aquifers. In particular, attention will be paid to ways and means of restricting the use of ground water for priority purposes, monitoring ground water quality, recharging aquifers, establishing protection zones and ensuring long-term protection of ground water quality.

IV. ECONOMIC COMMISSION FOR LATIN AMERICA

A. Present status of service in the sector

35. The International Drinking-Water Supply and Sanitation Decade comes in Latin America after two decades of intensive investment in the sector in nearly all the countries of the region. Since the adoption of regional targets for drinking water and drainage within the Charter of Punta del Este in 1960, considerable improvement has been achieved in the provision of adequate drinking water supply and sanitation services, although rather more so for the urban population. By the late seventies, in 15 countries of the region, two thirds or more of the urban population lived in houses with individual connexions to a water supply system, but in only 7 countries did more than half the urban population live in houses with sewerage connexions or septic tanks and in only 4 countries did more than a quarter of the rural population live in houses connected to a water supply system (see annex II, table 1 for detailed information on a country-by-country basis). Therefore, much remains to be done in the provision of adequate facilities for disposing of urban sewerage

and in developing rural water supply and sanitation. The majority of the countries of the region do have, however, significant ongoing programmes of investment in the sector, for example the National Sanitation Plan begun in Brazil in 1971 with its goal of supplying 80 per cent of the urban population of at least 80 per cent of the municipalities with water and adequate sanitary facilities by 1980.

B. Establishment of goals for the Decade and development of national plans and programmes

36. Despite the fact that the Decade could be seen as the culminating step in the process begun at Punta del Este, it is not clear what regional objectives and goals - if any - will be established. Many countries of the region have not as yet proposed specific national objectives for the Decade; even fewer have delineated specific goals for coverage or services or have framed the programmes required to meet them.

37. In the case of the countries which have established goals to increase coverage, some are ambitious, aiming for complete coverage of at least the urban population with water supply and sewerage services, but many embody more modest aspirations. Annex II, table 2 provides details on a country-by-country basis. Moreover, in spite of the importance they attach to the provision of adequate water supply and sanitation, some Governments have found it difficult to change sectoral priorities already established within the wider framework of existing plans and policies for over-all economic and social development.

38. The programmes prepared for the Decade in most countries of the ECLA region not only include plans for the extension or construction of new water supply and sewerage systems but also make provision for improvements in the general management of the sector, its financial stability and, particularly, the availability of trained manpower at all levels.

39. In general, although there are differences of emphasis from one country to another, the objectives for the sector in the 1980s in the region, as a whole, may be summed up in the following terms:

(a) To achieve and maintain adequate levels of coverage of the population with high quality water and sewerage facilities in urban areas and high quality water and adequate sanitation in rural areas;

(b) To consolidate the institutional structure of the sector to permit more effective management. In many countries, for example in Ecuador and Chile, this institutional restructuring is taking the form of decentralizing operational aspects, while centralizing policy-making in one institution;

(c) To create a tariff structure which, while positively contributing to a more equal distribution of income, will permit in the long term, the financing of operating, maintenance and administrative costs and capital costs out of the income generated from the sale of water. In many countries, it is recognized, however, that extraordinary capital investments supported from outside the sector will be necessary if a rapid expansion in the coverage of the population is to be achieved;

(d) To introduce more effective administrative practices and generally to improve the level of technical and financial management of the sector so as to enhance efficiency. Heavy emphasis is being placed on manpower development and training of existing staff and to increase the flow of qualified personnel into the sector. For example, Brazil is proposing to spend some \$750 million on training and technical assistance;

(e) To increase public participation in the construction, management and operation of water supply and sewerage schemes, particularly in rural areas, through decentralization of system operation everywhere. In addition, many countries have elaborated programmes of general sanitary education for the population at large. Examples of this include a special programme for the rural dispersed population in Chile, inclusion of Decade-related activities in the social action programme in Guatemala and a general programme of sanitary education in Nicaragua.

40. It is noteworthy perhaps that few countries of the region have as yet developed programmes designed to serve the water supply and sanitation needs of their rural dispersed populations. The exceptions are Colombia, Ecuador, Honduras and Panama which have adopted clear policies and programmes in this area. In Cuba and Nicaragua, the general policy of concentrating the rural population, although incidental to water supply and sanitation policies, may offer a solution in the long term.

C. Conclusions

41. The state of preparatory activities for the Decade must be characterized as incipient in the region as a whole. In only eight countries (Argentina, Bolivia, Chile, El Salvador, Guatemala, Haiti, Mexico and Paraguay) have national co-ordinating committees been established for the Decade. This is in part a reflection of pre-existing co-ordination arrangements for the sector as in Colombia, Costa Rica, Cuba, Ecuador, Nicaragua, Panama, Saint Lucia and Uruguay. In some of the larger countries of the region, however, little or no action has been taken as yet to prepare for the Decade.

42. In some of the countries where committees have been established, they have been given powers sufficient to manage the country's programmes for the Decade. This is the case, for example, in Chile and Guatemala. In Chile, the co-ordinating committee is empowered to:

- (a) Advise the Government on all matters related to the carrying out of the Decade;
- (b) Define and propose the national goals for the Decade;
- (c) Prepare the national plan to meet the proposed goals;
- (d) Propose to the Government the necessary projects;
- (e) Co-ordinate at the national level the activities related to the Decade;

- (f) Evaluate annually the activities developed to meet the goals and propose any necessary modifications.

43. Not surprisingly, given the slowness in the formation of national co-ordinating committees, little progress has been made to date in the preparation of specific plans for water supply and sanitation during the Decade. In a few countries, preliminary thought has been given, as is illustrated by the establishment of the goals shown in table 2 (see annex II). Most countries do have, however, pre-existing plans which cover at least part of the Decade, ranging from Haiti where the present plan terminates in 1981 to Ecuador and Colombia which have five-year plans for the sector terminating in mid-Decade. It must be stressed, however, that none of these plans have been prepared specifically to support the Decade. The influence of the objectives adopted at the international level signified by the Decade are, as yet, only indirectly incorporated into sector activities in the region.

44. Despite this situation, in the next year, at least in those countries where co-ordinating committees have been established or where an existing co-ordination mechanism is to be found, an upsurge in Decade-related activities can be expected. Once this group of countries begins to focus the activities of the sector around the Decade, a more generalized appreciation of the significance of the Decade can be expected to emerge in Latin America and the Caribbean as a whole. It cannot be anticipated, however, that the countries will adopt ambitious plans. In most countries, water supply and sewerage investment programmes will be tempered by the experience of the last two decades. This does not necessarily mean that innovations will not be made. It would seem more probable, however, that initiatives will be more readily received in areas of service operation and administration, the training and development of personnel and in the design of systems rather than in establishing ambitious goals for expanding coverage.

V. ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

A. Present status of service in the sector

45. The present level of service in the sector for the rural communities in 22 countries of the ESCAP region is shown in annex III, table 1. The levels of service mentioned in this table do not necessarily imply levels of utilization but only reasonable access to safe water, which means that household members do not have to spend a disproportionate part of the day in fetching water for the family. The source of supply might be treated surface water or untreated but uncontaminated water such as protected boreholes, springs and sanitary wells.

B. Establishment of goals for the Decade and development of national plans and programmes

46. The available data indicate that only a few countries of the region have adopted the target of providing water for all by the end of the Decade. A number of countries have set lower targets with different percentages for urban and rural water supply, while some countries have not established any specific targets.

47. While many countries have announced a policy of placing emphasis on providing water supplies for rural areas, in general no definite national plans and programmes for community water supply and sanitation have been formulated and prepared covering the whole Decade. In most cases, only continuing and proposed projects within the next few years have been listed. Moreover, most countries have reported that plans and programmes are still to be drawn up and will be incorporated in the next two five-year development plans covering the Decade. Likewise, it will still be necessary to identify intermediate milestones within the context of the plan periods and objectives for social and economic development as a whole. In most countries, sanitation has been assigned a lower priority than water supply.

C. Requirements for improved performance in drinking water supply and sanitation during the Decade and related constraints

48. This sector contains a brief analysis of the major requirements and constraints indicated in the country reports and other available sources. Such requirements and constraints are summarized in annex III, table 2.

1. Engineering feasibility studies on projects

49. In some countries, only project areas have been identified; in others, major projects have been designated. However, only projects already in progress have reached the stage of carrying out engineering feasibility studies. In general, such projects cover only the early part of the Decade. Since national plans and programmes still have to be prepared, it may be expected that very few projects will have been studied for engineering feasibility.

2. Manpower development

50. While the shortage of technical staff at all levels is one of the major constraints in attaining the goals of the Decade, there still appears to be a need for a systematic assessment of the manpower situation in order to determine the immediate and future needs for additional professional staff, intermediate level technicians and village technicians. Nepal is one country which is carrying out such an assessment. Some countries have established programmes for training staff but such training programmes need to be designed and based on actual needs. It may be pointed out that it would be difficult to carry out an assessment of manpower needs prior to the preparation of the national programme for the Decade.

3. Mobilization of public opinion

51. The Action Plan calls for the promotion of massive national campaigns to mobilize public opinion regarding the provision of basic sanitary services, and development of appropriate procedures to ensure the active participation of communities in the programme. At present no such national campaign is being carried out nor does there appear to be plans for mounting such national campaigns. Reliance is being placed on existing agencies and the mass media to carry out health education programmes and relevant activities. Papua New Guinea, however, has started a survey of villages' attitudes towards water supply problems

and their understanding of them. The results of the survey will be used to formulate health education programmes to reduce water wastage and enhance basic hygiene.

4. Institutional aspects

52. In most countries of the region, the problem is not the lack of appropriate institutions to plan, implement and monitor the progress of plans and programmes but rather the proliferation of such agencies. In general, urban and rural areas have separate agencies servicing the water supply and sanitation sector.

53. As a result of the large number of agencies in this sector, the problem of co-ordination needs to be solved. A number of countries - Burma, Nepal, Papua New Guinea, the Philippines, Solomon Islands, Sri Lanka and Thailand have established bodies - mostly interministerial in character - to provide the necessary co-ordination among the various agencies.

5. Mobilization of internal resources

54. The Action Plan calls for the establishment of a national revolving fund for water supply and sanitation to be financed, in the first instance, from substantially increased loans and grants from national and foreign sources. The purpose of such national funds would be to encourage both the mobilization of resources for this sector and the equitable participation of beneficiaries. The Plan of Action also calls for the inclusion of a flexible combination of rates and, where necessary, explicit subsidies or other measures designed to achieve the economic and social objectives of the programme.

55. None of the countries in the ESCAP region has declared any intention to establish a national revolving fund for the Decade.

56. The information available in the country reports was inadequate to determine the extent to which internal resources were being mobilized for the Decade. Five countries stated only their total requirements; two others only their external requirements; two others stated their total requirements and percentage of sectoral allocations in their capital budgets; one country gave its external requirements and the percentage of sectoral allocation in its budget, and three countries indicated their total internal and external requirements. The percentage of internal financing relative to total estimated financial requirements in six countries ranged between 1.3 to 50 per cent. Of these, four countries ranged between 5 to 28.6 per cent. Though this sample may be too small to allow firm conclusions, it is indicative of the major importance of the role that the external sector will be called to play in the financing of drinking water supply and sanitation in the context of the Decade.

57. In most countries, the Governments intend to recover fully the capital costs and recurrent annual charges of water-supply projects in urban areas through the imposition of appropriate water charges. However, sewerage projects in urban areas in most countries will continue to be subsidized. Financing of rural water supply and sanitation projects will also continue to be wholly or largely subsidized by Governments. In Pakistan, maintenance charges will be levied on rural water-supply projects but in other countries the operation and maintenance of such projects will

be the responsibility of the beneficiaries through their local authorities, water districts, associations or co-operatives.

6. Constraints

58. The shortage of internal financial resources is considered the most serious constraint in achieving the goals of the Decade. This is followed very closely by the shortage of technical staff at all levels which limits the capacity of the countries in implementing the various stages of the recommended Action Plan. Lack of external resources required for the purchase of equipment, materials and supplies is also an important constraint. Lack of a data base concerning water resources has also been cited as a serious constraint. An important problem encountered is the proper maintenance of existing facilities, many of which have been falling into disuse. Associated with this problem is the lack of education programmes which would help to overcome old social customs and habits and make such facilities acceptable to the rural population.

D. Conclusions

59. As a result of the Mar del Plata Action Plan, there is now a widespread awareness in the countries of the ESCAP region of the need to provide as soon as possible for the poorer segments of their populations reasonable access to a safe water supply and facilities for the proper disposal of excreta and domestic wastes. Many countries have adopted a policy of assigning a high priority to the improvement of the rural water supply service without, however, giving the same priority to the rural sanitation services. These will continue to rate a lower priority.

60. There appears, however, a need for greater efforts to be exerted in the following areas: (a) establishing targets where these have not been defined; (b) formulating firmer and more detailed national plans and programmes to attain the Decade targets, including the identification of projects for which engineering feasibility studies could be carried out; (c) assessing manpower requirements at all levels and the establishment of appropriate training programmes to fill those requirements; (d) mounting national campaigns to mobilize public opinion regarding the provision of basic sanitary services; and (e) greater involvement of the community in the planning of projects. It is also essential that these efforts be matched by the mobilization of additional internal resources and by allocating a larger share of such resources to achieve the goals of the Decade.

VI. ECONOMIC COMMISSION FOR WESTERN ASIA

A. Present status of service in the sector

61. An indicative summary of the present level of services with regard to rural and urban water supply and sanitation within the ECWA region is shown in annex IV, table 1. Table 2 in the same annex gives broad indications of country requirements for improved performance in relation to planning, project development and management and financing.

1. Community water supply

62. The percentage of the population using untreated water supplies remains high throughout the region. Some countries reported that no treated water is being used in rural areas. Untreated water is also being used in the urban areas of Jordan, the Syrian Arab Republic, Lebanon, Iraq, Saudi Arabia, Kuwait and the Yemen Arab Republic. In Iraq, where much of the community water supply is from streams and storage reservoirs, it is reported that untreated water is being used by 20 per cent of the urban population and by 76 to 80 per cent of the rural population.

63. Most of the ECWA region belongs to the arid or semi-arid zones characterized by scarcity of water supplies. (For details, see annex IV, tables 3 and 4, which indicate the degree of availability of water resources in the Arabian Peninsula and in the north and northeastern parts of the region.) Demand for these large reserves in almost all member States is growing at a rate accelerated by the rapid socio-economic development presently being experienced in the region. As a result, the ECWA countries are facing serious problems due to the shortage of water supplies. In most parts of the region, it is likely that there may be, in the near future, an overdraft in the form of water quality deterioration and/or depletion of resources due to excessive exploitation of ground water resources. In Kuwait, the United Arab Emirates, Qatar and Bahrain, for example, the ground water resources are being depleted, and more and more emphasis is being placed on desalination as a supplemental source of community water supply. This is to a lesser extent true in Saudi Arabia. Some other countries are either looking for new sources of ground water or resorting to increased surface storage facilities wherever surface water is relatively more abundant, as in Iraq and Lebanon. In Jordan, in addition to the scarcity of its water resources, the geographical distribution of the available water resources does not coincide with the needs of the various localities, particularly the populated areas. This results in an additional financial burden for water supply transportation.

2. Sanitation services

64. As can be shown in annex IV, table 1, the urban areas have traditionally been given more attention in the past in connexion with sanitation services. Some countries, including Democratic Yemen, Egypt, Iraq, Oman, the Syrian Arab Republic and Yemen reported that sanitation facilities in rural areas were almost non-existent or were very poor.

65. The ultimate destination of sewage effluent is generally the sea in those cities adjacent to coastal areas. In land-locked cities, one observes a number of situations where waste is disposed into existing streams, sometimes through open street systems. In Kuwait, some effluent is being used for irrigation purposes. In the United Arab Emirates and in Qatar, treated sewage effluent is being used in public gardens and on lawns. Studies are under way in Saudi Arabia on better ways to dispose of waste waters, including their use for irrigation. In Iraq, some waste water is treated and reintroduced to stream systems, and some is fed into depressions where it partly evaporates to the atmosphere and partly percolates down to recharge ground water aquifers.

66. In most countries, sewage effluent treatment facilities are lacking, thus waste water is disposed untreated. In others, there are installations for primary and secondary treatment. Iraq provides primary treatment for most of its urban areas, and plans are under way to commence secondary treatment in some areas. Saudi Arabia has both primary and secondary treatment in selected areas, and has plans to upgrade treatment levels throughout the country. Jordan has primary treatment for most urban areas. Kuwait has secondary treatment for urban areas, while Bahrain has primary treatment in some areas, but it is moving towards secondary treatment levels in all urban areas. Qatar has secondary treatment for the capital Doha and its vicinity. Oman has under construction a plant for secondary treatment for greater Muscat.

67. A few countries of the region, notably Bahrain, Iraq and Kuwait, have regulations to control treatment and disposal of industrial waste water. Others are studying the problem and expect to have such regulation in the future.

B. Development of national plans and programmes

68. Generally, planning for the community water supply and waste water disposal is integrated with the over-all socio-economic development plans of the countries in the ECWA region. Funding water programmes and projects, as a rule, enjoys a high priority in the over-all budget. Financing for the community water supply is always given top priority in the amount budgeted for water resources development. However, services and facilities for sanitation have been assigned lower priorities than those for water supply.

69. Within the ECWA region, 10 countries indicated that they had national plans relating to community water supply. These countries included Bahrain, Democratic Yemen, Egypt, Iraq, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia and Yemen. With the exception of Kuwait and Yemen, these countries reported that such plans cover both rural and urban areas. Public participation programmes were reported by many countries with the further indication that such plans were considered the essential components of the plans and targets for the Decade. Kuwait and Bahrain indicated that their programmes referred to the early period of the Decade, coinciding with the national economic development plan periods. Other countries, Egypt among them, projected their water demand to the year 2000 and drew up their plans accordingly. In general, comprehensive national plans and programmes for community water supply and sanitation do not seem to have been formulated for the whole Decade period, but rather these plans pertain often to the prevailing national development plan periods.

C. Requirements for improved performance in the provision of water supply and sanitation services during the Decade

70. This section presents a brief analysis of the major requirements and constraints given in the country reports and other available sources. An aggregate summary of such constraints and requirements is shown in annex IV, table 2.

1. Project identification

71. In some countries, only project areas have been delineated, while in others major projects have been identified and formulated. In Kuwait, distillation plant installations have been proposed to cope with the growing water demand to the year 2000. In Jordan, the process of project identification for water supply distribution and sewerage systems has reached an advanced stage. At present, six consulting firms are engaged in preparing feasibility studies, and final designs for eight major sector projects and three additional ones are being implemented. In Bahrain, the major proposed projects deal (i) construction of major elevated tanks, ground storage tanks, pumping stations, boreholes and trunk mains; (ii) rehabilitation of the existing distribution systems; and (iii) increasing the desalinated water production, and improving water quality. In addition to six projects currently in progress, Egypt has identified four major projects and proposed 10 others for water supply and sanitation, to be implemented throughout the Decade. Six sanitation and 10 water supply projects are being undertaken in Iraq. In Democratic Yemen, 9 sanitation projects have been identified.

72. Implementation of most of the above-mentioned projects is planned for the early stages of the Decade, as they are in general integrated with the respective national development plans.

2. Institutional arrangements

73. In many countries, there is no central authority responsible for community water supply and sanitation services. Instead, the municipalities frequently play the role of a central authority which generally implements its own plans isolated from other national water plans. The need for a central authority is becoming more apparent in the region and has been recognized by many countries, such as Democratic Yemen, Jordan, Oman, the Syrian Arab Republic and Yemen, where proposals for such a centralization exist. Where control is at the municipal level, low-interest loans are often made available by national Governments in order to expedite community water supply activities and to enable these activities to be paid back from revenues generated after construction.

74. Regarding co-ordination at the national level among organizations concerned with water activities, Jordan, Lebanon and Yemen indicated that there is lack of such co-ordination; while Iraq, Saudi Arabia and the Syrian Arab Republic stated that they were reviewing their existing structures with a view to defining new approaches to improve co-ordination.

75. Concerning activities related to the Decade, the formation of national action committees composed of representatives of the various government agencies concerned was being undertaken in Bahrain, Democratic Yemen, Egypt, Oman and Yemen. It should also be noted that technical support teams, whose memberships were drawn from field experts affiliated with the relevant organizations of the United Nations system, have been set up or were being set up in these countries.

3. Manpower development and research

76. During the past few years, the ECWA region has experienced a rapid increase in demand for trained manpower due to the improvement and modernization in various sectors of water resources development and management, where a serious shortage of skilled manpower continues to prevail. Plans and programmes for manpower development, in particular those dealing with sector activities, are being undertaken in Democratic Yemen, Jordan, Kuwait and Yemen.

77. In general, education and training in the water resources field are being recognized as vital requirements in order to overcome the crucial shortage of qualified manpower in the ECWA region. To meet these challenges, several universities have incorporated into their curricula many courses related to the various aspects of water resources. Universities in Egypt, Iraq, the Syrian Arab Republic, Kuwait and Jordan offer bachelor of science degree programmes in civil engineering, a field which covers a number of water-related courses. The Water Resources Development Center in Kuwait offers a technician's degree in the theory of desalination and the operation of desalination plants. Technical training in water-related fields is also offered in Saudi Arabia, Iraq, the Syrian Arab Republic and Jordan. Many countries have on-the-job local training, while others rely on external facilities for all higher education and technical training.

78. Various research programmes are planned or are under way throughout the ECWA region. In Saudi Arabia, the College of Science at Jeddah is conducting various studies on water-related problems, such as water pollution and water resources development. A research programme on environment and water resources was initiated in 1978-79 at the University of Petroleum and Minerals in Dhahran. Other research centers are still at the planning stage.

79. Similar research activities are under way at the university level in Qatar. The existing Water Resources Development Center in Kuwait promotes programmes for research and maintains a library that is available to others. Also located in Kuwait is the EUROARAB Institute for desalination techniques and applications.

4. Mobilization of internal resources

80. None of the member countries indicated any intention to establish a national revolving fund to finance the Decade's activities. Democratic Yemen, Kuwait, Jordan, Egypt, Oman, and Yemen have assessed their total financial requirements and the percentage of sectoral allocations in their capital budgets; Democratic Yemen, Egypt, Jordan and Yemen further estimated their expected financial requirements from external sources.

81. The intention of some countries of the region is to use water charges or tariffs to recover fully or partially the capital costs of the sector projects, particularly those in the urban areas. Rural water supply and sanitation projects are partially subsidized by the Government in Jordan, Egypt and Democratic Yemen. In Iraq, Kuwait, the United Arab Emirates, Bahrain and Saudi Arabia, the sector projects in both urban and rural areas are generally fully subsidized by the respective Governments. In a few cases, consumers in urban areas pay nominal

charges, while almost no charges are made on the rural population. In Oman, the government policy is to place more emphasis on community participation such as assistance from villagers for implementing activities pertaining to maintenance, repairs and operations of rural water supply and sanitation facilities.

82. Plans to mobilize public opinion to deal with sector activities on a country-wide scale are being made in some countries. The execution of the sector projects is carried out under the supervision of a central administration unit where the key staff members are either temporarily posted at or make frequent visits to the projects sites.

5. Constraints

83. The major constraints facing most member States in achieving the objectives for the Decade have been identified in the country report to include the following:

- (a) Lack of qualified manpower at all levels to implement the activities of the Decade;
- (b) Shortage of domestic financial resources to implement sector projects in the non-oil-producing countries;
- (c) Lack or absence of co-ordination among various concerned national agencies;
- (d) Absence of a central organization dealing with the activities for the Decade in many countries;
- (e) Lack of a data base for water resources development planning, particularly in the countries of the Arabian Peninsula.

84. Moreover, as has been mentioned earlier and can be seen in annex IV, tables 3 and 4, the most serious constraint remains to be shortage of water supply in many parts of the region, particularly in Jordan, the Gulf States and Saudi Arabia.

D. Conclusions

85. In reviewing the over-all situation in the ECWA region as it relates to community water supply and sanitation, improvement in services were observed during recent years in several countries and intensive efforts are being made by many to achieve the goals for the Decade in the rural and urban areas. However, much still remains to be accomplished. At present, very little attention is paid to drinking water supply treatment in the rural areas. This is so because much of the water was obtained from wells in the past, and it was felt that the quality was acceptable and that treatment was not needed. However, there are inherent dangers in this assertion and some Governments are realizing the need for minimizing health hazards that may be caused by use of untreated water. Health considerations must therefore receive more attention than in the past. Sanitation, which had largely been neglected in the previous years, particularly in rural areas, because of technical and financial reasons, should now be improved and developed in the region.

86. In addition, a periodic assessment of water resources should be made in order to estimate the available and potential water resources in each member country. Comprehensive national plans should also be formulated to achieve the goals for the Decade, including project identification and preparations, financial allocations and training of the necessary manpower at all levels. Programmes for the dissemination of information should be developed at national and regional levels to enhance public awareness on issues pertaining to water supply and sanitation and their impact on health and environment.

VII. GENERAL CONCLUSIONS

87. The above regional reviews show that for the most part much more needs to be done in Africa, Asia and Latin America, not only to implement goals and targets for the Decade, but in all too many countries to establish them. The International Drinking Water Supply and Sanitation Decade needs to be perceived as a practical and meaningful undertaking. The increasing awareness of Governments of the gravity of the needs will be registered as all developing countries establish targets and goals and integrate them in the national planning process, and as they achieve more rapid progress towards these goals by overcoming the many constraints indicated in the foregoing pages.

88. It may be recalled that, following the adoption of the Mar del Plata Action Plan in 1977, the Economic and Social Council, in resolution 1979/67, called for an increased role by the regional commissions in connexion with co-ordination of activities of the United Nations system of organizations in the field of water resources. It is felt that the regional commissions have an increasingly important part to play in ensuring the attainment of the Decade's ambitious goals. Periodic regional reviews would provide a most efficient means for monitoring progress towards attaining these goals. The commissions are well placed to organize and conduct such reviews.

ANNEX I

Economic Commission for Africa: coverage by country for drinking
water supply and sanitation services, and indicative sector input
requirements

Table 1

Water supply and sanitation coverage in 26 countries of the ECA region

Country	GDP per capita	Population (in millions)	Urban Rural %	Percentage of population covered			
				Urban		Rural	
				Water	Sanitation	Water	Sanitation
1. Algeria	1 100	17.0	54:46	100	100	60	40
2. Benin	200	3.2	23:77	42	very low	16	very low
3. Botswana	390	0.68	15:85	100	reasonable	28	low
4. Cape Verde	130	0.30	29:71	30	25	30	25
5. Chad	130	4.2	14:86	10 centres	low	low	-
6. Egypt	320	37.8	44:56	88	64	64	5
7. Ethiopia	110	30.2	12:88	50	low	2.5	very low
8. Ghana	380	10.6	32:68	94	-	20	very low
9. Guinea	220	5.0	16:84	27	very low	2.5	very low
10. Ivory Coast	690	7.5	33:67	50	33	17	22
11. Liberia	420	1.7	30:70	15-20	20	2	very low
12. Madagascar	240	8.1	16:84	76	-	16	6
13. Malawi	140	5.6	20:80	70	100	30	many latrines
14. Mauritania	270	1.5	23:77	16	12	low	very low
15. Mauritius	760	0.9	43:57	99	100	high	high
16. Mozambique	150	9.7	7:93	50	low	7	very low
17. Senegal	430	5.2	24:76	68	-	23	low
18. Sierra Leone	190	3.2	21:79	31	22	5	low
19. Somalia	110	3.7	27:33	58	low	20	very low
20. Swaziland	610	0.53	12:88	75	high	30	-
21. Togo	300	2.4	15:85	35	low	10	very low
22. Tunisia	860	5.9	48:52	96	64	29	60
23. United Republic of Tanzania	190	16.4	9:91	63	-	30	low
24. Upper Volta	130	5.5	8:92	23	low	13	very low
25. Zaire	130	25.7	35:65	43	8	5	6
26. Zambia	450	5.1	34:66	100	87	95	16

Source: Report prepared by WHO for ECA GWS/79.6.

Table 2

International Drinking Water Supply and Sanitation Decade (1981-1990);
Country requirements for improved sector performance in the ECA region

Country	Sector finance			Project development			Sector management		
	Technical and/or capital assistance	Internal finance (tariffs, etc.)	Project identification	Project preparation	Ground water investigation	Surface water investigation	Institutional/ Re-organization	Operational and maintenance	Manpower development
1. Algeria	X		X	X	X	X	X	X	X
2. Benin	X	X	X	X			X	X	X
3. Botswana	X		X	X	X			X	X
4. Cape Verde	X		X	X			X		X
5. Chad	X		X	X	X		X		X
6. Egypt	X	X	X b/	X a/			X		X
7. Ethiopia	X	X					X	X	X
8. Ghana	X	X					X	X	X
9. Guinea	X	X	X	X	X b/		X	X	X
10. Ivory Coast	X		X	X	X		X	X	X
11. Liberia	X b/		X		X		X b/		X b/
12. Madagascar	X	X	X	X			X	X	X
13. Malawi	X	X	X		X	X		X c/	X
14. Mauritania	X	X	X		X			X	X
15. Mauritius		X b/					X b/	X	X b/
16. Mozambique	X		X				X	X	X
17. Senegal	X	X					X	X	X
18. Sierra Leone	X	X	X c/	X c/	X		X	X c/	X
19. Somalia	X	X	X b/	X b/	X				X
20. Swaziland	X	X	X c/	X c/					X
21. Togo	X	X					X		X
22. Tunisia	X		X d/					X	

Table 2 (cont.)

Country	Sector finance			Project development			Sector management			
	Sector planning assistance	Technical and/or capital assistance	Internal finance (tariffs, etc.)	Project identification	Project preparation	Water supply investigation Ground water	Surface water	Institutional/ Re-organization	Operational maintenance	Manpower development
23. United Republic of Tanzania	X	X	X	X	X			X b/	X	X
24. Upper Volta	X c/	X	X	X	X	X		X	X	X
25. Zaire	X		X	X	X	X		X	X	X
26. Zambia	X	X	X			X		X	X	X

a/ Policies, priorities, targets and programming.

b/ In preparation.

c/ For the rural sector.

d/ For sanitation.

e/ Institutional requirements in terms of either re-organization of the institutional framework or in terms of co-ordination of existing institutions.

Table 3

Estimated financial requirements for water supply and sanitation
in reporting countries in the African region

<u>Country</u>	<u>Amount</u> (in millions)	<u>For</u>	<u>Period</u>	<u>Remarks</u>
Algeria	\$US 2,000	water supply and sanitation (urban and rural)	Decade	Present plan covers 1979-1983.
	\$US 6,300	water supply and sanitation (urban and rural)	1977-2000	
Botswana	\$US 31	water supply (urban and rural)	1976-1981	100 per cent coverage in water supply for towns at present and aimed at total coverage of all rural population by 1986. The amount of \$US 69.04m is given for a list of projects.
	\$US 69.04 (external)	water supply (urban and rural)	1979-1985	
Cape Verde	\$US 0.63	urban water supply		Population is to be served by end of decade. A three-year plan is under preparation. Decade targets are provided. Technical assistance in the amount of \$US 287,000 is given in breakdown.
	\$US 0.553	rural water supply		
	\$US 0.160	sanitation (urban and rural)		
Chad	CFAF 6 766	urban water supply	1977-1990	States that Government is not able to raise funds from internal sources.
	CFAF 49 795	rural water supply	1977-1990	
	CFAF 34 115	assessment of water resources strengthening of organization	1977-1990 1977-1990	
Egypt	\$US 1 600	water supply for Cairo	Decade	
	EE 1 000	water supply for Alexandria	1978-1981	
	EE 1 700	water supply for province sanitation (urban and provinces)	1980-2000 Decade	
Ethiopia	\$US 615 (total)	rural water supply	Decade	
	\$US 195 (domestic)			
	\$US 420 (external)			
	\$US 266 (total)	urban water supply	Decade	
	\$US 80 (domestic)			
	\$US 186 (external)			
	\$US 250 (total)	urban sanitation	Decade	
	\$US 75 (domestic)			
	\$US 175 (external)			
	\$US 4 (total)	urban sanitation		
\$US 1 (domestic)				
\$US 3 (external)				
\$US 21	rural water supply	Decade	For management.	
\$US 26.9	urban water supply	Decade		For management.
\$US 6	sanitation (urban and rural)	Decade		

Table 3 (cont.)

<u>Country</u>	<u>Amount</u> (in millions)	<u>For</u>	<u>Period</u>	<u>Remarks</u>
Ghana	₵ 596 (total) ₵ 398 (domestic) ₵ 198 (external)	water supply and sanitation (urban and rural)	Decade	No policy on sanitation.
Ivory Coast	\$US 73.4 \$US 132.7 \$US 588.9	urban water supply rural water supply urban sanitation	1981-1985	External financial requirements needed for carrying out the programme.
Madagascar	\$US 65 (total) \$US 37 (domestic) \$US 28.8 \$US 1 442	urban water supply Tananarive water supply sanitation	1979-1982 1979-1982 1979-1982	No figures are given for rural water supply.
Malawi	K154 (total) K 62.5 K 46.0 K 15.4 (domestic) K138.6 (external)	water supply and sanitation (urban and rural) rural water supply urban water supply	Decade Decade Decade	It is stated that over 90 per cent funding is expected from external sources.
Mauritania	\$US 34.2	water supply and sanitation (urban and rural)	Decade	
Mauritius	MauRs 224	water supply (urban and rural)	-	Decade plan is not available; domestic sources are not given.
Senegal	CFAF 60 000 CFAF 16 650 CFAF 30 000 CFAF 3 530	urban water supply rural water supply sanitation (urban and rural) research and studies	Decade Decade Decade Decade	

...

Table 3 (cont.)

<u>Country</u>	<u>Amount</u> (in millions)	<u>For</u>	<u>Period</u>	<u>Remarks</u>
Sierra Leone	EE 20	water supply and sanitation (urban and rural)	Decade	
Somalia	SoSh 84.2	rural water supply	1979-1981	Project financing is expected to be 32.6 per cent from domestic sources and 67.4 per cent from foreign sources. Considerable technical and financial assistance is expected from USAID, the Federal Republic of Germany and China during the Decade.
	SoSh 250.4	water supply and sanitation (urban)		
	SoSh 62.1	Investigation, research equipment		
Swaziland	\$US 10.32	water supply and sanitation (urban and rural)	1978-1983	This figure does not reconcile with other figures mentioned in the report.
Togo	\$US 75	urban water supply	Decade	
	\$US 65.6	rural water supply	Decade	
	\$US 200	urban sanitation	Decade	
	\$US 500	rural sanitation	Decade	
	\$US 15.6	Study and equipment	Decade	
Tunisia	D 180	urban water supply	1977-1981	Financial allocations are 30 per cent by SONEDE through its autonomy for finance; 20 per cent State contribution; 40 per cent long-term credit; 10 per cent participation by large consumers, i.e. industry and tourism.
	D 15	rural water supply		
	D 250	water supply (urban and rural) (domestic)	1982-1986	
	D 250	water supply (urban and rural) (external)	1982-1986	
United Republic of Tanzania	\$US 604	water supply and sanitation (urban and rural)	Decade	

/...

Table 3 (cont.)

<u>Country</u>	<u>Amount</u> (in millions)	<u>For</u>	<u>Period</u>	<u>Remarks</u>
Upper Volta	CFAP 56 000 (total)	urban water supply	1990-2005	The activities in water supply and sanitation are carried out with external technical and financial participation.
	CFAP 36 000	urban water supply	Decade	
	CFAP 36 000	rural water supply	Decade	
	CFAP 10 000	urban sanitation	Decade	
	CFAP 3 000	rural sanitation	Decade	
Zaire	Z 272 (total)	water supply and sanitation	1982-1985	
	Z 192.962 (domestic)	(urban and rural)		
	Z 79.93 (external)			
Zambia	\$US 85 (domestic)	water supply		The amounts indicated are stated to be for water supply and sanitation and seem to cover both urban and rural sub-sectors.
	\$US 5 (domestic)	sanitation		
	\$US 70 (external)	water supply		
	\$US 2.1 (external)	sanitation		

ANNEX II

Economic Commission for Latin America: coverage by country for
drinking water supply and sanitation services and statements of
goals for the Decade

Table 1
Levels of provision of water supply and sanitation,
Latin America, late 1970s a/
 (percentage of population)

Country	Water supply		Sewerage		Other Sanitary
	Urban	Rural	Urban	Rural	Services Rural
Argentina <u>b/</u>	70	14	41	-	66
Bolivia <u>c/</u>	30	2	31	0	4
Brazil <u>d/</u>	66	10	65	9	31
Chile <u>c/</u>	81	8	50	9	81
Colombia <u>c/</u>	80	29	76	7	81
Costa Rica <u>e/</u>	95	60	42	4	79
Cuba <u>e/ f/</u>	91	10	46	6	-
Dominican Republic <u>e/</u>	66	12	27	-	40
Ecuador <u>c/</u>	73	6	63	3	7
El Salvador <u>e/</u>	54	3	34	-	21
Guatemala <u>c/</u>	58	6	40	-	17
Haiti <u>e/</u>	17	0	0	0	5
Honduras <u>c/</u>	75	13	43	1	10
Jamaica <u>c/</u>	77	12	33	-	95
Mexico <u>e/</u>	70	32	41	0	35
Nicaragua <u>e/</u>	65	9	38	0	18
Panama <u>c/</u>	92	12	74	1	41
Paraguay <u>c/</u>	27	0	38	0	92
Peru <u>c/</u>	55	3	42	1	1
Uruguay <u>c/</u>	75	24	54	21	55
Venezuela <u>c/</u>	65	31	65	15	73

a/ This table is based upon a variety of existing sources. The most significant source is indicated for each country and entry. The actual statistic covered has been modified, according to the best judgement of the secretariat. Water supply is taken to be a connexion to a piped system either in the house or lot. Sewerage is connexion to a sewerage system or a septic tank. Other sanitary devices are mainly latrines.

b/ Argentina, Secretaria de Estado de Transporte y Obras Publicas, Subsecretaria de Recursos Hidricos, Instituto Nacional de Ciencia y Tecnica Hidricas, La Demanda de Agua en la Republica Argentina, Mendoza, 1976.

c/ Most recent census of population on housing.

d/ IBRD, Brazil, Human Resources Special Report.

e/ Pan American Health Organization, Health Conditions in the Americas, 1977.

f/ In the case of Cuba, the Government has adopted a policy of concentration of the rural population and the provision of sewerage facilities. In consequence, the use of other sanitary devices is not relevant to future policies and no estimate of the population presently so served has been made.

Table 2

Goals for the Decade of member countries of ECLA

Country	Goals
Argentina	<p>80 per cent urban population and concentrated rural population are to be connected to a water supply system by 1990.</p> <p>70 per cent urban population and concentrated rural population are to be connected to a sewerage system by 1990.</p> <p>No specific goals have been established for the provision of services to the dispersed rural population.</p>
Bahamas	No specific goals are yet established.
Brazil	80 per cent of the urban population is to be connected to a water supply system and 65 per cent is to be connected to a sewerage system by 1990. No information is available on the goals established for the provision of services to the rural population.
Bolivia	Considerable increase in service of water supply and sewerage in both urban and rural areas by 1990.
Chile	<p>100 per cent urban population is to be connected to a water supply system by 1982.</p> <p>60 per cent concentrated rural population is to be connected to a water supply system by 1982 and 100 per cent by 1990.</p> <p>70 per cent urban population is to be connected to a sewerage system by 1982 and 80 per cent by 1990 with remaining 20 per cent having adequate individual facilities. No specific goals are yet established for the provision of sanitation to the concentrated rural population.</p> <p>No specific goals are yet established for the provision of services to the dispersed rural population.</p>
Colombia	<p>90 per cent urban population is to be connected to a water supply system by 1990.</p> <p>85 per cent concentrated rural population is to be connected to a water supply system by 1990.</p> <p>35 per cent dispersed rural population is to be connected to a water supply system by 1990.</p> <p>80 per cent urban population is to be connected to a sewerage system by 1990.</p> <p>35 per cent concentrated and dispersed rural population is to be connected to a sewerage system by 1990.</p>
Costa Rica	<p>100 per cent urban population and concentrated rural population are to be connected to water supply systems by 1990.</p> <p>100 per cent reliable water supply is to be available to dispersed rural population through house connexions where practicable by 1990.</p> <p>100 per cent population is to have adequate excreta disposal either through sewerage connexions or other public systems by 1990.</p>

Table 2 (cont.)

Country	Goals
Cuba	No specific goals have been established for the decade but the Cuban Development Strategy has fixed the water supply and sewerage goals as provision to 100 per cent of the urban population by 1990 and to the entire population by 2000.
Dominican Republic	No specific goals have been yet established.
Ecuador	100 per cent connexions are to be provided to both water supply and sewerage systems for the whole population, urban and rural by 1990.
El Salvador	Accepts Decade goals.
Guatemala	100 per cent urban population is to have easy access to water supply and 75 per cent is to have house connexions by 1990. 50 per cent rural population is to have easy access to a reliable water supply, 20 per cent with house connexions by 1990. 80 per cent urban population is to have connexions to sewerage systems by 1990. 80 per cent rural population is to have sanitary latrines by 1990.
Guyana	No specific goals have yet been established.
Haiti	80 per cent urban population is to have easy access to water supply, 47 per cent with house connexions by 1990. 50 per cent rural population is to have easy access to water supply, 7.5 per cent with house connexions by 1990. No specific goals have yet been established for sewerage.
Honduras	100 per cent urban population is to have easy access to water supply, 80 per cent with house connexions by 1990. 90 per cent rural population is to have easy access to water supply, 21 per cent with house connexions by 1990. 100 per cent urban population is to have adequate sanitary facilities by 1990, 65 per cent to be connected to sewerage. 75 per cent rural population is to have sanitary latrines by 1990.
Mexico	90 per cent of the total population is to be connected to a water supply system, and 75 per cent to a sewerage system by 2000.

Table 2 (cont.)

Country	Goals
Nicaragua	<p>75 per cent urban population is to be connected to a water supply system by 1985.</p> <p>50 per cent rural population is to be connected to a water supply system by 1985.</p> <p>50 per cent urban population is to be connected to a sewerage system by 1985.</p> <p>No specific goals have yet been established for sanitary facilities for the rural population.</p>
Panama	<p>100 per cent of the urban population is to be connected to a water supply system by 1984.</p> <p>100 per cent of the population of the principal cities is to be connected to a sewerage system by 1984.</p> <p>100 per cent rural population in centres over 1,000 population is to be connected to a water supply system by 1984.</p> <p>Construction of water supply systems, wells and latrines for the rural dispersed population.</p>
Paraguay	<p>Complete coverage of the population with water supply and sewerage in urban and the more densely populated rural areas by 1990.</p>
Saint Lucia	<p>100 per cent of the urban population to be connected to a water supply system and 100 per cent of the rural population to have a safe potable water supply source within 100 yards of the house by 1990.</p> <p>No specific goals have been established for sanitation.</p>
Trinidad and Tobago	<p>No specific goals have yet been established but official policy is to provide good water and sanitation to the whole population.</p>
Uruguay	<p>100 per cent of the whole population, both urban and rural is to be connected to a water supply and to have adequate sanitary facilities by 1990.</p>
Associated West Indian States	<p>No specific goals have yet been established by any member.</p>

Sources: Country rapid assessment reports and reports on preparatory activities.

ANNEX III

Economic and Social Commission for Asia and the Pacific: coverage
by country for drinking water supply and sanitation services and
indicative sector input requirements

Table 1

Rural water supply and sanitation coverage in 22 countries of
 the ESCAP region

Country	Population in millions	Gross national product per capita	Rural population (percentage of total)	Percentage of rural population covered b/	
				Safe water	Sanitation
1. Afghanistan <u>a/</u>	15.5	190	71	8	Very low
2. Bangladesh	81.2	90	91	50	Very low
3. Burma	31.5	140	75	14	5
4. Fiji	0.6	1 210	67	62	93 <u>c/</u>
5. India	631.7	150	79	10	8
6. Indonesia	133.5	300	82	6	20
7. Iran	34.8	2 160	55	33	NA
8. Malaysia	13.0	930	70	49	63
9. Maldives	0.1	90	80	5.3	Very low
10. Mongolia	1.5	830	52	NA	NA
11. Nepal	13.3	110	96	5	Very low
12. Pakistan	74.9	190	74	17	2
13. Papua New Guinea	2.9	490	87	10	10 <u>c/</u>
14. Philippines	44.5	450	66	34	33
15. Republic of Korea	36.4	820	40	36	NA
16. Samoa	0.2	280	80	23	95
17. Singapore	2.3	2 880	0	-	-
18. Solomon Islands	0.2	250	90	24	20
19. Sri Lanka	14.1	200	76	13	56
20. Thailand	43.8	420	86	12	30
21. Tonga	0.11	-	50	77	100
22. Viet Nam	50.6	160	80	20	NA

a/ Figures from country report.

b/ Derived from WHO/World Bank Sector, Rapid Assessment and other reports prepared at different times.

c/ Stated figure may be an overestimate according to ESCAP national and sector data sheets.

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Table 2
International Drinking Water Supply and Sanitation Decade (1981-1990)
Country requirements for improved sector performance in the ESCAP region

Country	Sector finance			Project development			Sector management			
	Sector planning b/	Technical and/or capital assistance	Internal finance (tariffs, etc.)	Project identification	Project preparation	Water supply investigation Ground water	Surface water	Institutional j/ Re-organization	Operational maintenance	Manpower development
1. Afghanistan	X	X	X	X	X			X	X	X
2. Bangladesh	X c/	X	X	X f/	X f/			X	X	X
3. Burma	X c/	X	X	X f/	X e/	X	X	X	X	X
4. Fiji	X	X	X		X e/	X		X	X	X
5. India	X c/	X e/	X		X e/	X		X	X	X i/
6. Indonesia	X c/	X	X	X f/	X f/	X		X	X	X
7. Iran	X d/		X							X
8. Malaysia	X c/	X	X	X d/	X d/	X		X	X	X
9. Maldives	X d/	X	X	X g/	X g/				X	X
10. Mongolia	X	X		X						X
11. Nepal	X	X	X		X g/			X	X	X
12. Pakistan	X c/	X	X	X f/	X f/			X	X	X
13. Papua New Guinea	X c/	X	X	X c/	X c/			X	X	X
14. Philippines	X	X	X	X	X	X h/	X h/	X g/	X	X g/
15. Republic of Korea		X d/	X	X c/	X c/				X	X
16. Samoa	X c/	X	X					X	X	X
17. Singapore a/										
18. Solomon Islands	X	X	X			X		X g/	X	X
19. Sri Lanka	X	X	X	X	X			X	X	X

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Table 2 (continued)

Country	Sector finance			Project development			Sector management			
	Technical and/or capital assistance	Internal finance (tariffs, etc.)	Project identification	Project preparation	Water supply investigation Ground water	Surface water	Re-organization	Institutional i/ Co-ordination	Operation and maintenance	Manpower development
20. Thailand	X	X	X				X		X	
21. Tonga	X c/		X c/	X c/	X					
22. Viet Nam	X		X	X	X	X				X

- a/ Government fully capable of resolving any sector problems.
- b/ Sector planning policies, priorities, targets and programming.
- c/ For rural sanitation.
- d/ For sanitation.
- e/ Capital assistance.
- f/ Large projects.
- g/ In progress.
- h/ Water pollution control.
- i/ In rural areas.
- j/ Institutional requirements in terms of either re-organization of the institutional framework or in terms of co-ordination of existing institutions.

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ANNEX IV

Economic Commission for Western Asia: coverage by country for
drinking water supply and sanitation services, indicative input
requirements, and water resources availability

Table 1
Water supply and sanitation services coverage in the ECWA region
(1980 or as indicated in respective columns)

Country	Gross Domestic Product per capita d/ (in US dollars) (1978)	Population		urban population served			Percentage of rural population					
		Total millions (1978)	Percentage (1976)	Water supply		Sanitation	Water supply	Sanitation				
				Urban	Rural				House connexion	Public stand-points	Public sewerage	Septic tanks, buckets or other means
Bahrain	NA	0.35 a/	74	26		100	-	45	55	100	100	
Democratic Yemen	420	1.85 a/	33	67		68.3	7	7	6	34.4	Very low	
Egypt	390	39.64 a/	44	56		88	8.9		64	56	5	
Iraq	1 860	12.33 a/	63	37 c/		96 have reason- able access	10 per cent of Baghdad	80-90		30	Some works in progress	
Jordan	1 050	2.98 b/	60	40		67	33	19	81	55		
Kuwait	14 890	1.20 a/				70	30	20	80	-		
Lebanon	NA	3.01 b/				98	-		30-40	85	NA	
Oman	NA	0.84 b/	22	78		32.6	4.2	4.7	37.4	72.2	15.5	
Qatar	NA	0.20 b/	NA	NA		99	1	54	46	83	100	
Saudi Arabia	7 690	7.87 b/	25	75 c/		55	42	26	?	56	35	
Syrian Arab Republic	930	7.09 a/	44	54		70-80	10-20	65-75	-	55	10-15	
United Arab Emirates	NA	0.71 b/	NA	NA		NA	NA	NA	NA	NA	NA	
Yemen	520	5.65 b/	5	95		50	-	NA	NA	2	Very low	

a/ "Monthly Bulletin of Statistics", September 1979, vol. XXXIII, No. 9.

b/ Computed by the Population Division of the United Nations and are used whenever possible to fill gaps caused by the absence of official estimates.

c/ Statistics refer to the year 1975.

d/ World Development Report 1980; the World Bank, August 1980, Washington, D.C., pp. 110-111.

Table 2
 International Drinking Water Supply and Sanitation Decade (1981-1990): Country requirements
 for improved sector performance in the ECWA region

Country	Sector planning a/	Sector finance				Project development				Sector management			
		Technical and/or capital assistance	Internal finance (tariffs, etc.)	Project identification	Project preparation	Ground water	Surface water	Investigation	Desalination	Institutional Reorganization	Co-ordination	Operation and maintenance	Manpower Development
Bahrain	X	X	X			X				X			X
Democratic Yemen	X c/	X	X	X	X	X				X			X
Egypt	X	X	X	X b/	X b/	X	X						X
Iraq	X	X	X	X	X	X	X						X
Jordan	X c/	X	X			X							X
Kuwait	X		X			X	X				X		X
Lebanon	X c/	X	X			X	X			X			X
Oman	X	X	X	X	X	X	X			X			X
Qatar													
Saudi Arabia	X	X		X		X	X			X			X
Syrian Arab Republic	X	X	X			X	X					X	X
United Arab Emirates						X	X			X			X
Yemen	X	X	X	X	X	X	X				X		X

a/ Policies, priorities, targets and programming.

b/ In preparation.

c/ For sanitation.

d/ Institutional requirements in terms of either reorganization of the institutional framework or in terms of co-ordination of existing institutions.

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Table 3
Water resources availability in the Arabian Peninsula
(In billion cubic metres)

	Democratic					Saudi Arabia	United Arab Emirates	Yemen	TOTAL
	Bahrain	Yemen	Kuwait	Oman	Qatar				
Rainfall volume	0.0096	21.079	2.3776	14.966	0.1882	126.786	2.479	46.0856	214
Surface runoff	0.0002	0.676	0.0774	0.4500	0.0056	2.2330	0.2647	1.5000	5.210
Surface water resources	-	0.676	-	0.010	-	2.233	0.264	0.750	3.930
Utilized	-	?	-	0.010	-	0.200	-	0.30	?
Maximum potential	-	0.750?	-	0.450?	-	2.233	0.264	1.50?	5.20
Ground-water resources	?	?	?	1.409?	0.0318	0.911	0.387	?	2.74?
Annual recharge	0.199	0.350	0.130	0.781	0.0496	1.758	0.239	0.440	3.95
Utilized	?	?	?	?	2.500	20.1126	5.280	?	?
Stored	0.199	0.350	0.155	0.600	0.0318	2.0112	0.387	0.900?	4.63
Possible usable									
Non-conventional as water resources	0.008	-	0.103	0.002	0.010	0.017	0.002	-	0.142
Present	0.024	-	0.450	-	0.018	0.148	?	-	0.640
Future									
Total available water resources	0.207?	1.026	0.233	0.793	0.060	3.314	0.653	1.190	7.476
Present	0.223	1.10	0.605	1.050	0.050	4.392	0.653	2.400	10.473
Future									
Present water use	0.166	1.000	0.130	0.420	0.043	1.700	0.207	0.730	4.40
Irrigation	0.020	0.020	0.075	0.087	0.004	0.830	0.081	0.007	1.12
Domestic	0.130	0.006	0.008	0.033	0.002	0.150	0.013	0.003	0.35
Industry									
TOTAL	0.316	1.026	0.213	0.540	0.049	2.680	0.301	0.740	5.87

Source: National Development Plans;
Related National Water Resources Issues;
Food Security in the Arab World, Arab League Jan. 1980.

Table 4
Water resources availability in the north and north-eastern subregion
(In billion cubic metres)

	Iraq	Jordan	Lebanon	Syrian Arab Republic	Total
Rainfall volume	105.880	8.000	9.700	45.000	168.580
Surface runoff	106.000 including Euphrates	0.880 including Yermouk	4.025	31.445 incl. Yarmouk and Euphrates	115.900
Surface water resources	43.200 41.100 67.700	0.715 0.230 1.000	2.925 0.665 4.300	18.445 6.903 18.445	65.285 49.000 91.445
Ground water resources	Annual Recharge Available Exploited Maximum possible	0.580 0.500 0.257 0.421	3.000? 0.420 0.160 0.780	1.625 ? 2.528 1.625	5.205? 2.120? 3.365 4.826
Total available water resources	Present Future	1.215 1.421	3.345 5.080	20.070 20.070?	69.030 96.271
Present water use	Irrigation Domestic Industry	0.405 0.040 0.006	0.640 0.040 0.145	6.900 0.400 1.413	47.475 1.060 3.804
TOTAL	42.350	0.451	0.825	7.713	52.379
Future water use (2000)	Irrigation Domestic Industry	0.730 0.300 0.030	1.500 0.365 0.120	18.000 1.500 5.191	72.230 3.665 12.480
TOTAL	60.639	1.060	1.985	24.691	88.375

Source: National Development Plans;
Related National Water Resources Issues;
Food Security in the Arab World, Arab League Jan. 1980.