



Security Council

Distr.
GENERAL

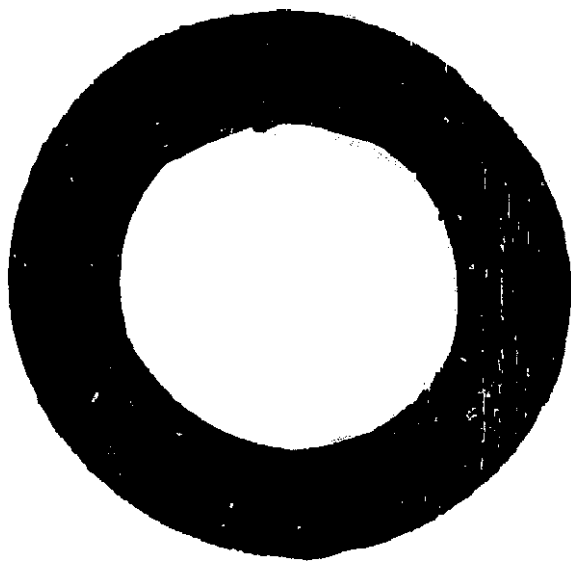
S/22799
17 July 1991
ENGLISH
ORIGINAL: SPANISH

LETTER DATED 15 JULY 1991 FROM THE SECRETARY-GENERAL ADDRESSED
TO THE PRESIDENT OF THE SECURITY COUNCIL

I have the honour to transmit herewith for the attention of the members of the Council the report of the inter-agency mission headed by my Executive Delegate for the United Nations Inter-Agency Humanitarian Programme for Iraq, Kuwait and the Iraq/Turkey and Iraq/Iran border areas, Sadruddin Aga Khan.

The task entrusted to the mission, which visited Iraq from 29 June to 13 July 1991, was to assess current needs for humanitarian assistance and recommend measures for meeting those needs.

(Signed) Javier PEREZ de CUELLAR



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Annex

[Original: English]

Report to the Secretary-General dated 15 July 1991 on
humanitarian needs in Iraq prepared by a mission led
by Sadruddin Aga Khan, Executive Delegate of the
Secretary-General

أَنْهَارٍ مِّنْ
مَّاءٍ غَيْرِ آسِنٍ وَأَنْهَارٍ مِّنْ لَّبَنٍ لَّمْ يَتَغَيَّرْ طَعْمُهُ

Therein are rivers of water unpolluted, and rivers of milk whereof the flavour
changeth not

The Holy Koran

Sura XLVII, Ayah 15

Foreword by the Executive Delegate

The aftermath of the Persian Gulf war of January and February 1991 presented a compelling spectacle of suffering and devastation to the international community. The tragic consequences of conflict, the untold loss of life and destruction were compounded by massive displacements of ill-prepared populations, by ecological disasters of unprecedented magnitude, by the collapse of the structures that sustain life in today's human societies. The region continues to face an enormous challenge in its attempt to recover from the ravages of war. In Iraq itself, the upheaval's insidious effects are leading to the gradual but inexorable collapse of essential services, leading to the risk of a humanitarian crisis whose eventual dimensions would dwarf today's difficulties.

When we decided, last month in Geneva, to try to confront these urgent issues, we knew that speed was vital. We were also aware that our findings had to be factual, precise and credible. The expert team from the United Nations programmes and agencies concerned - the United Nations Children's Fund (UNICEF), the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP), the Office of the United Nations High Commissioner for Refugees (UNHCR) and the United Nations Development Programme (UNDP) - carried out a most professional and effective assessment, well supported by their colleagues already in Iraq. The mission fanned out throughout the country, revealing both pockets of destitution and the full scale of the problems in all regions. This was a field-based mission; the observations and conclusions were drawn from on-the-spot country-wide evaluation, not imposed from the vantage point of predetermined opinion.

As well as our United Nations partners and their colleagues based in Iraq, we benefited from a third tier of expertise: a very distinguished group of non-United Nations specialists and personalities participated in the mission and its activities. I am deeply grateful to Donato Chiarini, Thomas Hammarberg, Arve Johnsen, Jean-Daniel Levi, Sir John Moberly, Edwin Moore, Elliot Richardson and Nico Schrijver for having accepted my invitation to join us. They made a contribution of outstanding intellectual, moral and technical value, which undoubtedly enhances the report's scope and credibility. Needless to say, it represents a consensus view to which all of us subscribe, while not committing every member to every single phrase and sentence written.

Our aim has been to be sober, measured and accurate. We are neither crying wolf nor playing politics. But it is evident that for large numbers of the people of Iraq, every passing month brings them closer to the brink of calamity. As usual, it is the poor, the children, the widowed and the elderly, the most vulnerable amongst the population, who are the first to suffer. This cannot leave us unconcerned, whatever the solution proposed. In

the pages of this report we have tried, in accordance with the purely humanitarian remit that was ours, to diagnose the problem and suggest remedies. It will be for the international community to decide how to respond further.

(Signed) Sadruddin Aga Khan

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INTRODUCTION

1. The decision to undertake the present mission was made by the Secretary-General, his Executive Delegate Sadruddin Aga Khan, and the executive heads of United Nations specialized agencies and programmes responsible for the humanitarian programmes in Iraq, Kuwait and the Iraq/Turkey and Iraq/Islamic Republic of Iran borders at a meeting held at Geneva on 13 June 1991. Extensive first-hand reports had been received in previous weeks indicating that the conditions of the civilian population in many parts of Iraq were steadily deteriorating. The onset of summer was likely to exacerbate the situation further, while the return of large numbers of those displaced was also having a considerable impact on severely strained food, medical, water and infrastructural resources.
2. Given the indications of the worsening plight of the majority of Iraq's population, the meeting decided that a high-level mission should proceed to Iraq to assess the current humanitarian needs and recommend measures to address them. The mission was to be action- and field-oriented, should be carried out rapidly and should focus in particular on the emergency needs of vulnerable groups. Within its overall framework, the mission would concentrate on four main sectors: food supply; water and sanitation; health; and energy (with special reference to power generation).
3. The mission was led by the Secretary-General's Executive Delegate, Sadruddin Aga Khan, and was composed of experts from the relevant United Nations programmes and agencies, namely, UNICEF, WHO, FAO, WFP, UNHCR and UNDP, as well as consultants, specialists and eminent personalities from outside the United Nations system. The latter comprised participants from Canada, France, the Netherlands, Norway, Sweden, the United Kingdom of Great Britain and Northern Ireland, the United States of America and the Commission of the European Communities. While not part of this mission, a separate team from the International Telecommunication Union (ITU) was in Iraq at the same time. Several of their findings are noted in the present report and a summary of their own mission report is included as appendix X.
4. Mission members received briefings at Geneva from the Executive Delegate before flying to Baghdad on 29 June to join with staff from United Nations agencies already in the country. The first part of the mission was devoted to information collection and analysis in Iraq. At Baghdad mission members were briefed by United Nations staff, non-governmental organizations (NGOs), and the International Committee of the Red Cross (ICRC) and were welcomed by the Minister of State for Foreign Affairs and members of the National Committee for the Coordination of Relief and Assistance. After meetings and discussions with staff of the relevant technical ministries on 1 July, mission members visited various sites, mainly outside Baghdad, from 2 to 7 July. The mission divided into four teams, which visited sites in 16 of the 18 governorates (including Baghdad).

5. The Executive Delegate and additional mission members arrived in Baghdad on 8 July. Together with certain members of his team, he met with various government officials, including the Deputy Prime Minister, the Foreign Minister, ministers of relevant technical Ministries and other senior officials. The Executive Delegate also visited the southern region in order to further the provision of relief assistance to vulnerable groups and displaced persons in the area of the marshes. The mission team departed for Geneva on 13 July.

6. The Executive Delegate and members of the mission greatly appreciated the support and cooperation extended to them by the Iraqi authorities throughout the course of their stay in the country.

I. BACKGROUND TO THE SITUATION IN IRAQ

7. As of mid-1990, Iraq was in certain respects fast approaching a standard comparable to that of some highly industrialized countries in the sector areas of concern to the present mission. A wide-reaching and sophisticated health system had been put in place, capable of routinely providing services such as kidney dialysis treatment in regional hospitals. The provision of clean drinking water was the norm, with over 1,500 treatment units nationwide providing a very high quantity of water (e.g., over 450 litres per person per day in Baghdad). Sewage treatment, including a number of very large and technically sophisticated plants, kept the quality of the water in the Tigris and Euphrates rivers at a reasonable level. While poverty and moderate malnutrition remained a problem in some areas, severe malnutrition, and related syndromes such as marasmus and kwashiorkor, were not major public health problems. A key component of the country's infrastructure and services was the generation of power through a system of 20 main stations. These stations provided power not only for the 70 per cent of the population living in urban areas, but also for many of those in outlying regions, as well as for the large amount of irrigated farm land. The country had a modern telecommunications network in both the urban and the rural areas, serving millions of Iraqis through 900,000 telephone lines.

8. An essential basis for this complex and extensive infrastructure was trade. For example, most of the machinery, as well as the spare parts to keep it running, was obtained from outside the country. Approximately 70 per cent of the food needs of the country were met through imports from abroad. What primarily paid for this level of imports was revenue from the sale of oil.

9. After the invasion of Kuwait by Iraqi forces on 2 August 1990, the situation started to change abruptly. From 6 August, by its resolution 661 (1990), the Security Council imposed on all States a comprehensive package of financial and economic sanctions. The war in January and February 1991 brought about massive destruction in many elements of the physical and service infrastructure. This was followed by further major damage created by the civil conflicts that ensued. These internal conflicts also led to the displacement in March and April 1991 of an estimated 400,000 persons to the

Turkish border and approximately 1.2 million to the border with the Islamic Republic of Iran or into that country itself.

10. In February 1991, a joint WHO/UNICEF team assessed the impact of the war on the women and children of Baghdad. From 10 to 17 March, a United Nations mission assessed the urgent humanitarian needs in Iraq and presented its findings in the Secretary-General's report of 20 March 1991. This led to an initial appeal by the Secretary-General on 8 April for \$US 178 million for aid to vulnerable groups in Iraq. On 9 April, the Secretary-General appointed Sadruddin Aga Khan as his Executive Delegate for United Nations humanitarian programmes for Iraq, Kuwait and the Iraq/Turkey and Iraq/Islamic Republic of Iran border areas. A small core Office of the Executive Delegate was subsequently established with the help and support of UNDP. A second appeal was then made on 12 April for \$US 400.2 million for refugees and displaced persons on the borders of Iraq and Turkey and in the Islamic Republic of Iran.

11. These two appeals were consolidated on 15 May, together with additional needs not previously covered. On 12 June 1991, an updated and revised appeal was issued for \$US 448.9 million. This included \$US 34.9 million for the deployment of a United Nations guards contingent inside Iraq. Of the funds requested, approximately half had been pledged to date. The majority of the funds received are designated for aid to refugees and returnees.

12. United Nations assistance in Iraq is currently provided under the terms of the Memorandum of Understanding signed by the Foreign Minister of Iraq and the Executive Delegate on 18 April 1991 and an annex to it dated 25 May 1991. Eight United Nations agencies operate in the country with approximately 400 international staff (as of 30 June), of which 197 are United Nations guards and 140 UNHCR staff. Further deployment will bring the contingent to its full complement of 500 guards. Other agencies providing assistance include an estimated 20 international NGOs, ICRC, and the International Organization for Migration.

II. SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS

13. The mission members concluded that the scale of damage and decline in Iraq in the past year had indeed been dramatic. Eight years of war with the Islamic Republic of Iran had taken their toll even before the destruction of the Persian Gulf war. In significant parts of the country, the destruction caused by the internal civil conflicts that followed the war was comparable or even greater. A final factor had been the consequence of economic and financial sanctions imposed on Iraq, including the freezing of its foreign assets and a ban on the international sale of its oil. It was clear to the mission that the impact of the sanctions had been, and remains, very substantial on the economy and living conditions of its civilian population. The mission was informed that the last reserves of food commodities that are included in the ration basket are in the process of being exhausted.

14. During the past several months major efforts have been made by the Government of Iraq to restore the country to some semblance of its pre-war situation. These efforts have been only partially successful. For example, a number of bridges have been repaired, and with the limited pumping of oil for local consumption, internal transport capabilities have in large part been restored.

15. However, the mission found that in the sectors of concern to it, the process of restoration had in many crucial respects reached its limit. Indeed, there are a number of problem areas that are likely to worsen in the foreseeable future. A review of several of the main findings within each of the sectors, which are discussed in more detail in the later sections of this report, gives reason for alarm.

16. As far as water is concerned, damage to water-treatment plants and the inability to obtain needed spare parts have cut off an estimated 2.5 million Iraqis from the government system they relied upon before the war. The perhaps 14.5 million Iraqis who continue to receive their water through this system are now provided on average with one quarter the pre-war amount per day. Much of this water is of doubtful quality, owing to such problems as defective treatment and lack of sufficient hours of electric power. Major damage was also suffered by the national sewerage system owing to the loss of electric power during the war. Most of this damage has not been repaired, with raw sewage now flowing in some city streets and into the rivers. Diarrhoeal diseases, thought to be mainly caused by water and sewage problems, are now at four times the level of a year ago. The country is already experiencing outbreaks of typhoid and cholera.

17. The health of the population in Iraq is now challenged by growing environmental hazards, insufficient access to quality medical care and inadequate nutrition. Public health programmes have reduced their activities for lack of supplies. Hospitals and public health centres are severely affected by lack of electricity, water and medicines. Medical, surgical, dental and laboratory equipment suffer from the lack of spare parts, reagents and maintenance. The fleet of vehicles that once assured the effectiveness of the health services has been reduced to a few units. Iraq used to import annually approximately \$US 360 million worth of drugs and medical appliances alone. It is highly improbable that international humanitarian aid will be able to meet this demand. Mechanisms need to be established urgently for the country to procure its own medical supplies and to maintain its equipment in operation. Failing this, the health situation will further worsen. Vulnerable groups, each day more numerous, will be the first victims.

18. As for the food supply, the position is deteriorating rapidly in virtually all parts of the country. Preliminary forecasts for the current main harvest indicate that this year's aggregate cereal production will be around one third of last year's. This will further increase the country's dependence on imports, which even in good years has meant that approximately 70 per cent of its food needs must be imported. Data collected on prices throughout the country show tremendous levels of inflation. For example,

current retail prices for wheat and rice - the two normal staple food items - remain 45 and 22 times their corresponding price levels of last year, while average incomes have shown only moderate gains. The government rationing system, even if basically equitable in its distribution, can provide only about one third of the typical family's food needs, resulting in a strikingly low level of dietary intake. The situation is particularly alarming with respect to the nutritional status of children, pregnant and lactating mothers as well as households headed by widows. Several independent studies and direct observation by the mission confirmed the high prevalence of malnutrition among children. There are numerous, reliable reports of families resorting to sales of personal and household items to meet their immediate needs. Taken collectively, this information clearly demonstrates a widespread and acute food supply crisis which, if not averted through timely intervention, will gradually but inexorably cause massive starvation throughout the country.

19. The current emergency feeding programmes, such as those being implemented by WFP for vulnerable groups, refugees, returnees and internally displaced persons accordingly acquire special significance and need to be maintained for at least the next few months. The process of repatriation must be encouraged by the continued provision of timely and adequate amounts of relief aid, not least to ensure that the situation in the areas to which the refugees are returning reverts to normal as quickly as possible. It should be noted that the economic sanctions also lessen the ability of the returning refugees to resume their ordinary lives and traditional economic activities. Indeed, the mission was informed by the Kurdish leadership that the sanctions were taking an unfortunately harmful toll upon the living conditions of the Kurdish population.

20. In terms of power generation, Iraq's capacity had been reduced to a negligible level by the end of February 1991. At present, the power generating capacity has been restored to 25 per cent of the pre-war level. As it is operating continuously, electricity production is about 40 per cent of the 1990 level. However, this restoration process has been accomplished through such methods as cannibalizing parts from damaged units, making risky makeshift repairs and operating the remaining plants without the normal breaks for maintenance and repairs. At this point, little more can be done to increase power generation further unless major imports of new parts are allowed. Barring this, power output can be expected to decline from now on. The mission has also assessed the situation of the oil sector. The requirements of the internal market can essentially be met with the current production and refining capacity, although with repairs needed soon for some refineries that are in precarious condition. The main concern is the oil export capacity, which is now only one third of the pre-war level.

21. As for telecommunications, the ITU team noted that at least 400,000 of the original 900,000 telephone lines were damaged beyond repair, while additional ones were partly damaged. The main microwave links connecting most of the cities were also damaged. This has had an obvious negative impact on the operation of health and social services as well as on humanitarian

assistance programmes. All international telecommunications were put out of service. Even after restoration work, the system can still handle only 30 per cent of its pre-war internal service, while international telecommunications remain out of service.

22. Clearly, the situation described above is one that deserves urgent attention and immediate response. In considering what actions to recommend, the mission came to a series of additional conclusions.

23. As spelled out in the specific sector reports, the primary action that is needed to address these needs is the import of material goods. This includes such items as drugs, vaccines, medical equipment, ambulances, spare parts and replacements for water and sewerage equipment, food and agricultural inputs and equipment and parts for power generation plants and the oil sector, as well as for the telecommunications network.

24. A review of the relevant Security Council resolutions and decisions by the Security Council Committee established by resolution 661 (1990) concerning the situation between Iraq and Kuwait indicates that the sale or supply to Iraq of most of these items is not restricted, although for most items notification to or prior approval by the Sanctions Committee would be required. Many fall under the clauses exempting "medicine and health supplies" and "foodstuffs" from the sanctions (see resolutions 661 (1990), 666 (1990) and 687 (1991)). Others fall under the category of materials and supplies for "essential civilian needs" as exempted in resolution 687 (1991), as well as the clause contained in the 20 March 1991 Sanctions Committee decision. The latter provides that civilian and humanitarian imports to Iraq, as identified in the report of that date to the Secretary-General, are integrally related to the supply of foodstuffs and supplies intended strictly for medical purposes ... and that such imports should also be allowed subject to approval by the Sanctions Committee under its no-objection procedure. So far, the relevance to the humanitarian programme of the import of spare parts and equipment for the restoration of electric power plants and for the telecommunications network has not been recognized.

25. In this context, the mission observed that, in most of the cases that came to its attention, problems to date with importing the above items had more to do with the financing of such imports than actual prohibitions. The question of financing becomes even more crucial in relation to future importations that need to be made.

26. The mission members utilized the best information available to them to estimate the costs of returning the systems in each of the four sector areas to their pre-war condition. This proved possible for most sectors, with the estimates being \$US 12 billion for the power-generating capacity, \$US 6 billion for the oil sector, \$US 450 million for the water and sanitation systems, \$US 2.64 billion for food imports and \$US 500 million for agricultural imports. While these calculations were not possible for health, an indicative figure would be the typical level of international imports for the health sector for one year, which has been approximately \$US 500 million.

27. The principal criterion adopted by the mission in evaluating these needs has been that it is concerned not only with addressing immediate requirements of humanitarian scope and nature, but also with averting a crisis in the next 6 to 12 months. To illustrate this point, urgent measures must be taken now to ensure that the next agricultural planting season can be completed under reasonably normal conditions.

28. Consequently, the mission attempted to determine the costs for some lower level of actions, over a one-year time-frame. Figures were calculated for providing approximately two fifths of the pre-war per capita levels of clean drinking water and putting a corresponding proportion of the damaged sewage-treatment capacity back in operation. Expenditures for imports for health services were calculated at the pre-war level. Food import calculations were based on the ration level that WFP provides to sustain disaster-stricken populations. Special supplemental feeding programmes to support the nutritional needs of malnourished children and pregnant and lactating mothers for one year were calculated. Power generation estimates were based on restoring approximately one half of the pre-war capacity of the country. For the oil sector, the mission worked out a cost based on the consolidation of existing refineries, the restoration of lubrication units, the repair of the Iraq-Turkey pipelines, and of the oil facilities in the Kirkuk areas. This would not include repair of the southern oil fields.

29. The total estimated costs for this greatly reduced level of services came to approximately \$US 6.8 billion over a one-year period. This includes \$US 180 million for water and sanitation, \$US 500 million for health services, \$US 53 million for supplemental feeding, \$US 1.62 billion for general food imports, \$US 300 million for essential agricultural needs, \$US 2 billion for the oil sector and \$US 2.2 billion for power generation. If this analysis is applied to a four-month time-frame, the requirements would come to \$US 60 million for water and sanitation, \$US 167 million for health services, \$US 18 million for supplemental feeding, \$US 540 million for food imports, \$US 100 million for essential agricultural imports, \$US 667 million for the oil sector, and \$US 1.1 billion for power generation. The power and oil sectors include allowances for the front-end costs occurring in these sectors. Thus, the total for an initial four-month period would be \$US 2.63 billion.

30. The massive financial requirements to establish even this reduced level of service are of a scale far beyond what is, or is likely to be, available under any United Nations-sponsored programme. The current United Nations appeal for humanitarian assistance for Iraq, Kuwait and the border areas with the Islamic Republic of Iran and Turkey has received only some \$US 210 million to date. Most of these funds are pledged for the needs of refugees and returnees. Further, any additional requests for aid to Iraq must compete with a continually lengthening list of other emergency situations around the world with very compelling needs.

31. It is evident that the Iraqi Government itself will have to revise its priorities and mobilize all internal resources. It will also have to finance the import of the type of materials under discussion, for which it has already requested approval from the Security Council Committee established by resolution 661 (1990). It certainly appeared that the Iraqi Government has the potential itself to generate the funds required to cover the needs identified by the team. This could be done either by the unfreezing of substantial amounts of Iraqi assets now held abroad or through the pumping and subsequent international sale of oil. The mission was informed that foreign exchange reserves of only \$US 14.75 million were on hand in the central bank and that the Government's holding of gold bullion in support of the national currency had remained constant for the last 20 years.

32. With respect to the possible sale of oil by the Iraqi Government to finance such imports, paragraph 23 of Security Council resolution 687 (1991) empowers the Security Council Committee established by resolution 661 (1990) to approve exceptions to the prohibition against the import of commodities and products originating in Iraq, with the explicit purpose of assuring "adequate financial resources" on the part of the Iraqi Government to procure medicine and health supplies, foodstuffs and materials and supplies for "essential civilian needs".

33. According to the Government, the current oil-production capacity of the country is 1,455 million barrels per day. Taking into account internal consumption requirements, the production available for export could be about 1 million barrels per day. This would mean a potential net revenue of \$US 5.5 billion over one year. Furthermore, in order to increase the production to the pre-war level, extensive repairs and rebuilding would have to take place, particularly in the Basra area. The mission therefore recommends that Iraq be allowed to import over a four-month period \$US 1 billion worth of equipment, spare parts and consumable materials to start restoration of the oil sector.

34. If the Security Council Committee were to decide that Iraq should be allowed to use funds from oil sales or facilitate the use of blocked accounts in order to meet urgent humanitarian needs, the Government indicated that it would cooperate in making available documentation relating to sales of crude oil as well as purchases of the authorized imports. It noted that all revenues accruing from oil sales were normally held in United States banks and that a suitable device for monitoring such credit balances could be established. This procedure could include information on the use of unfrozen accounts. In addition, the staff of the United Nations and other humanitarian agencies present in Iraq, as well as special missions designated by the Secretary-General as required, might for instance submit periodic assessments and in particular report on the changes in the composition of the rations of foodstuffs and the provision of health and social services brought about by increased imports. The staff concerned would also obtain up-to-date information on the repair and improvement of power-generating capacity, the operation of water and sewerage plants and the like. The envisaged procedure would thus help to ensure the actual receipt of the civilian and humanitarian goods in Iraq and their utilization by the intended beneficiaries.

35. In summary, the mission recommends that:

(a) Immediate steps be taken to alleviate the priority needs identified by the mission in the areas of food supply, health services, water and sanitation, power generation, the oil sector and telecommunications;

(b) To meet these needs, essential goods and materials should be imported, including:

- (i) Food to meet the minimum consumption requirements, in part to reduce and shorten the emergency relief operation now in operation at donors' expense;
- (ii) Agricultural inputs, including fertilizers, pesticides, animal feed and drugs, machinery and spare parts needed to repair the damaged irrigation and drainage system;
- (iii) Drugs, including raw materials needed for local pharmaceutical production, vaccines, medical supplies and medical, surgical, dental and diagnostic equipment for the health system;
- (iv) Vehicles (and spare parts for them) needed by the health system, including ambulances;
- (v) Spare parts, supplies and equipment and replacement pumps and other heavy equipment needed by water-treatment and pumping facilities and by the sewage treatment system;
- (vi) Equipment, materials and spare parts for the electric power system, the oil sector and for the telecommunication sector;

(c) A monitoring system should be instituted for this purpose. The relevant commercial transactions relating to the export of oil and the import of the above-mentioned goods and services could be made sufficiently transparent at the international level to allow adequate controls with respect to their shipment and entry into Iraq. The monitoring arrangements in the context of the United Nations humanitarian presence in Iraq, as outlined in paragraph 13 of the Memorandum of Understanding of 18 April 1991, could be further developed and strengthened so as to provide adequate information on the destination and use of the goods in question.

III. SECTOR REPORTS

A. Water, sanitation and environmental health

36. Appraisals of the provision of safe drinking water, sanitation and environmental health services were based on information from several sources. These included earlier studies and surveys by UNICEF and other United Nations agencies, ICRC, NGOs and related government services, as well as personal

accounts of other knowledgeable individuals and direct observations during the mission's extensive field visits. The Governorates of Kut, Amarah, Basra, Erbil and Dokuk were visited, and extensive discussions took place with the population, local authorities and plant operators in each of them. In addition, technical discussions were held with the Ministry of Health and the General Establishment for Water and Sewage at Baghdad. Finally, the field visits included inspection of the treatment plants and review of their performance.

37. In the course of discussion, the mission learned that a sizeable quantity of spare parts, equipment and ductile iron pipes were being held in Turkey owing to the embargo imposed on Iraq, and that these had already been paid for. Mission members were also informed that a large number of contracts negotiated and signed with foreign companies had not been executed owing to the embargo.

38. Before the advent of the Persian Gulf crisis, over 90 per cent or 16.8 million of the population of Iraq had access to an abundant quantity of safe drinking water through a network of some 1,500 water treatment plants. The rest of the population (1.9 million) relied on untreated water from rivers and springs. In mid-1990 average national water consumption was estimated at around 416 litres per capita per day. Baghdad and a score of cities situated along the Euphrates and Tigris rivers benefited from modern sewage-treatment plants which kept the quality of river water at reasonable levels of purity.

39. Extensive efforts to eradicate malaria, leishmaniasis and other vector-borne diseases had resulted in dramatic decreases in their incidence. An effective environmental health surveillance system ensured a high quality of drinking water. These efforts, coupled with a relatively extensive health delivery system in the country, spared Iraq from the epidemics that are encountered in many other developing countries.

40. The events of the Persian Gulf crisis severely disrupted the water and sanitation services. Actual potable water production is now 1.5 million cubic metres a day whereas it was 7 million cubic metres a day in mid-1990. An estimated 2.5 million people who formerly received water through the government system have been deprived of this service (of these, 1.2 million are located in the country outside Baghdad, many of them along the two main highways leading north from Basra where bridges were heavily bombarded). This is due to two factors: the damage or destruction of water-treatment plants and water-distribution networks and the lack of spare parts to repair the systems in place that were not affected by the war. Ad hoc maintenance practices over the years have also compounded the problem. The remaining 14.3 million inhabitants now receive some 100 litres per capita, ranging from 10 litres per capita in some rural areas to 250 litres per capita in parts of Baghdad. This is a nearly threefold decrease, and the water provided is of doubtful quality. With water-consuming industries now at a standstill, this quantity of water is barely sufficient to meet the most basic needs of the population. However, once power becomes available and these industries resume operations, competing with the needs of the population, it is likely that

potable water will become dangerously scarce, unless production is greatly increased in the interim.

41. About 300 wells, mainly in the north of the country, were seriously damaged during the past six months. Additionally, many of the boreholes require maintenance. All of these water sources require replacement equipment, including chlorinators. In the rural areas of the country a large proportion of the population receives water from local springs. A high percentage of these springs have been damaged, as have their protection installations and delivery pipes. Such sources can be restored with the participation of the local population.

42. The large treatment plants at Al-Khadir (near Samawa) and at Ramadi were seriously damaged. These stations require major repairs, and they should be put back into service as soon as possible. Cannibalization of equipment has left weak, inefficient units operating without any back-up capabilities. Many maintenance stages are bypassed when they stop. For example, the clarifiers are bypassed at the Basra treatment plant because the motors there are burnt. At the same station, chlorine is fed directly from the cylinder, as there is no chlorinator. Spare parts, a steady power supply and technical expertise from the manufacturers are needed to help keep the plants in service.

43. There are also small treatment plants, mostly skid-mounted, installed all over the country. All of these units require spare parts for maintenance and over 75 per cent of them require chlorination equipment. Four of the above plants are totally worn out and need replacing; currently, the population served by them is obliged to use badly contaminated water. The main problem facing a large number of these plants, many of which have no stand-by generators, is the lack of electrical power supplied.

44. Supply and distribution networks were also severely affected. The destruction of the two bridges in Baghdad with their main feeder pipes deprived about 20 per cent of the city's population of access to the municipal water supply. The leaks in the system, many of which are results of the war, are presumed to be underground. Water engineers are unable to verify this for lack of leak detectors. Many leak detectors, repair collars and large-diameter pipes are needed to replace the destroyed feeders in Baghdad and elsewhere.

45. Throughout the country, electric power is available only six to eight hours a day on average. This forces the systems to shut down, thus causing serious risks of pollution within the networks, because of a back-siphonage effect that is especially severe in areas with high water-tables. In cities such as Basra, fresh sewage was observed overflowing in many city streets when such power interruptions occurred.

46. Aluminium sulphate and chlorine, the chemicals essential for water treatment, are in short supply; indigenous production halted following the destruction of the local chemical plants. These chemicals now have to be imported. Owing to the chlorine shortage since the end of the war, the water

is all too often distributed without chlorination. The shortage of chlorine has also prevented the pre-chlorination process in treatment plants and therefore algae and water grass have grown on the walls of the concrete water channels, the clarifiers and settling tanks of these plants. There is little point in cleaning up this infrastructure until chlorine is available on a steady basis and they can be put back into effective operation on a long-term basis.

47. Water quality has been affected tremendously by the limited stocks or lack of chlorine available to the treatment plants. In a number of water treatment plants visited, chlorine residual readings are no longer being taken, for lack of the necessary reagents.

48. Bacteriological tests are being carried out haphazardly and results are not reliable, since power cuts interfere in the incubation of samples being analysed. In Amarah, for example, the presence of faecal material in treated water has been recorded several times by the plant laboratory. This has been attributed to the decreasing performance capacity of the sand filters, which are not being cleaned regularly (for lack of compressors), as well as to the irregular application of chlorine.

49. The General Establishment for Water and Sewage in Baghdad has a state-of-the-art water-testing laboratory that is partially functioning. The modern equipment received just at the outbreak of the Persian Gulf crisis is idle, since the staff is not in a position to install or operate it. Foreign expertise is needed to make the equipment operational and train local technicians in its use and maintenance.

50. In the sewerage sector, most of the treatment plants have ceased to operate, owing to flooding of the pumping stations by sewage and rainwater during the period when electrical supply was not available at all. The sewage is now either overflowing in the streets of cities (Basra), or being discharged into the rivers without any treatment (Amarah, Baghdad). These technically sophisticated plants require continuous and sustained maintenance. Available expertise cannot provide the necessary servicing of these installations, which require foreign expertise from the firms that built them. The ultimate threat is posed by the large quantities of sewage from upriver cities that flow untreated into the country's two major rivers and run downstream. These rivers, the Euphrates and Tigris, constitute the main water sources of the country. Much of the population along their banks is now obliged to drink this polluted water straight from the river, since most of the water purification systems they depended upon no longer function. This further compounds the vicious cycle of water-borne diseases.

51. Basra, at the end of the most contaminated river, faces a particularly drastic situation: the high salinity of its water is compounded by the high water-table that lies beneath the city. With only 1 pump operating in 4 out of 26 main sewage-pumping stations, Basra is choking. Sewage overflows its streets and has inundated basements and low-lying areas of the city. The city authorities are in a quandary as to whether to satisfy the drinking water

needs of the population, thus contributing to the sewage problem, or to limit the flow of water, until such time repairs can be made. The latter choice would necessitate the provision of spare parts and new pumps; the cannibalizing of severely damaged pumps can no longer solve this massive and growing problem.

52. The capacity of the solid-waste collection and disposal system is less than 25 per cent of the mid-1990 level. This capacity is decreasing further owing to the poor maintenance of remaining equipment and the lack of spare parts. The core of the problem, however, lies in the destruction of specialized equipment which occurred during and after the upheavals, especially in the south. Garbage stays for long periods of time before being collected. The lack of pesticides is allowing the continuous increase of insects, rodents and other pests, many of which are disease vectors. The fleet of garbage collection equipment, primarily compactor trucks, has to be upgraded through the purchase of spare parts and new trucks. As incinerators no longer function, sanitary landfills must be established in the proximity of large towns. This will require the provision of earth-moving equipment (graders, bulldozers and dump trucks).

53. The control measures for vector-borne diseases and environmental health conditions are affected by the lack of insecticides, rodenticides and chemical reagents required in performing bacteriological and chemical quality tests for water, sewage and foodstuffs. Municipal solid-waste disposal systems have been disrupted owing to the looting of the vehicular parks in many of the municipalities. In many of the municipalities visited, the sanitary landfill method has been discontinued as bulldozers and graders are no longer available.

54. The sanctions imposed are hampering the importation of the spare parts, chemicals, reagents, insecticides and means of transportation required to provide environmental health services to the urban areas of the country. They are stymieing the delivery of these services to rural areas.

55. The results of the humanitarian efforts launched by the international community and the great strides made by the various government departments to reactivate essential services have not succeeded in meeting even basic recurrent water and sanitation requirements. They are clearly insufficient to re-establish standards of living at a minimal acceptable level.

56. The substantial demand for spare parts, replacement machinery and transport equipment is so great that the humanitarian effort will not be able to meet existing needs. For example, chemicals for water treatment supplied by humanitarian organizations up to the end of May represent the needs of 14 days of operation only at current pumping levels. As for spare parts and equipment, the amount needed represents less than 1 per cent of the real need. It is only by making it possible for Iraq, which had been self-supporting in this sector for many years, to use its own resources to finance these life-sustaining, essential services that they can be re-established.

57. An analysis was made of the costs of the imported supplies and equipment needed to raise present potable water-production rates to their pre-Persian Gulf war levels of approximately 7 million cubic metres per day and to put the waste-water treatment and solid-waste disposal systems back to their pre-war levels. This was estimated to require approximately \$US 450 million.

58. A further analysis was made of the costs required to reach a lower level of operation. This involved producing 3 million cubic metres per day of potable water and returning the sewage-treatment systems to approximately half of their pre-war level. The costs came to \$US 90.6 million for the water system and \$US 73.75 million for the sewage-treatment systems. This work could certainly be completed within a one-year time-frame if the importation of the needed materials is allowed. In addition, \$US 15.85 million worth of imported materials and goods need to be imported for the operation of vector control and environmental health services for one year. This would give a total cost for one year of \$US 180.2 million.

59. The mission recommends that the following actions be taken to deal with the problems identified in the water, sanitation and environmental health sectors:

(a) Allow both the importation of spare parts, which were prepaid and held in transit to Iraq and the implementation of already negotiated projects;

(b) Permit the importation of supplies and equipment needed to raise present potable water-production and sewage-treatment rates to their pre-Persian Gulf war levels. If this is not possible, importation of at least \$US 180.2 million in goods and materials should be allowed over the next 12 months to re-establish these systems at the minimal rates described earlier. A reasonable initial four-month level of importation at this reduced target level would be \$US 80 million, which reflects some of the front-end costs of restoring major equipment;

(c) Facilitate the contracting of foreign expertise for the Baghdad Water and Sewage Authority and the General Establishment for Water and Sewage to reinforce and increase the availability of their services to the population of Iraq.

B. Health sector

60. In order to appraise the status and trends of health and of the provision of health services in Iraq, the mission drew information from various complementary sources. These included: Iraqi government written material and officials (especially health personnel); earlier studies and surveys; personal accounts by other knowledgeable individuals in the country including the staff of NGOs and members of the community, patients and their relatives; and direct observation during the mission's extensive site visits. The design of the mission and the time-frame within which it had to operate did not allow extensive primary data collection and analysis.

61. Before August 1990, the health care system in Iraq was based on an extensive and developing network of primary-, secondary- and tertiary-care facilities, both governmental and private. These facilities were linked among themselves and with the community by a large fleet of ambulances and service vehicles and by a good communication system. The health-care system, which tended to emphasize curative aspects, was complemented by a set of active public health initiatives.

62. The war, and to a larger measure the ensuing internal civil disturbances, resulted in significant damage to hospitals and health centres. The extent of this damage varied from one governorate to another, being most severe in the southern Governorate of Basra and in those bordering Turkey and the Islamic Republic of Iran. However, site visits made by the team led to the conclusion that the physical infrastructure of health services remained adequate to cope with the present needs with the exception of certain areas where refugees chose to return. The functional capability of the system was however greatly diminished by the shortage of water and power supply, by the lack of vehicles and the collapse of the telecommunications system.

63. Since the early days of the war between the Islamic Republic of Iran and Iraq in 1982, foreign exchange for the import of equipment and supplies has been tightly controlled. Heavy equipment, such as X-ray machines, CAT scans, laboratory apparatus and generators have been procured through a national authority. This authority has relied heavily on international sources for the supply of spare parts and for many major repair and maintenance operations. An effect of the current sanctions and other international restrictions has been to limit markedly the provision of these items and services.

64. It is estimated that less than half of the diagnostic and medical equipment present in health-care facilities is still in operable condition. Some of it has been damaged by frequent power fluctuations or inadequate water supply. Other machines are still awaiting repeatedly postponed major maintenance operations.

65. Most hospitals have now had to function for months partly on electricity provided by generators that had largely exceeded their recommended usage time. Two thirds of the generators in the hospitals visited were out of order. The fleet of vehicles had suffered major losses. Some had been taken

away, others destroyed, others needed repair. Frequently, governorates were left with a dozen vehicles out of an initial pool of over 100.

66. Regarding drugs and medical supplies, the isolation of Iraq from its normal sources of procurement since August 1990 has made it draw on its own internal stocks. These may be nearly exhausted. Certain vaccines, antibiotics to combat epidemics of cholera and typhoid, drugs for the treatment of certain metabolic diseases (e.g. insulin for diabetes), and certain drugs for treating cancer and cardiovascular diseases, are no longer available in sufficient quantities from the central medical store. The production of the local pharmaceutical industry has come to a halt as a consequence of the lack of power supply, water and raw materials.

67. According to government figures, the total amount of funds spent by Iraq on the purchase of drugs and medical appliances alone for the public and the private sectors in 1989 was \$US 360 million. It was estimated during the mission that, apart from refugee relief operations, humanitarian organizations had provided drugs and medical supplies to Iraq for a total value of less than \$US 50 million in 1991. This leaves a large gap that is most unlikely to be bridged by any international aid during this year. Although medicine is exempted from the United Nations sanctions, there are at present payment problems for such imports owing to the freezing of Iraq's assets abroad, restrictive trading arrangements and the prohibition on the export of oil.

68. The mission concluded that there was currently no major problem regarding the availability of health personnel in Iraq. After a period that saw a decline in the total number of health staff owing to military mobilization, population displacement in the north and south and, to a lesser extent, the departure of expatriate employees, the situation is now close to that prevailing before August 1990.

69. In the health personnel development area, in-service short courses had taken place in certain governorates on such topics as diarrhoeal diseases or immunization, but training abroad was no longer possible. The effects of this will not show immediately but it is urgent that opportunities for training abroad be restored.

70. Regarding access to health care, in 1986 it was estimated that 97 per cent and 78 per cent of urban and rural populations respectively had access to health services. At present, considerable regional variations can be noted in the degree to which population groups have access to health care. However, overall, the compound effects of lack of transport, population displacement, reduced capacity of government health facilities and the impossibility for many families to afford services from the private sector is reducing the access to health services of many people, especially the most vulnerable groups.

71. Because of the particularly precarious state of health of populations returning from the Islamic Republic of Iran and Turkey, special attention must be given to medical infrastructure and programmes in areas where returnees are

concentrating. To address this situation, the emphasis has been put on re-establishing the normal structures where these have been damaged or destroyed and on restoring health networks such as those for drug distribution.

72. The mission did not find any evidence that medium- to long-term contingency plans had been worked out for the health sector to respond to the fast evolving situation. It was clear however that adjustments were made periodically as new challenges were being faced and that in the prevailing context of uncertainties and fears, these adjustments were understood, endorsed and implemented by dedicated health staff.

73. The utilization by the public of medical-care services is also being confronted with increasing difficulties. In recent years, there has been an easy access to government services, which were provided free of cost, and to affordable private medical services. Thus, according to government statistics, the per capita expenditure by private citizens on medical services and health care was relatively low: 1.6 per cent of total expenditures. Virtually all physicians have a private practice, which often yields an income in one day equivalent to their monthly government salary. Reportedly, in 1990 the country was equipped with 31,000 beds in government hospitals and health centres, supplemented by 9,000 beds offered by the private sector. These figures are illustrative of a system that relied on a combination of two sub-systems (public and private), which was deemed adequate to meet the needs. The war, the ensuing civil disturbances and the shortage of external supplies had a direct impact on the coverage and quality of care.

74. The displacement of large population groups, the lack of transport and the chaotic situation prevailing in hospitals and health centres during the first six months of 1991 resulted in severe disturbances in the patients' referral system. Many health centres being temporarily closed, a major influx of patients came directly to hospitals already overloaded with casualties, understaffed and deprived of water and electricity.

75. The lack of energy supply resulted, for example, in the shutting down of at least two haemodialysis departments. In Mosul, 28 of the 50 patients who were on artificial kidneys in early 1991 reportedly died as lack of electricity and water prevented the machinery from functioning. In Basra, 17 patients died for the same reason. In surgical departments, the shortage of anaesthetic drugs, dispensable equipment, electricity and water had led hospital authorities to limit surgical interventions to emergencies only. Elective surgery was postponed indefinitely. Patients suffering from chronic metabolic diseases or cancer were affected by the lack of drugs and the reduced capability of the health system to provide biomedical monitoring.

76. The foreign exchange needed to cover the costs of the imports required for one year of operation of the health sector would be an estimated \$US 360 million for finished drugs, vaccines, medical appliances and disposable supplies; \$US 100 million for raw materials needed to sustain the local pharmaceutical production; \$US 10 million for ambulance and liaison vehicles; \$US 30 million for the replacement and maintenance of critical

health service equipment, including generators and medical, surgical, dental, laboratory, X-ray and other diagnostic apparatus. Therefore, the total requirement, which should be revised periodically as the situation evolves, would be in the region of \$US 500 million.

77. The mission held extensive discussions with medical, surgical and nursing staff on the need to apply appropriate case management more systematically. These discussions led to the general conclusion that additional strategy planning and retraining could help to cope better with the evolving situation but that the impact of these measures would only be marginal.

78. Common communicable diseases of major public health importance in Iraq are closely associated with environmental sanitation. As water supply is deficient in both quality and quantity and services for waste disposal are severely reduced, the country has experienced an increased incidence of cholera and typhoid. By way of example, in five governorates visited, the reported diarrhoeal cases among children under five years of age were over 26,000 and 77,000 for May 1990 and 1991 respectively, representing a threefold increase. For typhoid, the total figures for May 1990 and 1991 were 98 and 230 respectively, a more than twofold increase. Because of disruption in the reporting and surveillance system, the 1991 figures no doubt represent only a fraction of the actual incidence of these diseases.

79. Emphasis should be put on public health programmes with a strong training component in environmental sanitation. This is particularly true of areas where refugees from Turkey and the Islamic Republic of Iran are returning, and where a dramatic increase in water-borne diseases has been noted.

80. A WHO mission examined the malaria situation in May 1991 and concluded that the incidence of the disease remained low, although the risk of its spreading was aggravated by the shortage of insecticides and spraying equipment and by the expected return of refugees from areas of higher endemicity.

81. In all the governorates visited, the mission was informed of shortages of reagents for laboratory diagnosis, even for common and life-threatening communicable diseases, and of the essential drugs for their treatment. The capacity of the national health authorities to respond quickly to epidemics has been compromised because of communications difficulties (especially telephone and electronic communications). All in all, the indications are that, without an immediate improvement in the situation, communicable diseases will take a heavy toll on the Iraqi population.

82. Immunization, an important element of the maternal and child health (MCH) programme, requires an effective cold-chain, regular supplies of vaccines and systematic follow-up on children during their first year. The war and civil disturbances severely affected these elements. The lack of electric power, the shortage of vaccines (all imported) and population displacements led to a complete halt in immunization activities between January and April 1991. The mission found that immunization had gradually restarted in many health centres

but that in many places vaccines were periodically lacking, the cold-chain had not been fully restored, the staff were unfamiliar with some newly supplied kerosene refrigerators and the immunization sessions were deficient in educational components.

83. A second area of emphasis in MCH is the prevention and control of diarrhoeal diseases. Diarrhoea took a heavy toll among the children of displaced populations and among those who no longer had access to safe drinking water supply. Oral rehydration therapy (ORT), being administered to 71 per cent of diarrhoeal cases in 1990, was in fact rarely observed in health centres or described by a mother whose child was treated for diarrhoea. In hospitals, this method was not widely applied, even among children who were able to drink but were still under intravenous rehydration therapy. By contrast, ORT had been an important and successful feature of mortality reduction among displaced population, particularly among those who had been residing in camps.

84. The remaining two factors relating to MCH care are the food supply for pregnant and lactating women and the emergency supplementary feeding programme for malnourished children. The conflicts have left an estimated 300,000 children below the age of six malnourished. These children, who represent 10 per cent of the total population of their age group, will require roughly 20,000 tons of nutritional support over the next 12 months, including skimmed milk, weaning formulae, sugar and oil. Among pregnant and lactating women, nearly one third are in need of nutritional support, primarily in the form of oil, sugar and dates.

85. The pattern of deliveries in the country used to be such that about 70 per cent of deliveries took place in health institutions. This pattern was reversed during the disturbances as most mothers gave birth at home. No figure on maternal mortality could be estimated for 1991. Visits to health facilities indicated that pregnancy monitoring was being reinstated but that it was hampered by the lack of laboratory support (haemoglobin) and medicine (vitamin supplements and iron). The outcome of pregnancies among mothers who are currently suffering from stress and undernutrition and are exposed to less hygienic living environments will impose on the health system a need for reinforced pre-, peri- and post-natal care.

86. According to sources available to the mission, malnutrition was not a major public health problem among children in Iraq prior to 1991. Nutrition surveillance and nutrition training were neglected, however. Before the Persian Gulf crisis, although growth charts were used in MCH centres, growth-monitoring was virtually non-existent, health records seldom filed, nutrition education of mothers neglected and consequently weaning and feeding practices of babies frequently inappropriate. The proportion of babies being breast-fed was low and at the age of one year only 20 per cent were still breast-fed.

87. Available studies, conducted after the Persian Gulf war between February and June 1991 have been limited to a small number of children (sample size of

a few hundred), predominantly in MCH centres and hospitals. Those studies indicate a high prevalence of growth retardation and wasting among babies and children. When trends could be found they suggested consistently a deterioration of nutritional indicators in the last three months (April-June 1991).

88. The mission visited paediatric wards and health centres in five governorates in the south and six in the north. Cases of malnutrition were seen in outpatient departments and in paediatric wards with a frequency that varied significantly from one governorate to another and, within the same governorate, from one facility to another. There was clear evidence that severe malnutrition was present in all governorates, it being recognized however that frequency and patterns of malnutrition seen in hospitals were only a reflection, sometimes distorted, of the situation prevailing in rural areas. All the indicators, testimonies, anthropometric measurements, mortality and morbidity data collected consistently pointed to widespread and severe malnutrition in Iraq. The children examined by qualified investigators appeared at the lowest limit of adaptation to a reduced dietary intake.

89. The mission noted the general absence of therapeutic feeding centres in the country and the weakness of supplementary feeding centres, which were too often short of food supplies. Feeding centres should now be established in all governorates in order to take care of children needing therapeutic and supplementary feeding. In creating these centres and deciding on their location, account should be taken of vulnerable children already present in Iraq but also of those now in refugee camps in the Islamic Republic of Iran, who are about to be brought back.

90. A concern of the mission was the wide availability and use of feeding bottles, which were exposing children to frequent diarrhoea as sterilization was generally not carried out, dilution was inadequate and milk reconstitution undertaken with unsafe water. Several factors were reported to have increased the use of feeding bottles in the country: reported interruption of lactation in mothers exposed to psychological stress and the lack of alternate weaning or supplementary food. The mission agreed with many paediatricians met during the visit that active education of mothers and attempts to diversify weaning foods should receive high priority and lead to a drastic reduction in the distribution of feeding bottles.

91. In view of the assessed risk of an abrupt food shortage before December 1991 and a rapid deterioration of the nutritional situation, the mission recommends the creation of a national nutritional surveillance system. MCH centres could start immediately to record anthropometric and other early warning indicators.

92. In summary, in the past year the availability and quality of health care in Iraq has greatly deteriorated. The mission therefore recommends that:

(a) It is imperative that the provision of drugs, vaccines, supplies and medical, surgical, dental and diagnostic equipment from outside Iraq be substantially and quickly resumed;

(b) Provision should be made urgently to restore water and power supplies to medical, surgical and such social institutions as rehabilitation centres for the handicapped, through the procurement of pumps, generators and other needed appliances and spare parts;

(c) The fleet of vehicles for the transport of patients and of medical supplies and for ensuring liaison within the health network should be re-equipped through the renewed provision of spare parts and new ambulances and services vehicles. As certain maintenance and repair operations need the services of firms from abroad, arrangements should be made for such services to recommence;

(d) The foreign exchange required to cover the above costs would probably be an estimated \$US 500 million for a one-year period. This estimate should be revised periodically as the situation evolves. Funds of this size would have to come from the national resources of Iraq, as it is unlikely in the present world situation that international humanitarian aid would be able to meet needs of this magnitude. Mechanisms should, therefore, be put in place for Iraq to use its own funds to provide for the health care of its people;

(e) To support the nutritional needs of malnourished children and pregnant and lactating mothers, mechanisms would need to be put into place to permit the importation of necessary foodstuffs. The estimated cost for the provision of this support over a 12-month period is \$US 53 million, of which \$US 40 million is to cover aid to pregnant and lactating mothers, and \$US 13 million is to go to the emergency supplementary feeding programme for malnourished children;

(f) In the meantime, to avoid a general collapse of Iraq's health services and in view of the deteriorating food situation, urgent arrangements should be made to enable the country to use some of its own resources. For the last four months of 1991, the needs would be \$US 167 million for medical supplies and equipment and \$US 18 million for supplementary foods for mothers and children.

93. Noting that the above needs be examined in a humanitarian spirit, the mission also wished to establish that the prolonged dependency of Iraq on insufficient international aid to the health sector is contrary to health ethics. Furthermore, the principle of equity is challenged by a situation in which health care is less and less accessible to, and affordable by, all; national self-reliance in generating and deciding on the use of resources is replaced by dependency on meagre donations; and sustainability in the availability and quality of care is jeopardized by responses to emergencies that have to be made on an ad hoc basis.

C. Food sector

94. The rapidly deteriorating food supply situation has brought the Iraqi people to the brink of a severe famine. The nutritional situation of the population continues to deteriorate, with high incidence of malnutrition. Present food rations provided by the Government at subsidized prices cover about one third of the actual consumption levels in recent years. To meet their minimum requirements, people therefore have to purchase substantial quantities of food at exorbitant market prices which are beyond the reach of the majority of the population. Moreover, Iraq, which used to utilize several million workers from abroad to cope with the labour shortages, is now facing growing unemployment problems among its own population. There is a major increase in the number of destitute people who cannot be absorbed into the State support system for lack of government funds. This year's domestic food output has been substantially reduced as a result of a number of adverse factors. The outlook for the 1991/92 season is even more gloomy. Unless immediate steps are taken, output in 1991/92 will drop drastically, causing further deterioration in the already grave food supply situation.

95. The mission conducted independent market surveys in 16 out of the 18 governorates. They found that for some food items, prices had declined from their peak levels of March 1991. This was mainly due to the resumption of fuel supplies for the domestic market in early May and the arrival of the new cereal harvest on the market. However, prices for all food items remain many times higher than their corresponding levels of last year. Compared to the same time last year, current prices are higher by 48 times for wheat flour, 22 times for rice, 12 times for lentils, 21 times for sugar, 7 times for local cheese, 20 times for vegetable oil, 3 times for fish, 2 times for red meat, 4 times for eggs, 19 times for milk powder, 19 times for tea and 4 times for potatoes, while poultry meat is not available any more (see appendix I).

96. Before September 1990, the Ministry of Trade was distributing 343,000 tons of basic food commodities monthly. Supply shortages brought this figure down to 182,000 tons per month between September and December 1990, and thereafter to 135,500 tons per month. However, certain commodities such as lentils, tea and dried milk either disappeared completely from the ration as they were unavailable or were severely restricted to certain beneficiary categories (e.g. milk for children under one year of age). In May, June and July 1991, some improvements (except for tea) in the scale per person per month were recorded, mainly in the cereal ration. The nutritional value of the commodities actually available between September 1990 and July 1991 through the food rationing system (per person/per day) has fluctuated between 894 k/cal and 1,318 k/cal (see appendix II). The cost of the full monthly ration, excluding lentils and milk was, in July 1991, 10.632 Iraqi dinars per family of six, which is the average family size in Iraq. The mission was assured throughout its extensive field inquiries that the rationing system was available to all (except for areas not accessible to the government distribution network); delays in supplies were however most common in governorates further away from Baghdad.

97. The mission noted the July 1991 average wages/salaries range from 80 dinars per month for a labourer to 250 dinars for a director of a government department. At these levels, and even assuming more than one wage earner per family (not common bearing in mind extremely high post-war unemployment) it is clearly not possible for the average family to ever achieve this level of consumption. At best, families would supplement their rationing system allowances on an ad hoc basis but nowhere near the adequate nutritional intake levels. Moreover, if the ration scale were to take account of the need for fresh foods, the average family food cost per month would be 1,063.242 dinars, a 191 per cent increase over the largely limited carbohydrate diet, comprising only the basic foods.

98. Mission inquiries in the field covering most provincial capitals confirmed the above analysis and showed that whilst the government rationing system is generally supplied with basic commodities, these arrive often late in the month, forcing families to resort to the free market. The number of people seeking "destitute" status has increased considerably in every governorate. The normal ration-system beneficiaries were applying to destitute feeding centres for allocation of free food. There was evidence of disposal of personal property and jewellery to generate income for food purchases. Families interviewed claimed that to achieve an adequate nutrition level they would need to spend an average of 600 dinars per month - a figure clearly beyond the reach of most Iraqis. The recent reports published (ICRC, UNICEF, Harvard University, etc.) indicate a considerable deterioration of the nutritional status of the population; admission figures of malnutrition cases in paediatric wards of hospitals appear to be on the increase. The mission considers the above indicators as a clear warning of an impending major famine.

99. To alleviate the impact of the United Nations embargo on national food supplies, the Government implemented in late 1990 a number of incentives to boost food production. These included substantial increase in government procurement prices for cereals; for instance the procurement price for barley was increased from 280 dinars per ton in 1990 to 500 dinars in 1991; wheat price was raised from 400 dinars per ton to 700-800 dinars per ton in 1991 (depending on quality). Farmers were provided with liberal supplies of seed, diverted from the public rationing system, and the cultivation of wheat and barley crops was introduced to new areas. These measures led to a sharp increase in area planted with wheat and barley.

100. To evaluate the outcome of the 1991 cereal/food crop harvest, the mission carried out extensive field surveys in 16 governorates that normally account for some 95 per cent of the national food crop production (see appendix III). It concluded that, despite a 50 per cent increase in the area planted, this year's cereal output has been sharply reduced as a result of the breakdown of irrigation and drainage systems, acute shortage of essential inputs and disruption of farming activities due to war and civil strife. The adverse impact of these factors was further compounded by erratic and insufficient rains particularly in the main cereal-producing areas in the north where the bulk of production depends on rainfall. In several areas "black rain" in March adversely affected pollination and yields. Serious infestation with

sun pest occurred in the northern areas; with FAO assistance some 96,000 hectares were treated, but substantial infested areas could not be treated for lack of pesticides. There were also unconfirmed reports of the presence of locust larvae in some areas. Military activities had also resulted in the destruction of crops in several areas. Over 50 per cent of the farm machinery has been found to be out of service owing to shortages of spare parts, particularly tyres and batteries. In many areas, particularly in the south, transportation of farm inputs was constrained owing to the destruction of bridges during the war. As a consequence, total crop failures occurred on a substantial proportion of the areas planted, while extremely low yields were obtained from the areas harvested.

101. The mission estimates the aggregate cereal harvest in 1991 at 1.25 million tons, about a third of last year's record harvest and close to the poorest crop in 1984 (see appendix IV). Other crops, such as vegetables, oilseeds, pulses and fruit, also suffered serious losses owing to the above-mentioned factors. The livestock and poultry subsectors have been severely hurt. The poultry subsector, which produced 2 billion eggs and 250,000 tons of poultry meat in 1989, has been decimated. The livestock numbers have been virtually halved from pre-war levels of 10 million and the declining trend continues at a fast rate. Lack of feed, aggravated by the diversion of barley to food use, and unavailability of veterinary drugs have resulted in increased mortality and slaughter rates. Moreover, attractive prices across the borders have encouraged migration of cattle, particularly sheep and goats, to the neighbouring countries, mainly to Saudi Arabia and Turkey. Large flocks were also taken across the border by Iraqi refugees during the civil strife. The fisheries subsector has also suffered severe losses mainly owing to lack of feed and refrigeration facilities as a result of the breakdown of power supplies. The forest wealth of the country has also been affected owing to massive cutting of trees in many areas.

102. The outlook for the 1991/92 cropping season is even more gloomy. Whatever small stocks of fertilizers and insecticides were available were used up for the 1990/91 crops, and little supplies are now available for the coming season. Seed supplies are extremely short and for vegetables virtually non-existent. A large part of the agricultural machinery power is out of service for lack of spare parts. Irrigation difficulties continue owing to excessive load shedding in many areas, lack of spare parts for irrigation pumps and damage to water reservoirs. The livestock numbers are declining for lack of feed, vaccines and an active informal trade across the borders. The revival of the poultry production has to start from scratch. Unless immediate steps are taken, domestic food output in 1991-1992 will fall further from its already poor level, causing further deterioration in the already grave food supply situation. The mission estimates the essential rehabilitation costs for the 1991/92 cropping season at \$US 500,000 (see appendix V).

103. The mission noted that, in exceptionally good years, domestic food production in Iraq accounts for 30 to 35 per cent of total food requirements, the remainder being covered by food imports, costing over \$US 2 billion annually. Following the exceptionally poor food output inside Iraq in 1990/91