

(c) **Outside Plant Maintenance and Training Centre Construction Project (Phase II)**

This project requires a continuous implementation from Phase I.

(d) **Underwater Cable Installation Project**

A high capacity international communication network is required in future to meet the progress of Iraqi reconstruction. The capacity of satellite communication systems is limited, so a high capacity underwater cable is to be installed from Basrah to the UAE to connect to an international network such as FLAG and SEA-WE-MEA.

5.6 Iraq Housing and Urban Development Sector

5.6.1 Present Condition

(1) **Housing Sector Institutions and Housing Supply System**

(a) **Housing and Urban Planning & Management Institutions**

The Ministry of Housing & Construction (MOHC) is responsible for the housing sector from planning to implementation for the entire nation. For urban planning & management, the Baghdad Municipality and the Ministry of Public Work (MOPW) are responsible for the Baghdad City and other local municipalities respectively.

(b) **Housing Supply System**

Houses in Iraq have been supplied in four ways:

- (i) Government builds houses on government land and supplies houses directly to needy people,
- (ii) Government supplies land only and construction is done by the housing cooperatives or state companies,
- (iii) Housing land is supplied by the Government but houses are built by individuals,
- (iv) Houses are built on subdivided land, which has already been distributed.

The above four methods were used in the housing supply system under the Saddam Hussein Government. However, under the new Iraq Government, the housing supply system is likely to change drastically based on a more market-oriented mechanism and a decentralized decision making system.

(2) **High Housing Demand Due to the Rapid Population Increase**

Iraq has been experiencing a high demand for housing due to the rapid population increase in the past several decades. The population of Iraq in 1947 was only 4.8 million, but the population in 1997 had increased to 22 million people due to the high

population growth rate of 3% and above. The population in 2003 was 26.34 million as estimated by the UN.

Table 5.6.1 Population of Iraq (Historical Records: 1934-2003)

Census	Population (in 1,000)	Annual Growth Rates (%)	
1934	3,380		
1947	4,826	1934-47	2.7%
1957	6,340	1947-57	3.8%
1965	8,097	1957-65	3.1%
1970	9,440	1965-70	3.3%
1977	12,000	1970-77	3.4%
1987	16,300	1977-87	3.1%
1997	22,000	1987-97	3.0%
2003	26,340	1987-03	3.0%
2004	27,140	2003-04	3.0%
2007	29,680	2004-07	3.0%
2010	32,430	2007-10	3.0%
2012	34,390	2010-12	3.0%

Source: Iraq MOP & MOHC

Assuming a continuing high population annual growth of 3%, the total population of Iraq is expected to increase to nearly 30 million by 2007 and 34 million by the year 2012. Such a high growth of population is likely to keep a high demand for houses in the future.

(3) Rapid Urbanization and Nuclear Family Unit

Other reasons for the high demand for housing are rapid urbanization and the spreading nuclear family structure. In Iraq, just as in any other countries, urbanization and a trend to a nuclear family structure has been taking place in the past few decades. For example, the urban population in 1957 was only 40% of the total population. However, the urban population jumped to 71% by 1987 just before the first Gulf War. After the Gulf War, due to limited housing & urban development, the urbanization process has been slowed down and remained around 68% to 69%.

For the future, due to the expected change from the controlled migration policy to a more free migration policy, the urbanization process is expected to start to increase again to the pre-war period figure of 71% in a short time and to an even higher level creating a rapid increase in the housing demand.

Table 5.6.2 Urban & Rural Population in Iraq

Year	1957	1965	1977	1987	1997	2003	2004	2007	2010
Urban	2.5	4.2	7.6	11.5	15.0	17.7	18.4	20.8	23.0
Rural	3.8	3.9	4.4	4.8	7.0	8.6	8.7	8.9	9.4
Total	6.3	8.1	12.0	16.3	22.0	26.3	27.1	29.7	32.4
Urban %	40%	52%	63%	71%	68%	69%	69%	70%	71%

Source: MOP & MOHC

(4) Large Internally Displaced Population (IDP) & Refugees

According to the UN-HABITAT survey in 2001, the internally displaced people (IDP) and refugees in Iraq were over 500,000 people for the Kurdish region alone. During the Saddam Hussein government, the Kurdish people were forced out of Kirkuk region to the north and now after the latest war, some of these IDP Kurdish people have started to return to their homeland.

Another IDP problem is a result of the Iraq-Iran War in the early 1980s. Just before the Iraq-Iran war, the Iraqi Government picked up about 200,000 Iranian people who lived in Iraq and forced them out to Iranian border areas. Now these forced out Iranian people are still living in refugee camps near the Iran-Iraq border. In order to return these IDP/refugees to their homeland, the Iraqi Government and international agencies have been formulating the IDP Support Program and now implementation of the Program is starting.

(5) Limited Housing Supply for 1978-2003

Iraq has been faced with a high demand for housing due to the rapid population growth in the past several decades. However, due to three wars in the past two decades and the subsequent economic sanctions by the UN, the supply of housing has been extremely limited which created a severe shortage of housing stocks. According to the MOHC, Iraq originally planned 3.5 million units of housing for the period of 1976 to 2000, but actually only 0.46 million houses were built during the same period creating a shortage of 3.0 million houses. The current estimated housing shortage by the UN is 1.4 million units but considering the above gap between planned and actually built, the actual shortage may be much higher than the UN estimation of 1.4 million.

Table 5.6.3 Housing Supply Plan 1976 - 2000 (in 10,000)

Period	1976-80	81-85	86-90	91-95	95-2000	76- '00
Planned	20	35	62	104	137	350
Implemented	2	10	30	9	5	46
Shortage	18	25	32	95	132	304

Source: MOHC & MOP

5.6.2 Problems and Issues

(1) Crisis Level of Housing Shortage and Growing Slum Areas

Due to the high demand for housing and the limited housing supply in the past few decades, the housing shortage in Iraq is at crisis level (over 1.4 Million shortage at least). The housing shortage is not only a problem but the quality of the existing housing stock has deteriorated as well creating slum like urban areas in many cities. According to the MOHC estimate, the slum areas in Iraq are reaching nearly 30% of the entire urban areas. Iraq enjoyed relatively high standards of housing stock per population during the late 1970's. However, due to the three wars and the economic sanctions, the housing supply had been limited and improvement of housing stock was not well maintained. As a result, the problem of a severe shortage of housing stock and the nearly 30% of slum areas in Iraq has been created.

(2) Limited Affordability of Iraq Family Income for Purchase of Housing

Another serious problem related to the housing sector is the affordability of houses with the Iraq family income. The majority of Iraqi families are not able to afford a decent house due to the decline in their family income for the following reasons:

- High unemployment rate has reached to 65% to 70% of the Iraq work force now,
- Low monthly salary in Iraq which has declined to \$100 per month (Annual per capita GDP is estimated at only \$700 to \$1000),
- On the other hand, the housing prices have remained at a relatively high level (the cost of the construction of a moderate sized 150 sq meter house is at least \$50,000) due to the high import content. Only cement, bricks and tiles are domestically produced and other construction materials such as electric wire, pipes, electric appliances and furniture must be imported.

Normally the ratio of the annual family income to the cost of a house should be better than 1:5. However, in the case of Iraq, the ratio between the annual family income and the cost of a house is worse than 1:10 without including the land cost. Under such conditions only a few percent of people are able to afford a decent house. In order to solve the affordability problem, Iraq must reduce the level of unemployment and raise

the family income by jump-starting the Iraq Reconstruction Program as soon as possible.

(3) Limited Urban Development and Planning Capacity

In Iraq, the Ministry of Housing and Construction (MOHC) manages the housing sector and the urban planning & development has been the responsibility of the Ministry of Public Work (MOPW) for the local municipalities. Baghdad City is an exception and the City has its own urban planning and housing development division. Baghdad City is classified as the same level as a ministry and its administration is able to receive its own budget and implement it by itself. In the past two decades, due to limited budget and activities, most of the housing and urban development sector in Iraq reduced their capacity in terms of quality and quantity. In order to revive the housing and urban management sector in Iraq, capacity building of the whole sector is badly needed immediately.

(4) Weak Housing Sector Financing System

The housing sector financing in Iraq is also very weak. At the moment, due to the limited availability of funds, the National Estate Bank (NEB), which is the only financing institution for the housing sector, is not functioning at all. In order to revitalize the housing sector and build to satisfy the 1.4 million housing shortage, modernization and expansion of the NEB is essential.

(5) Breaking Down of Housing Related Industries

Due to the limited housing sector activities in the past two decades, the housing related industry also weakened drastically. For example, one of the most important construction materials in Iraq is cement and the cement production in Iraq has been declining following the level of housing construction as shown in Table 5.6.4.

Table 5.6.4 Housing Construction & Cement Production (1989 – 2002)

Year	89	90	91	92	93	94	95	96	97	98	99	2000	01	02
Cement	933	777	106	235	355	298	150	83	99	108	118	329	594	773
Housing	16	14	5.0	6.2	4.4	3.1	1.1	0.3	0.9	1.5	2.7	5.4	14	16

Source: UN-HABITAT Impact Assessment of MOU Items on the Cement Industry in Iraq. (Cement in million tons and Housing in million square meters)

In 1989, the housing construction was 16 million square meters and the cement production was 9.33 million tons but as the housing construction declined to 0.3 million square meters in 1996, the production of cement declined to the lowest level of only 0.83 million tons. As the housing construction started to increase due to the Oil for Food (OFF) program from 1997, the production of cement started to increase as

well to 7.73 million tons by 2002. However, the cement production of 7.74 million tons in 2002 was only about one third of the cement production capacity of 18 million tons and a severe shortage of cement was created in 2003.

(6) **Limited Human Resources and Information related to the Housing & Urban Management Sector**

Due to the housing sector problems and limited activities, workers and experts in the housing and urban development sector have either left for overseas or other sectors in the past few decades. All of the government agencies such as MOHC, MOPW and Baghdad City, which engages directly in housing & urban development, have lost many experts in the past two decades. Also, the knowledge of the experts has been left behind advances elsewhere due to the economic sanctions, which limited the flow of information and technology related to the housing sector. It is important to up-grade their capacity and skill immediately before starting a full-scale reconstruction.

5.6.3 Proposed Housing & Urban Development Plans by the World Bank/UN and Iraqi Government

(1) **Proposed Housing/Urban Management Sector Projects by the WB/UN, Iraq Reconstruction Needs Assessment Study**

Understanding the various and severe problems for the housing and urban management sector, the World Bank/United Nations Joint Iraq Reconstruction Needs Study team recommended the following projects for the 2004-07 period as shown in Table 5.6.5 and Tables 5.6.6/7:

Table 5.6.5 WB/UN Proposed Housing and Urban Development Projects

(in US\$ million)

Projects	2004	2005—2007	Total
1. Institutional Capacity Building	4.0	6.0	10.0
2. Housing for IDP & Refugees	405.0	940.0	1,345.0
3. Low Income Housing Supply	13.0	45.0	58.0
4. Expansion & Modernization of Housing Financing System	3.0	2.0	5.0
Grand Total	425.0	993.0	1,418.0

Source: UN/WB Joint Iraq Needs Assessment October 2003

For the urban planning & development area, the WB/UN study team recommended the following policy and projects as shown in Table 5.6.6 and Table 5.6.7.

Table 5.6.6 WB/UN Proposed Housing & Urban Development for Baghdad City

(in US\$ million)

Projects	2004	2005—2007	Total
1. Rehabilitation & Reconstruction	9.00	27.00	36.00
2. Capacity Building	4.00	6.00	10.00
3. Initiate Sector Reform	8.00	21.00	29.00
4. Initiate 10 Year Investment Program & Up-Date Master Plan	16.15	46.45	58.60
Grand Total	37.15	100.45	137.60

Source: UN/WB Joint Iraq Needs Assessment October 2003

Table 5.6.7 WB/UN Proposed Housing & Urban Development for Local Municipalities

(in US\$ million)

Projects	2004	2005—2007	Total
1. Rehabilitation & Reconstruction	12.0	36.0	48.0
2. Institution Capacity Building	6.0	9.0	15.0
3. Initiate Sector Reform	20.0	60.0	80.0
4. Initiate 10 Year Investment Program & Up-Date Master Plan	35.3	102.9	138.2
Total	79.3	216.9	296.2

Source: UN/WB Joint Iraq Needs Assessment October 2003

(2) Projects Proposed by the Ministry of Housing & Construction for 2004-07

The Ministry of Housing & Construction (MOHC) prepared a “Strategic Plan for Housing Program” for the period 2004 to 2007, which was officially approved in February 2004. The total cost of the Strategic Plan is US\$2,165.5 million and is divided into seven areas as shown below:

- Refugees & IDP Housing Program
- Development of Slum Area & Sub-standard Housing Program
- Low-Income Housing Development Program
- Rehabilitation of War Damaged Houses & Buildings
- Development of Rural Housing Program
- Development of Housing Loan Banks & Associations
- Capacity Building of the Sector

Table 5.6.8 Proposed Projects by MOHC for 2004-2007 (in \$ Million)

Name	Objective	Number	Cost	Other Items
1. Refugees and IDP	Providing houses for IPD /Refugee	10,000 units 0.5 million people	Total: \$627 Housing only: \$455	
2. Development of Slum Areas	Improving Slum areas	8 projects 16,000 people	\$200	\$25 each project
3. Low Income Housing Program	Assisting low income groups	40 locations 500 units for each site	\$800	\$20 each
4. Rehabilitation of War damaged houses & buildings	Rebuilding war damaged houses & Buildings	4,000 units (Estimated)	\$100	\$0.02 each
5. Rural Area Housing Program	Assisting rural poor people		\$98.5	
6. Revival of the Housing Loan Banks & Associations	Reviving the Iraq Estate Bank	Assisting building of 1.4 million units for housing shortage.	\$1,000 total \$250 for MHAC	
7. Capacity Building (Training & IT)	Capacity Building of Housing & Urban Management sector	MOHC, MOPW and Baghdad City experts are main target.	\$50	Immediate action recommended
Total			\$2,165.5	

Source: MOHC State Commission for Housing

(3) Proposed Housing & Urban Development Projects by Baghdad City

Baghdad municipality has proposed its own housing and urban management projects. Since nearly one third of the entire population of Iraq is living in Baghdad City and the surrounding area and housing and urban infrastructure services are in a critical situation, it is important to take necessary action to improve the poor housing and urban infrastructure. Baghdad Municipality is currently trying to meet the urgent needs of the basic infrastructure such as water supply, sewerage and the power sector. However, due to over 20 years of neglect and limited investment in housing and its infrastructure, and as the Master Plan for Baghdad has not been updated, it is important to improve all of these sectors and at the same time up-date the Master Plan to provide coordination among competing sectors. Baghdad Municipality is considering the following projects in the housing and urban management sector. (1) Slum Area Improvement project: Since Baghdad City is faced with large slum areas, improvement of these proposed slum areas is urgently needed. (2) Low Income Housing Project: The Baghdad area is just like many other cities where the shortage of housing is at crisis level and seven immediate low income housing projects are planned. (3) Up-Dating of the Baghdad Master Plan is also an urgent matter for coordinating and finalizing the sector targets and prioritizing of each sector investment.

Table 5.6.9 Housing & Urban Development Projects for Baghdad Municipality

Project	Location	Cost & Actions needed
1. Slum Areas Improvement Project	Sador City, Admiya and other 2 slum areas	High Priority project and included in the MOHC plan
2. Low Income Housing Project	7 Low Income housing sites	Also high priority project and preparations for these projects are already made
3. Up-Dating of Master Plan and FS Study for Key Infrastructure	Cover whole Baghdad and Surrounding Greater Baghdad & key sector covers water, sewerage, power, transport and public facilities	It is urgent project to coordinate key infrastructure projects and future economic plans in the Capital region.

Source: Baghdad Municipality

5.6.4 Projects Proposed for Japanese Assistance

(1) Process and Selection for Projects for Japanese Assistance

In Iraq the housing and urban sector management is a very important item and people's needs are high due to severe summer weather which reaches up to 50 degrees C. The WB/UN Iraq Reconstruction Needs Assessment Study also identified nearly US\$3.0 billion worth of projects for the sector that were recommended for immediate implementation with a high priority. However, the interest of Japanese private companies in the housing and urban management sector is relatively limited due to the fact that the housing sector is normally implemented by small local companies except in large scale housing projects. The Japanese Government prepared a list of projects proposed by the Japanese private sector (mainly trading, construction and some manufacturing companies). However, there is no project in the housing and urban management sector in the 156 projects proposed by the Japanese private companies.

In order to assess and identify the appropriate projects for Japanese assistance, we decided on the following process. First, review the projects proposed by the WB/UN needs assessment study and also collect available information gathered by the UN agencies located in Amman. Second, try to obtain the projects proposed by the Iraq Government. Also, direct discussions with Iraqi Government officials in Amman and using internet communications were arranged as much as possible.

We also used the local consultants assigned to this study for contacting the Iraq Government officials. We asked the Iraqi government officials to verify the proposed projects and provide comments on our proposed projects. Fortunately, since the consultant had met and known most of the Iraqi counterparts in Baghdad during the last years' WB/UN Study Team visits, the Iraqi counterparts responded and provided their views and comments on our proposed projects. The final recommended projects

for the housing and urban management sector have already been discussed with the Iraqi counterparts and received their approval.

(2) Key Items for Selection of Projects and Policy

The Iraq Reconstruction study was in many ways different from the normal case. The special conditions applying to the Iraqi study are shown below:

Special conditions of the Iraqi Reconstruction Assistance Program

- (i) Due to the poor security conditions, consultants are not allowed to visit Iraq,
- (ii) Consultants are only allowed to visit nearby countries such as Jordan and Kuwait,
- (iii) The Iraqi Government is not formally established yet and the occupied forces (CPA) are the main decision makers at the moment,
- (iv) Information for reconstruction projects is limited.

Under these difficult conditions, we used the following 10 criteria for selecting suitable projects for Japanese Assistance:

- (v) Projects which are listed by the Iraqi Government for 2004-2007 and also given priority in the WB/UN Needs Assessment reports,
- (vi) Projects that will not conflict with other major donors such as CPA, US AID, WB and UN,
- (vii) Projects with which the Japanese ODA agencies (JICA and JBIC) and private sector are relatively familiar and experienced,
- (viii) Projects which have been experienced by the Japanese ODA agencies and private sector in the past,
- (ix) Projects which have characteristics for strategic importance for Japan in the future,
- (x) For JBIC, loan projects which are suitable for JBIC rules and regulations,
- (xi) For JICA, projects which are suitable for JICA rules and regulations,
- (xii) For the priority regions, Baghdad and the Southern region have been given special attention by the JICA study team,
- (xiii) Since the Iraqi reconstruction program requires quick implementation, special attention has been given to urgency of projects,
- (xiv) Samawa where the Japanese Self Defense Force has been staying has been given special attention.

For project selection, the above 10 criteria have been considered and tentative projects were selected. These tentative projects were taken to the Iraqi government officials by

the local consultants and received their comments and suggestions. The final projects recommended for this report have taken these comments and suggestions into account.

(3) Selected Projects for Japanese Assistance

(a) Capacity Building for the Housing & Urban Management Related Sector

Since the housing and urban management related agencies have not received much training and equipment in the past two decades, capacity building of these agencies is needed urgently as recommended by the WB/UN Needs Assessment Study team.

We recommend the following capacity building project:

- (i) Select 30 to 40 Iraqi experts who are working in the MOHC, MOPW and Baghdad Municipalities and other local municipalities,
- (ii) Train these experts starting in Amman, as a preferred third country training centre, for three to four weeks,
- (iii) For the final two weeks or so, these trainees can be invited to Japan visiting several cities in Japan and experiencing how housing and urban planning and management are conducted in Japan.

Since this type of capacity building project is able to start even under the current poor security situation, this capacity building project should be implemented immediately.

(b) Review and Up-Dating of Baghdad Master Plan including preparation of key infrastructure projects

In order to prepare for the housing & urban infrastructure projects in and around Baghdad, a review and up-date of the Baghdad Master Plan is essential. The Iraqis have been working on a Master Plan review from 1997 to 2003 using Iraqi local specialists. However, the Iraqi review work has been limited to only preparatory work and actual up-dating of the Master Plan has not been conducted yet. Japan may be able to assist Iraq by funding the Master Plan Review work study.

(c) Refugees and IDP Support Program (Through International Agencies)

According to the MOHC, there are over 500,000 internally displaced people who are now located in Iraq and neighboring countries (Kurdish and Iranian people) and an IDP Housing Program is urgently needed. This IDP program is likely to be implemented by UN agencies (such as UN-HABITAT and IMO) and is not suitable for handling by bilateral donors like JICA or JBIC because the Japanese agencies do not have much experience in these IDP projects. Therefore, we will not identify a specific project at this time in the IDP area. However, as the IDP program becomes operational in the future and Japan is invited to participate in the IDP

Program, Japan may be able to support in an area of training or facilities and equipment supply in the future through the international agencies. Therefore, it is important to keep in touch with key international agencies working in the IDP Program such as IMO, UN-HABITAT and UNISEF.

(d) Low-Income Housing Support Program

The low-income housing plan by the MOHC is to build 20,000 houses covering 100,000 people during the period 2004 to 2007. Already the site selection and design for 40 low-income housing projects have been completed and Japan may be able to undertake some of the projects with a budget of \$100 million during the 2005-2007 period. Our tentative proposal is to support at least one project in the Baghdad area and several low income housing projects in the other regions: a few in the south (say in Samawa, Basrah or Nissan) and a few in the central region (say in Najaf or Kaldara). As already noted by the WB/UN Study, the housing projects are not only providing badly needed houses for the low income groups but the projects are likely to create substantial new jobs which will support significantly the Iraq Reconstruction process. This housing project should be a candidate for the Yen loan project except for Samawa.

(e) Samawa Low-Income Housing Project

During the discussion with the MOHC in Amman, a Samawa low-income housing project was requested as an urgent project to be implemented separately from the other housing projects. The project is construction of 500 units of low income houses in the northern area of Samawa City. The approvals from the Samawa City Mayor and the Muthana Provincial Governor were obtained and necessary coordination with the MOHC and MOP were also completed. Since Samawa is a special city for Japan as the Japanese Self Defense Force is staying at Samawa, this project may be considered seriously as one of the Japanese projects. Regarding the implementation, according to the MOHC, local construction companies are capable for construction of low income houses since they have been constructing these low income houses in the past several years under the Oil for Food Program. If Japan is assisting this project, the Japanese Government may contract a Japanese Company and local construction companies can be subcontracted. The expected cost of this project is \$25 million based on the MOHC estimate.

(f) Slum Area Rehabilitation Program

Exemplified by Sador City in Baghdad, there are many areas where the housing condition and supporting infrastructure has been deteriorating or lacking from the beginning in Iraq and they have become slum areas. In order to improve the poor

housing slum areas (one estimate indicate nearly 30% of the entire urban areas are in this category in Iraq), the Ministry of Housing & Construction (MOHC) has started the Slum Area Rehabilitation Program. According to the MOHC, the following 8 projects are currently proposed:

- Hay Trariq
- Al-Ma'Amil
- Al-Kifah (1)
- Al-Kadamiyah
- Al-Adamiyah
- Al-Rahmaniyah
- Al-Shawaka
- Al-Dahhana

This type of program seems to be suitable for bilateral agency projects such as JBIC Yen Loans. So far only 8 projects, which are all in Baghdad, have been prepared but there are many other municipalities which are faced with the same slum problem. Therefore, we are proposing the following package project covering Baghdad and other cities:

- (i) Sudor City: Select the worst area and try to improve the basic urban infrastructure such as internal roads, drainage/sewerage, water, parks and community services such as schools, clinics, and daycare centers.
- (ii) Southern Province: select two or three poor urban areas, tentatively including one area from Samawa due to its special attention needed by Japan, and Basrah due to it having the most neglected urban area in Iraq.

The estimated total cost of projects is around \$200 million and Japan may finance half of the cost (\$100 million).

(g) Housing Loan Expansion Program for Iraq Estate Bank (IEB)

According to the UN/WB need assessment study report, the housing loan bank must be revitalized to assist the middle income class in purchasing houses by providing affordable housing loans. The estimated total assistance needed is \$1,000 million during 2004-2007. This upgrading and expansion of the Housing Loan Bank may be important for the housing sector combined with implementation of housing projects together. We are therefore proposing the following housing loan, bank assistance program by JBIC:

- (i) Two Step Housing Loan Expansion Project: JBIC will provide at least \$100 million housing loan to the Iraq Housing Loan Bank and the Bank will make housing loans to individual house buyers or housing developers.
- (ii) Needed Action: A joint study of the housing loan system with UNDP/Habitat or WB for preparation of the project during 2004/5.

Table 5.6.10 Summary of Proposed Projects for Housing & Urban Development Sector

Name of Project	Ministry & Location	Estimated Budget
1. Capacity Building for Urban Planning and Management	All Key Municipality plus AAA, MOPW & MOPW. Focusing in IT & GIS	\$ 0.5 Million
2. Review & Up-Dating of Baghdad Master Plan	Up-date the Master Plan and finalize the basic infrastructure projects for the medium term (2010: Baghdad City	\$ 5 million
3. Refugees & IDP Housing Support Program	MOHC and UN Agencies such as IMO and UN-HABITAT	\$10 million
4. Low Income Housing Development Project	Assisting MOHC Low Income Housing Plan & Local Municipalities	\$ 100 Million
5. Samawa City Urban Development Projects	Samawa Province & MOHC 500 units of low income housing, plan is already prepared.	\$25 Million
6. Poor Urban Area (Slum) Up-grading Project	Integrated Urban Slum Improvement: Baghdad City & MOHC at 40 locations	\$ 100 Million
7. Housing Loan Program (Assisting IEB)	Assisting the Iraq Estate Bank (IEB): 2 Step Loan	\$200 Million
Total 7 projects		\$ 440.5 Million

These 7 proposed projects have been selected from the WB/UN Iraq Reconstruction Needs Study and the Iraqi Government Strategy Plan for the period 2004-2007. Also, these projects have been discussed with and received comments from the Iraqi Government officials. For a final agreement between Japan and Iraq, further discussions and coordination are needed. Also, especially for large loan projects, further preparation work for each project is needed.

5.7 Healthcare

5.7.1 Current Circumstances and Topics

Through the 1980s, the structure of Iraq's healthcare system resembled that of the developed nations. The nation's medical technology was also maintained at a high level, rather than that typical of a developing country. The infant mortality rate, a PHC

(Primary Health Care) indicator, improved from 80/1000 births in 1979 to 40/1000 in 1989. The under 5 mortality rate (U5MR) improved from 120 (1979) to 60 (1989).

However, the worsening of sanitary conditions since the implementation of economic sanctions has led to increases in the incidence rates of infectious diseases, in turn leading to the necessity of measures to combat infectious diseases. Major factors contributing to this situation include the fact that per-capita health expenditure decreased 90% during the 1990s, the drain of superior doctors to overseas, the overall exhaustion of the medical system and the centralization of authority in the medical system, among others. As a result, infant mortality rates, under-five mortality rates, and other indicators worsened to at least double their prior values in central and southern Iraq (reference: CY2000 IMR, 103). Twenty percent of the nation's population now suffers from chronic malnutrition, and 60% of the population relies on distribution of foodstuffs from the WFP and the CPA.

The WHO has defined the following problems in order to enable improvement of the environment described above: 1) inadequate healthcare policies since the imposition of economic sanctions; 2) insufficient budgetary measures; 3) deterioration of medical facilities and equipment and supplies during the period of economic sanctions; and 4) worsening of the technical skills of medical staff. It must be noted that reconstruction plans for Iraq's healthcare sector concern not reconstruction from direct war damage but reconstruction from an environment that was exhausted under economic sanctions. In other words, the essential problems in Iraq's healthcare sector had already arisen before the war. This report covers the current status of Iraq's healthcare sector based on this recognition.

(1) Healthcare policies:

Because Iraq's medical system is hospital-centered, its preventive medicine and PHC efforts are less advanced. Although a referral system exists, it is not functional. Currently, construction of healthcare policies has begun under the support of international organizations, and a committee for that purpose has begun operating.

Medical insurance fund:

The MOH is considering the adoption of health insurance. International organizations have indicated a policy of establishing a medical insurance fund in cooperation with the MOH, using as guidelines the National Health Account put together by the WHO in 2003.

Patient charge system (Co-payment system):

With regard to medical expenses, although examination and treatment were free of charge, patients were already being charged at some private hospitals and for treatment using advanced medical equipment. Future plans call for construction of a patient charge system as USAID and other international organizations provide support to the MOH.

Privatization:

There are no plans for large-scale privatization of medical services, including advanced care. There are already 73 private hospitals in existence, and these are conducting examination and treatment activities. Plans call for advancing privatization with regard to medical-related industries (such as the medical-oxygen manufacturing and clinical examination industries).

(2) Medical system:

Although a referral system exists, it is not sufficiently functional because primary-care facilities are inadequate. USAID, the WHO, and UNICEF have pointed out improvement of this situation as one of the most important needs, and adoption of such a project is being concentrated in the Primary Health Centers (PHCs). In addition to facility improvements, in the future educating citizens with regard to the referral system will also be necessary.

(3) Medical facilities, medical equipment and supplies:

According to a 1999 report by the Iraqi Ministry of Health, nationwide there are 1447 medical facilities, 160 hospitals with medical facilities for secondary treatment or higher levels of treatment, and 1285 health centers, which are primary-care facilities. According to the report, the total number of beds is 26,961. Table 5.7.1 shows a list of major hospitals and numbers of beds. Spatial distribution of hospital beds is overly concentrated in the cities. Baghdad, where 29% of the country's population lives, has 37% of the country's hospital beds, 42% of its medical facilities, and 38% of its medical assistance staff. Since these circumstances need to be improved, the spread of PHCs to provincial regions has begun, with the cooperation of NGOs and international organizations.

(4) Medical staff:

The WHO has reported that, when the healthcare sector is viewed from a human-resources perspective, numbers of doctors and their spatial distribution are not poor. However, there have also been reports that distribution of superior doctors is

concentrated in urban areas (Baghdad and Basrah) and that it is difficult to get medical staff in provincial areas. Nationwide, the average number of doctors per 10,000 population was reported to be 5.3 based on 2002 data. However, the following problems have arisen: inadequacy of primary care and an insufficient absolute number of nurses. Although in surrounding countries there are 3 – 6 nurses working with each doctor, statistics show an average of one nurse per doctor in Iraq. This figure indicates that at some hospitals there is not even one nurse per doctor. In addition, nurse training is insufficient, with one-third of nurses not even having received high-school-level education. Under current circumstances, the nurse training system is not functioning efficiently.

Problem 1: Doctors do not get new medical information and medical technologies. Since Iraq's doctors had been isolated from international society for 10 – 15 years, they lost many chances to be introduced to new technologies and knowledge.

Problem 2: PHC medical staff inadequacies

The medical system has changed with the passage of time. Today, the importance of preventive medical care has been recognized and the spread of family medicine has also become a topic of discussion. Although Iraq's medical system must shift from a hospital-centralized system to a distributed one, since Iraqi doctors have tended not to emphasize primary care, they lack both knowledge and experience for PHCs. As a result, PHCs are not fully functional, a fact that has become a factor in decreasing the functionality of the referral system.

Problem 3: Nursing inadequacies

Until now, the technical level of nurses working in Iraq has clearly not been high. Although the root cause has been inadequacies in the country's educational system, this situation has also resulted from too easily shifting the burden to foreign nurses. Since the Persian Gulf War, nurses that had come to Iraq from other countries have returned home, leading to constant nursing inadequacies in terms of both quantity and quality. In addition, restoring the status of nursing staff is a vital topic. A review of the system whereby two government ministries (the MOH and the MOHE) are involved in nursing services is also required. Data concerning nursing staff is shown in Tables 5.7.3 and 5.7.4.

Problem 4: Inadequate hospital administration and management capabilities

A hospital management perspective is lacking, leading to failures of efficient operation

and cost administration. MOH personnel require training in hospital management and medical system management.

(5) Human Resource Development:

Existing nurse training institutions comprise 17 schools of medicine, seven schools of pharmaceutical sciences, six schools of dentistry, and three junior nursing colleges, in addition to three technical institutes that provide four-year courses in medical technician training, seven clinical laboratory technical schools, and 92 nursing schools.

Included in the conference in which international organizations working in Iraq's healthcare sector participated were common agendas concerning educational-system reform. One of these concerns nursing-staff training and the others concern retraining doctors and preparation of training facilities for medical staff.

Agenda 1: Nursing-staff and midwife training

Fundamental reforms are planned for nursing education. Already, discussions have been held between the Ministry of Health (MOH), the Iraqi Nursing Association (INA), the World Health Organization (WHO), the Coalition Provisional Authority (CPA), and the International Medical Corps (IMC). Review will begin with the job regulations of nursing staff, and the nursing system and nurse training system will undergo dramatic reforms. In addition, renovations and new construction are planned at five nursing colleges (Baghdad, Erbil, Mosul, Basrah , and New Baghdad). Nurses are categorized into two levels: technical nurses and professional nurses. A training system similar to that for nurses has been proposed for midwives as well. The reconstruction concept is covered in detail in the "National strategy and Plan of Action for Nursing and Midwifery Development in Iraq 2003-2008, August 2003."

Agenda 2: Doctor retraining

Because numerous restrictions were in place on obtaining the latest medical-related information beginning with the implementation of economic sanctions, it has become necessary to establish a place for retraining of doctors. In addition, the requests made by the MOH to the survey group also included requests concerning support for an educational program for doctors. Cooperation similar to the Japan-Egypt-Iraq Joint Cooperation Reconstruction and Development of Health Sector in Iraq project currently underway is anticipated.

Agenda 3: Preparation of educational facilities

This plan calls for the establishment of nursing schools and schools for training medical technicians on the grounds of training hospitals. Although a practical proposal has not yet been made, a direction has been indicated.

5.7.2 Aid Activities of Other Donors, NGOs, and Other Parties

Each aid group is aiming to conduct its activities efficiently, exchanging information so that aid projects will not overlap. Although it is anticipated that the CPA will serve as coordinator, it cannot necessarily be said that all efforts are functioning efficiently. Capacity building for Iraq's Ministry of Planning is anticipated.

(1) UN:

"A Strategy for Assistance to Iraq" organizes and covers the United Nations' approach to reconstruction aid. The final goal is construction of a new, efficient medical system based on PHC and spreading preventive medicine. In accordance with the Millennium Development Goals, objectives of the reconstruction program include reducing by half the U5MR (under 5 mortality rate), a 15% improvement in the maternal mortality rate, and improving the rate of PHC accessibility, among other goals. International organizations working to achieve these goals are the WHO, UNICEF, the UNFPA, and the World Bank.

The UN's efforts in FY 2004 are as follows:

- 1) Targeted technical and financial assistance for the control of communicable and non-communicable diseases, including support for the continued development of an enhanced disease surveillance system. Up-graded telecommunications equipment and technical assistance for a health information system within MOH,
- 2) Support to the logistics system and distribution of the country's essential medical supplies, including limited local procurement, as deemed possible, of essential pharmaceuticals, reproductive health commodities, and vaccines,
- 3) Limited physical rehabilitation and construction of essential health infrastructures in the areas of poor access including Primary Health Care Centers, the Public Health Laboratory network, selected hospitals and specialist clinics, and local production facilities. This will also include provision of basic equipment required for these rehabilitated improved facilities,
- 4) Provision of educational programs for health care professionals, including nurses, family physicians, and health care managers,
- 5) Logistical support and technical assistance to enhance maternal and child health, emergency obstetric services with refresher courses for existing staff and improving the referral system with adequate communication equipment,

as well as ambulance capability,

- 6) Improving the nutritional status by providing technical and logistical support to food safety laboratories supplementary feeding, and vitamin mineral and micronutrient supplementation to vulnerable groups. Provide technical and material support for micronutrient fortification nationwide. Continue to support the school feeding program,
- 7) Health promotion / disease prevention programs and activities for health service providers and the community with emphasis on vulnerable groups,
- 8) Provision of technical assistance for the development of mental health and psycho-social support services at the primary health care level,
- 9) Rehabilitation of blood laboratories and provision of technical assistance to ensure blood safety and decrease the spread of hepatitis and HIV/AIDS,
- 10) Enhancing reproductive health services, supplies, education and information for health providers and consumers,
- 11) Provide access to specialized health care inside and outside the country through MEDEVAC for cases that meet the set criteria.

In November 2003, the World Bank and the UN group issued their cooperative "Joint Iraq Needs Assessment Working Paper." This working paper points out that deterioration of the health infrastructure represented by hospitals is severe and that looting since April 2003 has decreased the functionality of hospitals. The report indicates the following urgent objectives (2004) and midterm objectives (through 2007):

Urgent objectives (2004):

- (a) Restore effective control and ensure stewardship over the health care system
- (b) Secure effective implementation of public health programs and interventions
- (c) Provide equitable access to effective health care, taking services as close to the client as possible, and with the full involvement of community groups
- (d) Increase focus on improving public health, with particular attention to women, children and other vulnerable groups
- (e) Address imbalances in the distribution and skill-mix of health professionals
- (f) Rehabilitate essential infrastructure and health services to render them more responsive to priority needs of the Iraqi population
- (g) Develop a national health plan, with focus on the ten areas identified in recent stakeholder consultations.

Midterm objectives (2005 – 2007):

- (a) Preparing a Master Plan for Iraq's healthcare sector that takes into account medical needs and the capacities of existing facilities
- (b) Proposing in the master plan scenarios for a shift of centralized MOH functions to a regionally decentralized model. Also, preparing the groundwork for development of healthcare activities conducted through cooperation between the MOH and provincial society.

(2) USAID:

Since April 2003, USAID has worked in cooperation with the CPA, the MOH, the WHO, UNICEF, and others in reconstruction of the healthcare sector. Although through March 2004 formation of proposals and other activities had proceeded centered on the CPA, plans from now on are centered on aid for primary care from USAID. A vaccine program is also progressing.

However, since capacity building in this sector had not progressed, the Iraq Health Systems Strengthening (IHSS) Project, which focuses on improving PHC services, was proposed and was being implemented together with the MOH. The term for this project was May 2003 – April 2004, and its primary objectives were: the consideration of a midterm plan for the healthcare sector (strengthening the medical system), widening the provision of healthcare and medical services (spreading services), and restoring the functionality of medical facilities (provision of small-scale aid funds).

(a) Strengthening the medical system:

Proposals included setting up ten working groups within the MOH and making preparations for proceeding with the decentralization of authority in the healthcare sector, with the objective of achieving rapid improvement in this sector. In particular, the project was to make proposals concerning organizational changes and PHC administration, which had not been addressed previously. At the same time, the following projects were to be implemented:

- Preparing a health information system
- Separating procurement and distribution of pharmaceuticals from the MOH functions
- Preparing basic PHC medical equipment and supplies for 600 facilities
- Constructing a medical equipment and supply database.

In addition, the "Review of Potential Interventions to Reduce Child Mortality in Iraq" was issued in November 2003. This report emphasized the importance of

maternity medicine, and this was designated a vital field subject for aid.

(b) Spreading services:

Proposing means of strengthening the referral system, emergency medicine, and obstetrics and gynecology, preparing emergency rooms and medical equipment and supplies for obstetrics and gynecology at 21 hospitals, and attempting to improve the related referral system through training of medical staff.

- Strengthening PHC functions
- Spreading childcare education
- Monitoring and assessment of PHC facilities and medical equipment and supplies

(c) Provision of small-scale aid funds:

Providing the small-scale aid required for the restoration of regional medical services. Training programs for personnel could also be implemented under this category.

(3) CPA:

Until the establishment of the provisional authority in April 2003, reconstruction planning developed in a manner centered on the CPA. A funding plan for reconstruction aid was indicated in Section 2207. (Table 5.7.1 indicates the distribution of funds in the healthcare sector.)

1) Hospital, clinic improvement:

Projects for construction of fifteen new maternity hospitals and new PHCs

2) Equipment procurement:

A project involving conducting an emergency survey, confirming that more than 4000 pieces of medical equipment and supplies needed to be replaced, and replacing these. Overall, USD 300 million will be invested. Of this figure, USD 258 million will cover costs for procurement of equipment and supplies and the remaining USD 42 million will cover training costs for the personnel in charge

3) Basrah pediatric facility:

The necessity of investment in a pediatric facility and maternity hospital in the Basrah region has been recognized. Preparation of a maternity hospital in Basrah will result in the construction of a core facility for maternity medicine in southern Iraq. A total cost of USD 100 million is estimated for construction of the hospital. USAID will cover half of this cost, and plans call for the remainder to be covered by private-sector sources of funds.

Table 5.7.1 The CPA's Reconstruction Funding Plan

	CPA	1stQ	2ndQ	3rdQ	4 th Q	2005	TTL	Agency
Hospital, Clinic Improvement	443	0	175	150	118	0	443	U.S. Agency CPA, USAID
Equipment Procurement	300	0	105	75	55	65	300	Army, USAID
Pediatric Facility In Basrah	50	50	0	0	0	0	50	USAID

Source: CPA

Unit: Million USD

(4) CARE:

During and after the war, CARE has supplied pharmaceuticals and supplies, ensured supplies of drinking water, supported medical staff, provided food aid to maternity hospitals, and conducted other aid activities. In addition, CARE has reported the results of its assessment of 28 hospitals in Baghdad after the war (2003). The report notes that only Yarmouk Hospital had sustained direct missile damage and that 28 hospitals are operational, and it also points out related issues.

These issues include inadequate absolute quantities of pharmaceuticals, insufficient electrical power, insufficient water supply, insufficient supplies of medical oxygen, insufficient food supply (nutritional supplements) for patients both before and after the war, worsening work environments for medical staff, low and unpaid wages, and damage from looting both during and after the war. In addition, the report indicated CARE's plan to provide aid to the Likaa Maternity Hospital independently.

5.7.3 Causes of Obstacles to Reconstruction and Development Topics

Fundamental aid concepts in this sector are indicated in the Ministry of Health Institutional Capacity Building Program (MoHCBP) put together by USAID, with a target date of September 2006. As of March 2004, this was the only publicly released development plan for Iraq's healthcare sector. The final goal is decentralization of authority in the healthcare sector to the regions and reconstruction of a referral system through PHC reconstruction.

The four primary topics covered in this plan are as follows:

- (i) Health policy and systems: strengthening support to the MOH
- (ii) Technical and operative support to the MOH to deliver maternal and child health services

- (iii) Strengthening the nursing profession
- (iv) Small grant program

With a focus on cooperation and symbiosis with other donor nations and international organizations, Japan's concept of aid for Iraq's healthcare sector should be considered from the four perspectives of people, things, money, and information.

People:

It has already been reported that the number of doctors is insufficient. Since doctors who have been exposed to the latest medical technology are few, training in neighboring countries is necessary. It would be very meaningful to implement training in other countries while obtaining the cooperation of surrounding countries. Concerning medical staff as well, with regard to nurses and midwives, two fields that had been relying on personnel from overseas, the nursing system and nurse training must be reviewed fundamentally and consideration must be given to how to fill the gap between supply and demand for human resources.

Things:

Nationwide, Iraq has more than 250 hospitals and more than 1200 PHCs (examination and treatment centers). Since the implementation of economic sanctions, budgetary allocations for the healthcare sector decreased massively. As a result, maintenance and renewal of medical equipment and supplies was almost nonexistent. For this reason, most medical facilities have been exhausted and are in advanced states of deterioration. With regard to reconstruction aid, initial aid has been shifted to use for repairing medical facilities. The problem is the extent to which reconstruction aid is to be defined. In determining the scale of Iraq's healthcare and medical system, it is necessary to survey medical needs. It is anticipated that plans will be formulated based on these needs after confirming whether there is any surplus of medical facilities.

Money:

It is necessary to consider cash flow in the medical system from a long-term perspective, centered on international organizations. It is anticipated that as the government's budget is normalized and budgetary allocation to the healthcare sector is rationalized, a national healthcare fund will be established and a social insurance system will be adopted over the course of these processes. In addition, it is desirable that the healthcare fund be operated independently from the government, and it is also expected that salaries of medical staff will be paid from this fund.

The next matter concerns adoption of a patient charge (Co-payment) system. At Iraq's stage of development, adoption of a patient charge system serves more as protection

against citizens' use of unnecessary medical services than for the purpose of attaining a source of funds. In order to provide medical services to citizens who truly need such services, it is necessary to use the utmost care in adoption of a patient charge system and to take care to ensure that donor countries are not misled. According to current estimates calculated by the UN and the World Bank, in 2004 USD 1.5 billion will be required for public-sector health expenditures. This figure is equivalent to USD 56 per capita.

Information:

In order to construct future strategies in the healthcare sector, it is necessary to construct a healthcare and medical information database from the current stage. Construction of such a database will have the benefits of contributing to the formulation of regional medical strategies and strategies for prevention of communicable diseases and to improving the efficiency of distribution of pharmaceuticals and vaccines, as well as making adoption of computerized patient records easier.

Although it appears the MOH is considering construction of an HIC system including use of satellite communication, it is first necessary to provide a system that matches the shape of Iraq's healthcare sector.

5.7.4 Basic Concept

In Iraq's healthcare sector, the negative effects of economic sanctions have been realized over a broad range, resulting in the necessity of aid in various aspects including the organizational system, human resources, funding, facilities, and medical equipment and supplies, among others.

In order to improve this situation, donor nations are investing in medical equipment and supplies, pharmaceuticals, food for patients, and other areas as emergency aid. As its emergency aid projects (for 2004), Japan is investing in projects related to repairs to medical equipment and facilities.

In addition, the reconstruction plan (MoHCBP) formulated by USAID can be viewed as an effective plan for reconstructing Iraq's healthcare sector, focusing on "soft" aspects. In order to realize these proposals, support through bilateral aid is required to implement aid for "hard" aspects of the sector.

The fundamental policies of the aid project with a target year of 2007 are as follows:

(1) Fundamental policies of Short-Medium term Project:

In addition to implementation of a seamless transition from emergency reconstruction aid implemented on humanitarian grounds to infrastructure reconstruction from a mid to long-term perspective, aid must respond to the needs for “an aid program that shows the face of Japan” and for improving the lifestyle of Iraq’s citizens. For these reasons, the following three points should be considered the fundamental policies of aid to the healthcare sector:

- (a) Preparation (facilities preparation) of at least one general hospital (secondary hospital) in each province (governorate)

The hospital project in which Japan invested in the 1980s was limited to thirteen urban areas. However, there are 18 provinces in Iraq. It is necessary to prepare at least one general hospital with proper medical equipment in each of the provinces, including the five that were not subject to the 1980s program.

- (b) Preparation of at least one teaching hospital with proper medical facilities, equipment, and supplies in each of the following regions: northern, central, and southern Iraq (doctor capacity building)

In order to train doctors domestically in Iraq, it is necessary to prepare training hospitals with adequate medical facilities. Although for the time being it will be effective to train doctors in surrounding countries, preparations should begin towards achieving an environment in which doctors can be trained in Iraq through the exchange of personnel with surrounding nations beginning in 2007. For this purpose, at least one teaching hospital with proper medical facilities, equipment, and supplies must be prepared in each of the following regions: northern, central, and southern Iraq.

- (c) Preparation of nursing colleges, preparation of training institutions (technical institutes) for medical staff (medical staff capacity building)

Training for nursing staff and medical technicians can be conducted through cooperation between the Ministry of Health (MOH) and the Ministry of Higher Education (MOHE). In order to ensure that medical facilities restored by receiving aid operate effectively, it is necessary to secure superior personnel to work at such facilities. Capacity building must proceed in advance of reconstruction of the medical system.

With regard to the deep problem of nurse training, the “National Strategy and Plan of Action for Nursing and Midwifery Development in Iraq” prepared through cooperation between the MOH and the WHO covers development concepts in detail.

(2) Notes:

- (a) In order to confirm medical needs, a regional medical system development survey should be conducted promptly.
- (b) Provision of short term projects to regions that have received emergency aid must be conducted after confirming medical needs.
- (c) Although preparation in “soft” aspects is proceeding following the MoHCBP, specific proposals for plans concerning “hard” aspects as represented by aid to hospitals are lacking. The medical system will not begin to function until both hard and soft aspects have been prepared. Preparations for both of these inseparable aspects must be conducted simultaneously.

5.7.5 Cooperation and Linkage with Japan’s Emergency Grant Aid Projects

According to the local survey report (rapid report, issued February 2004), the shortlist includes eight projects. The composition of these projects matches local needs and complies with the relevant missions.

Due to budgetary reasons, it is conceivable that some projects included in the list of projects for emergency aid funds will not be implemented. In this case, it is desirable to implement projects after confirming medical needs instead of simply sliding from one project to the next.

- (i) Plan for restoration of general hospitals in thirteen (13) Iraqi urban areas
- (ii) Plan for preparation of medical equipment and supplies for teaching hospitals
- (iii) Plan for preparation of a system for supplying medical oxygen
- (iv) Medical facility improvement plan
- (v) Plan for preparation of medical equipment and supplies for general hospitals in Baghdad and Basrah
- (vi) Plan for preparation of medical equipment and supplies for major hospitals in Mosul
- (vii) Plan for preparation of medical equipment and supplies for provincial maternity hospitals
- (viii) Plan for preparation of medical equipment and supplies for regional hospitals

Criteria for the stages in which each of the above projects is listed include the following five points: (1) projects are listed in order of higher to lower levels of demand from Iraq’s government; (2) the organization and human resources for operating the projects are present; (3) the projects contribute to medical services currently provided; (4) installation by local Iraqi firms or foreign technicians is possible; and (5) spare parts can be procured domestically in Iraq.

The hospital aid provided by Japan in the 1980s sufficiently fulfilled its role as “an aid program that shows the face of Japan” and is highly regarded by other donor countries as well. For this reason, it is no exaggeration to say that it is Japan’s duty to ensure that future restoration aid is not halfhearted but meets local needs.

As shown by the list of projects, preparation of equipment and supplies is central to the emergency aid projects. The reason PHC-related projects are not included is because it was determined that it would be difficult to adopt medical equipment and supplies over a broad scope without implementing field surveys. Aid for PHCs is planned to be conducted in a manner centered on international organizations such as USAID. Projects such as construction of new hospitals, large-scale renovations to hospital facilities, and preparation of training hospitals that could not be handled under emergency aid will be subject to short term and medium term projects.

The hospital aid provided by Japan in the 1980s (for 13 hospital projects) sufficiently fulfilled its role as “an aid program that shows the face of Japan” and is highly regarded by other donor countries as well. For this reason, it is no exaggeration to say that it is Japan’s duty to ensure that future restoration aid is not halfhearted but meets local needs.

However, for budgetary reasons it is conceivable that some projects included in the list of projects for emergency grant aid funds will not be implemented. In this case, although the appropriateness of such projects has been recognized from the point of view of urgency, projects might be implemented by other donors or by the MOH itself, for reasons of urgency. For this reason, it is desirable to implement projects after confirming medical needs instead of simply sliding from one project to the next.

5.7.6 The Iraqi Government’s Reconstruction Plan

The Iraqi Ministry of Health is conducting activities to demand the following as priority projects: (1) capacity building within the Ministry of Health; (2) implementation of public sanitation programs; (3) redevelopment of the medical system; and (4) human resources development. The survey group has received requests for the following:

- (1) Hospital Project (Renovation)
 - 1) 13 General Hospitals
 - 2) Baghdad Teaching Hospital (The Medical City)
 - 3) Pediatric Hospital (The Medical City)
 - 4) Basrah Teaching Hospital

- 5) Central Pediatric (Children's) Hospital in Baghdad (in Kurgah)
- 6) Burn Center (The Medical City)
- 7) Central ambulance system
- 8) Mousl Mother and Child Hospital / Teaching Hospital
- 9) Al-Jumhory Hospital in Hilla
- 10) Al-Jumhory Hospital in Sulamanyia
- 11) Tuberculosis Hospital in Mosul
- 12) Mother and Child Hospital in Basrah
- 13) Al-Husaini Hospital in Kerbella

(2) Hospital project (new construction):

Requests have been received concerning preparation of nine general hospitals on the scale of 400 beds each (two locations in Baghdad, plus Basrah, Karbala, Kirkuk, Sulaymaniyah, Diyala, Dahuk, and Irbil), radiology hospitals (for cancer treatment) in three locations (Basrah, Mosul, and Arbil), a central treatment facility (Baghdad), and a burn specialty hospital.

(3) Capacity building:

Requests have been made for capacity building with regard to doctors and nursing staff. Already, a training program has begun under the Japan-Egypt-Iraq Joint Cooperation Reconstruction and Development of Health Sector in Iraq project. The MOH has indicated that it would like to have approximately ten doctors train in Japan each year.

In addition, the following literature covers the details of restoration plans as of March 2004:

- Interim Strategy Note of the World Bank Group for Iraq
- A Strategy for Assistance to Iraq 2004, UN
- Synopsis by WB

The CPA budget for FY2004 is covered in the Section 2207 Report.

5.7.7 Current Organizational and Human-resources Circumstances for the Organizations Carrying Out These Projects

The Ministry of Health's organizational chart is indicated in Figure-5.7.1.

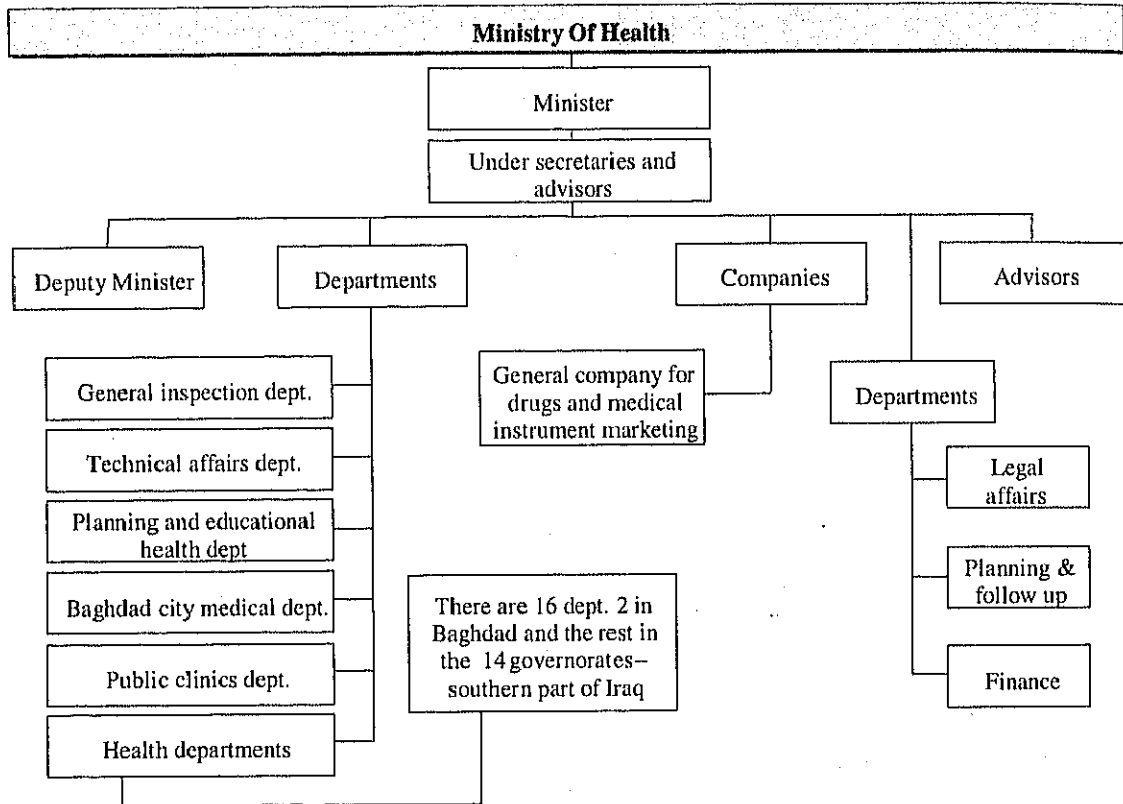


Figure 5.7.1 Ministry of Health

5.7.8 Support Program for Emergency Reconstruction

The Study Team proposes the following four projects as priority projects in the healthcare field, based on the assumption that projects on a bilateral basis will be used. Under the current circumstances, in which final medical needs have not yet been made clear, it is necessary to implement development surveys and a plan for making improvements to the healthcare system in Iraq in advance of implementing all bilateral projects.

(1) Reconstruction of the (existing) Teaching Hospital in Baghdad

In Iraq, with its population of more than 20 million, a vital topic of importance is the construction of training hospitals with sufficient medical facilities, in order to nurture appropriately trained doctors, nurses, and medical technicians. In order to develop the abilities of doctors, nurses, and medical technicians in an efficient manner, we propose a coordinated system within the medical complex, with training hospitals at its core.

Here the Study Team proposes the facilities, equipment, and other matters necessary for constructing a unified medical training system.

Summary of the Teaching Hospital in Baghdad:

Year established: 1970

Treatment fields: general surgery, obstetrics and gynecology, pediatrics, abdominal, dialysis

Number of staff members: 877 doctors, five dentists, 15 engineering managers, and seven management staff members

Number of beds: 724; occupancy rate: unknown

Number of patients: 500/day (outpatients)

- (i) Expansion of treatment buildings and hospital buildings
 - (ii) Construction related to the equipment in surgery rooms and other facilities
 - (iii) Installation of medical equipment
 - (iv) Construction of a nursing school and a school for training medical technicians
 - (v) Estimated costs for this project: currently under calculation
- (2) Construction of a (new) nursing college in Basrah

Although material from WHO and elsewhere covers three junior nursing colleges, according to the Ministry of Higher Education & Scientific Research (MHESR), the correct information is that there are five existing locations and two new ones to be constructed. (This information is currently being confirmed.)

In the Iraqi healthcare sector, the absolute number of sufficiently trained nurses is inadequate. Expansion of nurse training is a pressing need. Of these efforts, construction of a junior nursing college in Basrah as a center for the medical system in the southern region of the country is consistent with the plans of international organizations such as the WHO and of Iraq's Health Ministry. This is a project that would have a high level of beneficial effects.

- (i) Construction of new school buildings and new residences for educators
 - (ii) Establishment of a curriculum and installation of medical equipment for hands-on training
 - (iii) Estimated costs: approximately 1.5 – 2.0 billion yen/site
- (3) Preparation of new hospitals meeting medical needs:

Requests for construction of nine new hospitals have been made by Iraq's Ministry of Health and the Ministry of Health of the Kurdistan Regional Government. With regard

to new hospitals, it is vital to implement development surveys including surveys of the medical needs of each region. Concerning the scale of construction, since advances in medical technology are anticipated to reduce the average number of days per patient spent in the hospital and adoption of hospital management techniques is anticipated to improve operational circumstances, plans call for construction of new hospitals on the scale of 200 beds each.

Estimated project costs for construction of new hospitals: approximately 7 billion yen per hospital (includes buildings, facilities, and medical equipment and supplies).

- (4) Conducting a survey for regional medical system reconstruction plans (development survey)

A total of nine sites for construction of new hospitals are indicated in the requests from Iraq's Health Ministry. Formulating strategic regional medical system reconstruction plans backed up by medical needs is required in advance of constructing new hospitals.

Major details of surveys: medical needs survey, referral system, survey of medical-related human-resources development needs, defining gaps in demand and supply, reviewing treatment structures, and regional medical systems.

Table 5.7.2 The Names of Hospitals and Total Number of Beds for the year 2003

Governorate	Name of Hospital	Number of Beds
Baghdad- Al-Karkh	Al-Karkh The General	200
	Al-Noor (The Martyre Mohammed Baker Al-Hakim)	220
	Al-Karama	393
	The Hospital for prisoners (Abu-Garib)	138
	Al -Khadmyia for children	125
	Abu - Garib	110
	Al-Mahmodia	121
	Al- Khadmyia The Educational	625
Total		1932
Baghdad - Al- Risafa	Al-Kadysia	264
	Al-Thawra The General	306
	Al-Numan	228
	Al-Zafrania	31
	Ibn Al-Baladi	316
	Al-Alwyia for children	167
	Al- Habibya for Obstetrics and children	255
	Al-Mada' an	70
	Ibn Zuhr	70
	Ibn Al-Khateeb	130
Total		1837
The Center of Ministry of Health	Al-Sheikh Zayed	100
Al-Yarmouk Medical Center	The Educational Al-Yarmouk	660

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	A1-Kindi	223
	lbn Rushid	74
	The Central Hospital for children	363
	Al-Rashad	1334
	The Radiation & Necular medicine	150
	lbn Al-Nafees	270
	lbn A1-Haithem	238
	The surgery of Neurosis	90
	A1-Alweyia for Obstetrics	322
	The center for fertilizing and Pipes babies	112
	A1-Wasiti	90
	lbn A1-Baitar	127
Total		4053
Ki rku k	Azadi the General	425
	Kirknk the General	31
	1st of Huzeiran	150
	Al-Haweij a	90
	D akuk	50
	The Hospital for Children	120
Total		1136
The City of Medicine	Baghdad the Educational	1003
	The Specialist Nursery House	249
	Al-Mansour for Children	318
	The Specialist Surgeries	552
	The Hospital for G. I. T. System & Irver	144
Total		2336
Thi Qar	The General A1-Naseria	400
	The Surgery	124
	The Hospital for Obstetrics & Children	285
	A1-Rifa'ai	49
	Sook Al-Shyuk	72
	A1 - Jibayesh	38
	A1-Shatra	88
Total		1056
Kerbala	Al-Huseini	343
	For Children	169
	For Obstetrics	111
	A1-Hindyia	141
	Ein Al-Tamer	18
Total		782
Al-Muthana	The General Al-Simawa	395
	Obstetrics & Children	260
	Al-Razi	24
	Al-Rumeitha	100
	Al-KI Lader	100
Total		879
Babylon	The General Al-Hila	311
	Al-Murj an	197
	Babylon for Obstetrics & Children	313
	Al-Mahaweel	32
	Al-Hashimyia	64
	Al-Alexandria	100
	Al-Musaib	60
	lbn Seif for Obstetrics & Children	52
Total		1129

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Al-Diwania	Al-Diwania The General	421
	Obstetrics & Children	298
	Viruses & chest diseases	90
	Al-Shamyia The General	90
	Afek The General	65
	Al-Hamza The General	78
Total		1034
Missan	Al-Sadar The General	482
	Al-Humeiyat	30
	Al-Zahrawi	220
	Ali Al-Garbi	34
	Khalat Salih	39
	Al-Maimuna	20
	Al-Majar Al-Kabeer	76
Total		901
Neinava	Al-Razi	494
	lbn Sina	422
	lbn Al-Atheer (Obstetrics & Children)	291
	Al-Khansa'a (Obstetrics & Children)	394
	Al-Kamalyia for viruses & chest diseases	100
	Al-Zahrawi for surgery	736
	Al-Batool (Obstetrics & Children)	158
	Tilafar	205
	Sinjar	85
	Al-Sheikhan	50
	Al-Hamadanyia	50
	Hazem Al-Hafiz for Necular Medicine	45
	Al-Ba'aj	50
	The General Al-Mousel	250
Total		3330
Al-Anbar	Al-Rumadi The General	428
	Obstetrics & Children	260
	Heet	100
	Al-Faluja	173
	A'ana	50
	Hadytha	100
	Al-Rutba	24
	Al-Qaiem	100
	Al-Obeidi	50
	Rawa	19
	Al-A'ameria	64
Total		1368
Di ala	Bakuba the General	392
	Bakuba for Obstetrics & Children	233
	Al-Razi for viruses	67
	Al-Mukdadyia	106
	Al-KI Ialis	72
	Khanqeen	60
	Bellerose	67
	The Martyre Mohammed Yed Allah (Jalola)	20
	Al-Mukdadyia for Obstetrics & Children	54
Total		1017
Al-Najif	The Educational Hospital	426
	Al-Najif the General	165
	Obstetrics & Children	242

	Al-Furat Al-Awsat	104
	Al-Manathera	75
Total		1012
Wasit	Al-Kut The General	400
	Al-Kut the surgery (Emergency and Fractures)	100
	Al-Kut for Obstetrics	28
	Al-Numanyia	96
	Al-Azizyia	69
	Al-Hai	119
	Al-Sweira	91
	Al-Haj Jalal	38
	Al-Karama the General	238
Total		1179
Salah Al-Deen	Tikreet the General	442
	Tooz	99
	S amara' a	147
	Balad	147
	Beiji	76
	Al-Shergat	50
	Dijla	60
	Salah Al-Deen the General	200
	lbn Al-Mutam	160
Total		1381
Al-Basrah	Al-Basrah the General	677
	The Educational	593
	Al-Mawan'a the General	562
	Al-Basrah for Obstetrics & Children	483
	Al-Zubair	311
	Al-Madya	115
	Al-Qurna	125
	Al-Fao	52
	Abi-Al-Khaseeb	75
	Um-Qaser	40
	lbn Majed	39
	Al-Feiha'a the General	207
Total		2179

Table 5.7.3 Nursing System (2002)

		Schools	Trainees
Primary Nursing School (after 6 year general schooling)	MOH	2	30
Intermediate female nursing school (after 9 year general schooling)	MOH	24	190
Intermediate male nursing school (after 9 year general schooling)	MOH	16	770
Intermediate mixed nursing school (after 9 year general schooling)	MOH	3	80
Intermediate midwifery nursing school (after 9 year general schooling)	MOH	9	65
Technical Institutes Nursing stream (After 12 year general schooling)	MOHE	30	920
Nursing colleges (after 12 year general schooling)	MOHE	5	64

MOH: Ministry of Health

MOHE: Ministry of Higher Education

Source: WHO

Table 5.7.4 Number of Nursing Staff (2002)

	Nurses		Total Nurses
	Male	Female	
BSc nurses (4 years university education)	151	153	304
Institute graduates (2 years post secondary)	2,936	1,386	4,322
Intermediate nurses (3 years after 9 years schooling)	5,293	1,206	6,499
Primary school nurses (3 years after 6 years of school)	78	4,015	4,093
Nursing auxiliary (with 6 months training)	1,224	977	2,201
Midwives (3 years after 9 years school)	---	324	324
TOTAL	9,682	8,061	17,743

MOH: Ministry of Health
MOHE: Ministry of Higher Education
Source: WHO

5.8 Education

Iraq's educational system is divided into the following three principal categories: primary education (six years), which corresponds to Japan's compulsory education, intermediate education (six years), and higher education (technical institutes, universities and higher levels). Two government ministries supervise the education sector: the Ministry of Education, which is in charge of primary and intermediate education, and the Ministry of Higher Education & Scientific Research (MHESR), which is in charge of higher education.

The amount invested in the education sector per year has declined from USD620 per student in 1989 to an average of USD47 per student (1993 - 2002 average). The effects of this decline are being felt.

According to a report from UNICEF, looting and vandalism occurred at 2751 schools after the war, indicating that secondary damage from the war exceeded direct damage in severity.

5.8.1 Primary and Intermediate Education

(1) Current status and related topics

Until the Persian Gulf War (1991), rates of education had been increasing, and attendance at the primary education stage had achieved a virtually universal level. However, beginning with the implementation of economic sanctions, investment in the education sector declined rapidly. As a result, rates of education showed a declining trend, with attendance at the primary education level having decreased to 93% by 2000.

These figures are for students registered to attend school. UNICEF has reported a true rate of non-attendance of more than 20% of school-age children.

Table.5.8.1 Number of Students

('000)	2003	2004	2005	2006	2007
Primary	4,618	4,841	5,045	5,233	5,349
Secondary	1,311	1,486	1,658	1,795	1,959
Total	5,929	6,327	6,703	7,028	7,308

Source: MoP 2002

As shown in Table 5.8.1, approximately 6 million students are receiving basic education. Details concerning the actual circumstances of Iraqi education will be covered in the results of the school survey currently being conducted by UNICEF (planned for completion in March 2004).

If we focus on short to mid-term objectives, we can concentrate on the following four points: (1) inequality of educational opportunities; (2) reviewing the educational system and curricula; (3) inadequacies in the school infrastructure; and (4) the quality of educators.

(a) Achieving equality of educational opportunities

Rates of school attendance are thoroughly affected by gender issues, with only 44% of girls attending school (2002), even when considering only data from the central-southern region. This tendency becomes more pronounced at higher levels of education. Gender-related restrictions on educational opportunities are a vital issue to be resolved with regard to Iraq's educational sector.

Table 5.8.2 Structure of Schools (2000/2001)

('000)	Teachers (a)		Schools	Students (b)		a/b
	Total	Female	Total	Total	Female	Teachers/ 1000 Students
Primary	158,158	73%	8,749	3,385,138	44.2%	37.3
Secondary	62,810	61.3%	3,051	1,063,835	38.8%	16.9

Source: MoP, 2002

(b) Reviewing the educational system and curricula

In order to provide appropriate education, a review of the educational system will be necessary. When we analyze the current situation using the three years of intermediate education as an example, we can see that the educational system fails completely to fulfill the standard functions of such a system. According to a UNESCO report, in 1995 it took the average student 6.9 years to finish the three-year intermediate school program. A simple calculation shows that students

enrolled in intermediate school are more than double the number that should be enrolled ordinarily. While the inadequacies of the school infrastructure have been reported, inefficiencies are also noticeable. In order to improve schools that use the three-sessions/day system, it will be necessary to ascertain the causes of the above issues.

Table 5.8.3 Current Situation of Schools

	School	Single Shift		Double Shift		Triple Shift	
Primary							
Erbil	967	705	73%	239	25%	23	2%
Dohuk	652	306	47%	329	50%	17	3%
Secondary							
Erbil	192	116	60%	75	39%	1	
Dohuk	131	92	70%	39	30%		

Source: UNESCO Rapid Needs Assessment 2003

(c) Constructing the school infrastructure

Since the absolute number of schools in existence is insufficient for the number of students requiring education, the number of schools responding by using two-sessions/day or three-sessions/day systems is increasing. As a result, the number of hours students spend in class has been reduced to approximately 75% of the standard hours. An effective means of assistance for improving this situation and establishing an appropriate educational environment would be meaningful reconstruction of the school infrastructure.

The severe current circumstances in intermediate education have resulted less from the direct damage of the 2003 war than from looting by surrounding residents and deterioration during the period of economic sanctions.

Recognizing the need for emergency assistance, in January 2004, Japan decided to provide USD6,096,268 in emergency aid for school reconstruction projects (at 271 schools) in Basrah , Samawa, Nasyriah, and Amarah.

**Table 5.8.4 Status of Damage to the School Infrastructure
(from prompt reports)**

	Bombed		Burned		Looted	
Anbar	0	0%	0	0%	66	6%
Baghdad	60	2%	1	0%	410	16%
Ninevah	1	0%	0	0%	233	15%
Salaheldin	11	1%	1	0%	70	6%
Tamim	7	1%	0	0%	123	15%

Source: MoP, 2002

(d) Teacher Supply and Distribution

The number of educators is adequate. Student-to-teacher ratios in FY2001 were 22:1 at the elementary-school level and 17:1 at the middle-school level. As indicated in Table 5.8.5, there are regional differences in these figures, a fact that results in a barrier to achieving equality of educational opportunities. For example, in the case of elementary schools, the student-to-teacher ratio of 37:1 in Nineveh is more than double Wasit's 14:1 ratio.

Reports from both UNESCO and UNICEF have pointed out the declining quality of educators. There are two conceivable causes of this decline in the quality of educators. The first of these is educators' salaries. In 2003, the monthly salary paid to educators was USD5.00, and even when various benefits are included the monthly amount totaled less than USD20.00. At these levels, it is impossible to attain high-quality educators. Educators must hold second jobs. The CPA has decided to pay educators USD60.00 – USD180.00 per month depending on experience, until the establishment of a provisional government. The second cause is shifts resulting from the rapid increase in the number of educators over a short period. Ordinarily, becoming an educator requires completion of a training program curriculum that takes five years following graduation from middle school or two years following graduation from preparatory school (the equivalent to high school). However, recently the number of educators working at schools after completing 6 – 12 month courses following graduation from high school has increased in response to the reduction in the number of educators.

Table 5.8.5 The Student-to-teacher Ratio (FY2001)

	Primary	Secondary
Nineveh	37.3	21.0
Salah El Deen	20.3	18.6
Ta'neem	19.5	15.3
Diala	17.7	13.3
Baghdad	26.1	21.4
Anbar	20.0	15.3
Babylon	19.6	10.6
Kerbala	17.4	13.2
Najaf	22.5	15.3
Qadisiya	15.9	13.3
Muthanna	21.3	22.6
Thi Qar	15.1	16.9
Wasit	14.4	13.7
Maysan	15.3	18.3
Basrah	21.3	14.9
Total	21.4	16.9

Source: MoP

(2) Trends in aid activities of other donors, NGOs, etc.

(a) Trends in aid from other donors

From 1998 through 2002, the UN provided primary and intermediate schools with the educational equipment and materials required for classes via the Oil For Food Project (OFFP).

In addition to activities focused on the spread of textbooks, distribution of educational kits, and renovation of educational facilities, UNICEF fulfills a role as a coordinator of the activities of NGOs working on-site. Aid has been supplied to the northern region through the OFFP. Concerning aid for primary and intermediate schools, implementation of a school survey (with 18,000 subject schools) and other studies, and discussions among international institutions and donor countries based on the results of these, was to begin in March 2004. Plans call for UNICEF to function as the coordinator for these efforts.

UNESCO has developed aid activities under the Oil-for-Food Program (OFFP), implemented a rapid needs assessment in 2003, and reported on urgent needs in Iraq's educational sector. These activities are developing in concert with UNICEF and are centered on secondary education.

(b) Trends in NGO aid activities

In addition to ODA-based aid, grass-roots support from NGOs has a major impact on the Iraqi education sector. The focus of these efforts is primarily directed toward aid for primary education, with efforts underway including construction of temporary schools, distribution of educational kits and materials, and retraining educators.

UNICEF serves as one element for wide-ranging coordination of NGOs.

(3) The Iraqi government's reconstruction plan (draft)

The plan presented by Iraq's Ministry of Education at the Abu Dhabi conference held at the end of February 2004 contained 13 projects, including the following eight primary projects:

- 1) Renovation of elementary and middle-school buildings at 2680 schools nationwide (USD60,000,000)
- 2) Renovation of the Ministry of Education's buildings
- 3) Distribution of educational materials (USD79,000,000)
- 4) Adoption of methods for administration of educational methods and

information

- 5) Training specialists in preschool education
- 6) Construction of preschool education facilities
- 7) Construction of scientific laboratories (at 81 locations nationwide)
- 8) Construction of the facilities required for training educators

Note: It is anticipated that these will be implemented as urgent projects during FY 2004

The short to mid-term objectives proposed by the Ministry of Education comprise the following five items:

- Construction of an education management information system (EMIS)
- Implementing capacity building for the Ministry of Education
- Repairing school facilities
- Adopting a retraining program for educators
- Restructuring the educational curriculum

The goal of the above objectives is to realize, through restructuring of the foundations of the educational system, an education system that is independent from the nation's politics. As measures for realizing this goal, Table 5.8.6 shows investment plans included in the Joint Needs Assessment Report conducted by the UN and the World Bank. According to these plans, the funds required for reconstruction of primary and secondary schools alone amount to approx. USD 2.0 billion. The issue is how to raise these funds.

Table 5.8.6 Investment Plan 2003-2007

(Unit: USD million)	2003	2004	2005	2006	2007	Total
Primary and Secondary Education Investment Expenditure						
Rehabilitation of School Buildings	60.0	145.0	145.0	72.4	0.0	362.4
Add. Classrooms/other facilities	0.0	57.9	57.9	57.9	19.0	192.7
Demolishing and rebuilding new schools	0.0	96.0	72.0	0.0	0.0	168.0
New school construction	0.0	324.0	322.8	321.6	111.6	1080.0
Cost of Lab. Equipment in Secondary schools	0.0	55.0	54.0	53.0	18.5	180.5
Cost of school furniture	0.0	0.1	0.1	0.0	0.0	0.2
Cost of IT info sys. management development	0.0	1.8	1.5	1.5	0.4	5.2
TVE Materials	0.0	15.0	15.0	15.0	15.0	60.0
TVE Rehab. and Equipment	0.0	34.0	33.0	32.0	12.0	111.0
Transportation: Vehicles	0.0	1.5	1.5	1.5	0.4	4.9
Higher Education Investment Expenditure						
Technical Institute Rehabilitation/Reconstruction	0.0	0.0	270.8	118.9	49.3	439.0
Emergency rehabilitation/reconstruction	10.0	100.0	0.0	0.0	0.0	100.0
Universities rehabilitation/reconstruction	0.0	0.0	439.0	439.0	439.0	1317.0
Total for Capital Investments	70.0	830.3	1412.6	1112.8	665.2	4020.9
Selected Goods						
Cost of textbooks	73.5	79.3	85.0	89.8	94.5	348.6
Cost of school material and supplies	20.8	22.1	23.5	24.6	25.6	95.8
Cost of MOHE teaching material and supplies	65.0	72.2	80.1	88.9	98.7	339.9
Total Investment and Selected Goods	229.3	1003.9	1601.2	1316.1	884.0	4805.2
Incremental O&M Costs	42.0	46.1	50.1	54.1	55.5	205.8
Grand Total of Investment	271.3	1050.0	1651.3	1370.2	939.5	5011.0

Source: MoP

- (4) Current organizational and human-resource circumstances for the organizations carrying out these projects

See Figure 5.8.1 for the Ministry of Education's organizational chart.

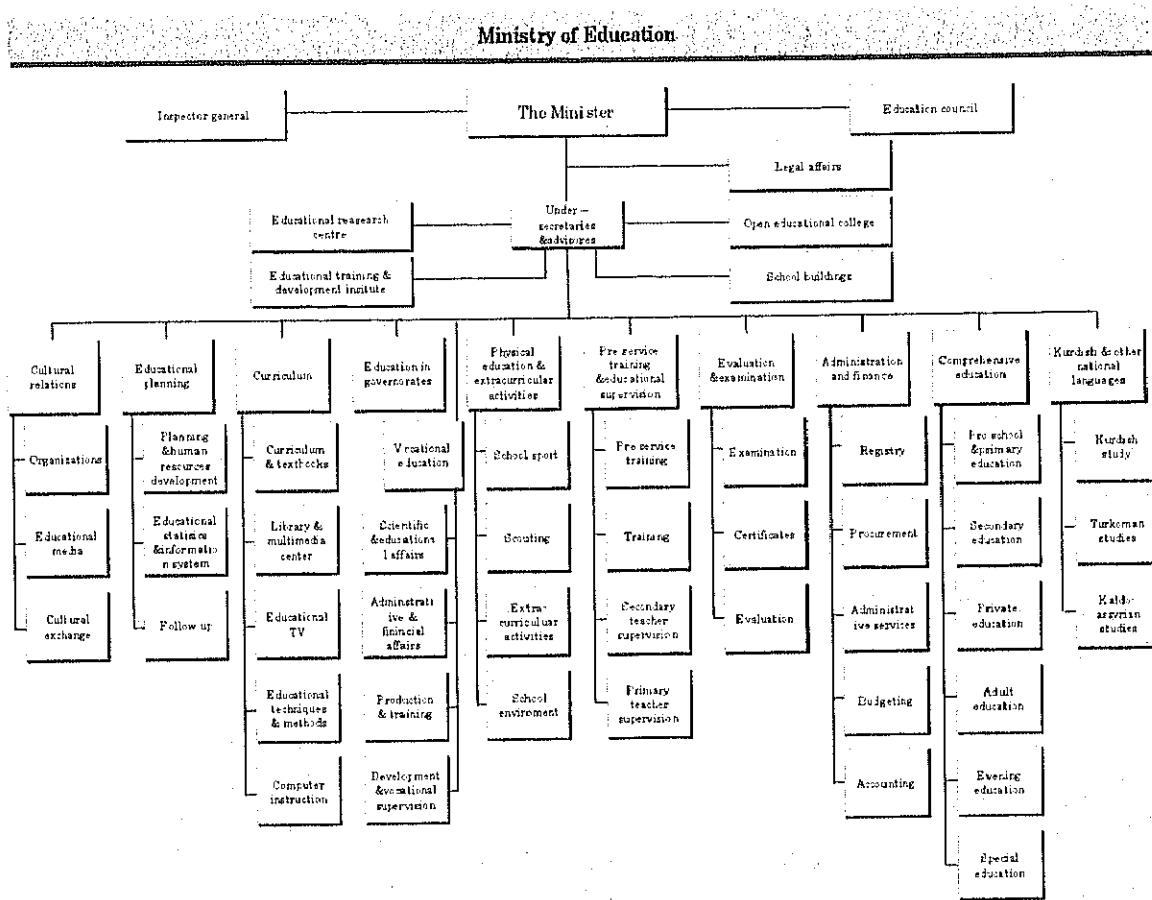


Figure 5.8.1 Ministry of Education

(5) Causes of obstacles to reconstruction and development topics

The greatest cause of obstacles to reconstruction is expanding the spatial distribution of primary and secondary schools. In the current situation in which public safety is still uncertain, implementing aid suited to the circumstances of sites is difficult. Through 1990, the level of education in Iraq was high in comparison to those of surrounding countries, with elementary-school attendance rates close to 100% and a literacy rate of more than 85%. However, since the implementation of economic sanctions, school attendance rates have plummeted for various reasons. Rebuilding the primary and intermediate education environments has become a pressing need. Since all international organizations and donor countries are aware of this topic, the possibility of the overlapping of aid efforts is high. Throughout Iraq, several thousand schools are said to require rebuilding and rehabilitation of school buildings, and such activities have already been started by international institutions and aid groups, beginning with UNICEF. In order to avoid duplication of projects and for other reasons, it is anticipated that projects selected on a regional basis will be implemented in consideration of their compatibility with the projects of UNICEF and others, after

implementing the Iraq elementary school redevelopment plan.

Returning to a sound educational system from the distorted educational policies of the past requires a comprehensive review of educational curricula and retraining of educational personnel. First of all, educators themselves must understand what constitutes sound education. Implementing the retraining program for educators developed by UNICEF and UNESCO would be meaningful for this purpose.

(6) Linkage with the reconstruction aid preliminary survey

From the point of view of urgency, the reconstruction aid preliminary survey placed the highest priority on primary and secondary education and assigned the next highest levels of priority to high schools, junior colleges, and universities. Major projects indicated as promising proposals are the following:

- 1) City of Samawa primary school reconstruction plan
- 2) Secondary-school equipment and supply restoration plans for the southern and northern regions
- 3) Zafaraniya technical school reconstruction plan
- 4) Trade-school equipment and supply restoration plans for major cities
- 5) Work-training center and work-training equipment and supply restoration plans

One reason for listing school building construction for primary and secondary schools is due to the recognition that it is necessary to transfer construction technology through the construction of school buildings, since the construction techniques used for existing school buildings were inadequate.

(7) Urgent reconstruction support program

With regard to current investment needs, in addition to the rebuilding and expansion of school buildings, the retraining of educators and development of educational curricula are pressing requirements. In addition, efforts with regard to gender issues must begin soon.

Since it is anticipated that implementation of aid through the bilateral basis program will not begin until 2005 or later due to restrictions of the scheme, there is a high likelihood that projects will be implemented sooner by other donor nations. In order to utilize limited aid funds efficiently, and to avoid duplication of projects, it is anticipated that projects selected on a regional basis will be implemented after implementing the Iraq elementary school redevelopment plan.

With regard to the scale of the project, we propose implementation in 100-school units.

- (i) Rebuilding elementary and intermediate-school buildings, and renovating sanitary facilities
- (ii) Supplying elementary and middle-school educational materials
- (iii) Estimated costs: approximately 50 million yen/site

5.8.2 Higher Education

(1) Current status and related topics

Iraq has the following institutions of higher education: 20 universities, nine engineering colleges, and 39 technical institutes. Attaining a bachelor's degree requires at least four years, attaining a master's degree requires a further two years, and attaining a doctorate requires three years. At engineering colleges as well, attaining a bachelor's degree requires four years and attaining a master's degree requires a further two years. The difference between engineering colleges and universities is the fact that the former's curriculum is constructed more in recognition of practical application, with training consisting of 40% theory and 60% technology. Technical institutes award graduates with diplomas (the equivalent to graduation from a junior college in Japan).

The number of students receiving higher education is estimated at approximately 300,000 (in 2003). Of these, 73,000 students attend engineering colleges and technical institutes. Women make up 34% of students. In addition, higher education attendance rates have been in a declining trend for the past ten years, having decreased to one-third of the rate of ten years ago.

Since the campus of the Basrah Technical Institute became a battlefield during the war (2003), most of its facilities were destroyed. If the Basrah Technical Institute is to continue in existence, a project for its reconstruction must be implemented swiftly.

The lifeline for higher education is how it acquires new information and adopts new technologies. During the period Iraq was under economic sanctions beginning in 1990, restrictions on information were in place, resulting in a situation in which these institutions could not fulfill their roles as institutions of higher education. Academic exchange and cooperation were completely non-existent, with the nation's academic institutions largely cut off from the outside world.

(2) Trends in aid activities of other donors, NGOs, etc.

Aid related to the higher-education sector has been delayed in comparison with aid to the primary and intermediate-education sectors.

Aid related to higher education, centered on UNESCO, is proceeding. The CPA plans to rehabilitate higher-education facilities and to cooperate with UNESCO and UNICEF in regard to areas such as curriculum.

USAID has begun the application of Fulbright scholarships and decided to adopt exchange programs and partnerships between universities. UNESCO has implemented rehabilitation efforts for 157 high schools and 89 higher-education facilities under the Oil-for-Food Program.

It is also a fact that, in comparison to primary education, aid organizations have moved slowly with regard to higher education.

(3) The Iraqi government's reconstruction plan (draft)

Reconstruction of universities has been proposed as the highest-priority project. The investment plans indicated in Table 5.8.6 call for investment of USD 1.317 billion toward university reconstruction through 2007.

Reconstruction plans with regard to technical institutes and similar institutions call for reinforcement and repair of facilities after a curriculum review based on a needs assessment. It is also possible that schools not requiring reconstruction will be identified in this process.

Although aid from aid institutions such as UNICEF is currently being invested in primary education and such aid is expected to be effective, preparation of higher-education facilities to accept the students who enter secondary schools in 2004 must be completed no later than 2010. It is necessary to implement a strategic plan for preparation of higher-education facilities.

(4) Current organizational and human-resource circumstances for the organizations carrying out these projects

As of 2003, the number of employees at the MHESR had risen to 45,500, of whom 14,500 were educators.

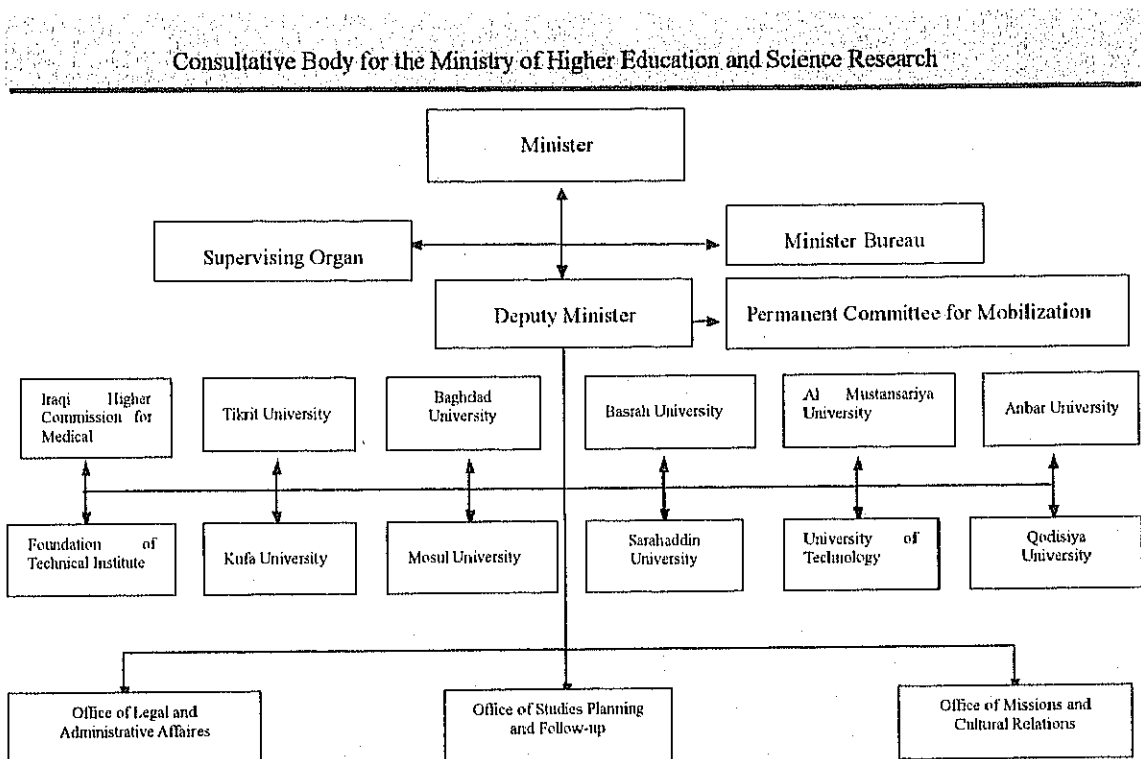


Figure 5.8.2 Ministry of Higher Education and Science Research

(5) Causes of obstacles to reconstruction and development topics

When topics related to development of Iraq's educational system are considered, the greatest obstacles are inadequacies in educational administration and the failure to ascertain educational needs. In the future development of Iraq's economy, if it has not been ascertained what types of human resources are required in what quantities and in which industries, even the most highly developed educational system will simply result in the creation of highly educated people with no jobs.

As an aid program that shows the face of Japan, prompt implementation of reconstruction efforts with regard to Baghdad University, which symbolizes higher education in Iraq and for which the MHESR has requested a high priority, would be very meaningful.

In addition, aid to the institutes of technology, which educate various types of technicians in the regions of the country, is vital to the regional cities. These institutes of technology have produced various technicians necessary to regional industries. However, these institutes' curricula have not been revised in the past twenty years and they have tended lately to become isolated from the development of the human

resources required by local businesses, resulting in a tendency for these institutions to be looked down upon as mere work-training schools. The original reason for these schools' existence was to serve as educational institutions for learning higher-level technologies - the equivalent of junior colleges - rather than for vocational education.

Even now, this policy has not changed.

This policy itself requires that the current Technical Institute reconstruction efforts include the establishment of human-resource development curricula meeting the needs of local industry, in addition to renovation and expansion of school buildings. Restructuring of the educational system through an overhaul of technical institutes' curricula is anticipated.

(6) Support program for emergency reconstruction (draft)

- (a) Rebuilding the universities, which comprise the highest level of educational institutions, as one element of aid for higher education

This plan covers reconstruction for the symbols of Iraqi education: Baghdad University and Basrah University. Buildings and educational facilities at these universities have deteriorated severely after being left unmaintained. As such, swift implementation of this project is desirable. The self-sufficiency of the new Iraq requires superior human resources that have received appropriate education.

- (i) Expansion and rebuilding of the schools of engineering's buildings
- (ii) Expansion and rebuilding of the schools of engineering's lecture halls
- (iii) Construction of some new buildings for the schools of engineering
- (iv) Estimated costs for this project: approximately 6 – 8 billion yen.

(b) Reconstruction of the Basrah Technical Institute

The Basrah Technical Institute (established in 1973) is located in Basrah, which is Iraq's second-largest city and the central city of the southern region. Since this university was the site of exchanges of fire during the war, many of its buildings have been destroyed. Prompt reconstruction of campus buildings and supply of educational equipment are required. In addition, a request concerning this project was submitted to the government of Japan in 2003. The Basrah Technical Institute has approximately 10,000 students, 131 instructors, and 726 employees.

- (i) Construction of new campus buildings, supply of various types of educational equipment, and supply of information-technology equipment
- (ii) Estimated costs for this project: approximately 7 billion yen.

Since Basrah sustained direct damage from the exchange of fire during the war, there is a possibility that it will be reconstructed at an early stage through aid from various countries. It is important to keep in mind the need for reconstruction efforts that are based on an image of the future of Iraq's educational sector and that place the highest priority on activities necessary for achieving that goal. For this reason, the necessity of reconstruction of the Basrah Technical College must be reconsidered. Under the existing educational system, it is necessary to differentiate the work training schools under the authority of the Ministry of Labor and Social Affairs and the technical institutes under the authority of the Ministry of Higher Education. Although technical institutes grant diplomas, the educational curriculum needs to be reviewed in light of qualifications. Preparation of facilities, equipment, and supplies necessary for this purpose is most necessary.

Similarly, the need for reconstruction of the Zafaraniya Technical Institute has also been confirmed. Consideration must be given to aid for this institute following that for the Basrah Technical Institute.

5.8.3 Technical and Vocational Education

Work training is under the supervision of the Ministry of Labor and Social Affairs. Since work training schools are also part of the educational system and work in cooperation with primary and secondary education, this ministry must take part in educational reforms together with the Ministry of Education and the Ministry of Higher Education. Major issues are confirming needs and overhauling curricula.

The number of students in these institutions was roughly halved from the 1990's figure of 147,942 students (at 278 schools) to 2001's figure of 65,750 students (at 263 schools). A possible reason for this decline is changes in the employment environment (worsening of the gap between supply and demand), reflecting circumstances in which even students that had graduated from vocational schools might not be able to find employment. The Planning Department of the Ministry of Industry & Minerals is conducting a survey and other studies into the requirements for revising the country's Vocational Education system to reflect demand. Training courses based on the results of these studies will be necessary.

In providing aid, it is necessary to prepare the equipment and supplies required for practical training, which is the lifeblood of work training. However, it is difficult to procure appropriate equipment and supplies for practical training using only the information currently ascertained.

Results of hearings have confirmed the high level of necessity for occupational schools throughout Iraq, and the CPA has also decided to invest in aid for such schools. However, repairing facilities and supplying equipment and supplies without confirming the supply and demand needs concerning occupational schools cannot be considered a strategic arrangement.

In order to change the content of educational curricula to fit the human-resources supply/demand relationship, it is necessary first to determine the gaps between human-resources supply and demand in the labor market. However, since existing information is affected by many biases, at present it is difficult to ascertain the changes in Iraq's industrial structure. For this reason, it is necessary first to conduct a development survey to ascertain gaps between supply and demand, and then to formulate a project for the vocational schools.

5.9 Industry

Iraq's main industries are oil, light industry, service and food processing, but the detailed industrial structure is not known due to limited published and recorded data. It is said that oil production accounts for 60% of GDP and that 95% of foreign currency earnings comes from oil production.

5.9.1 Oil and Natural Gas Industry

(1) Present situation and issues relating to the oil and natural gas industry

(a) Oil production

Confirmed oil deposits in Iraq are 112.5 billion barrels, which is the second largest followed by Saudi Arabia. Potential deposits are assumed to be even larger (estimated potential deposit: 214 billion barrels). The oil production cost in Iraq is the lowest in the world due to low oil draw cost because of the shallow oil layer. The API (gravity of oil set by the association of oil industries in the US) of crude oil is wide with ranging from 22 degrees to 35 degrees, but the oil is light and good quality.

The following table shows the trend of crude oil production and export of Iraq before and after the Iran - Iraq War.

Table 5.9.1 Trend of Crude Oil Production and Export Volume

(Unit: 000 barrel/day)

Items	1976-80	1981-96	1995	1996	1997	1998	1999	2000	2001
Production	2,690	1,263	550	580	1,150	2,110	2,523	2,568	2,355
Export	2,504	961	250	275	840	1,795	2,203	2,243	2,030

Source: EIU

The US government, through the CPA, supports the resumption of crude oil production by awarding a blanket contract to Kellogg, Brown & Root (KBR), but the details are not known.

(b) Present situation with respect to oil field development

Among the 73 oil fields found in Iraq, development has started for only 15. Oil field development can be divided into three areas: northern area centering on Kirkuk, central and southern area centering on Rumaila, and the recently developing central area centering on East Baghdad.

Northern area oil field:

Kirkuk oil field with confirmed remaining oil deposits of 10 billion barrels is the base of northern area oil production. Sixty percent of the facilities of the Northern Oil Company (NOC), which controls the northern area oil field development, was damaged during the Gulf War. Total oil production from the northern area oil field (Kirkuk, Bai Hassan, Jambur, Khabbaz, Saddam, Safiya, Ain Zalah, Butnah) in 2001 was about one million barrels/day.

Southern area oil field:

Oil plants in the southern area were also destroyed during the Gulf War and production dropped to 75,000 barrels/day in mid 1991. In Rumaila oil field which is the largest in the southern area, the gathering station, compression station and gas separation station were destroyed during the Gulf War. Mina al-Bakr export terminal with an oil storage capacity of 1.6 million barrels/day and the pumping stations along the strategic pipeline (north-south) have also been destroyed. Other oil fields such as Zubair, Luhais, Suba, Buzurgan, Abu Ghirab and Fauqi are also damaged and partly suspending operation.

Central area oil field:

In the central area, there is East Baghdad oil field with 11 billion barrels deposit, which started production in April 1989, and is presently producing 50,000 barrels/day of crude oil and 30 MMcfd (1 million cubic feet/day) of associated gas.

(c) Oil refinery facility

Oil refinery facilities were also damaged during the Gulf War and UN sanctions following the War. The production capacity was 700,000 barrels/day before the war and dropped to about a half of pre-war production level with 350,000 barrels/day in 2000.

There are 10 oil refinery facilities in Iraq and the total capacity is 700,000 barrels/day as mentioned earlier. The main facilities include Baiji North (150,000 barrels/day) in the north, Basrah (140,000 barrels/day) in the south, and Daura (100,000 barrels/day) in Baghdad south. In addition, Salah Ad Din oil factory with presumed capacity of 150,000 barrels/day is located near Baiji North. A construction contract for a Central oil refinery (140,000 barrels/day) was exchanged in 1990 between the Iraqi government and Japanese companies (Chiyoda Corporation/Mitsubishi) for an oil refinery, presumed to be for processing crude oil produced in the East Baghdad oil field, but construction has been postponed up until now due to the Gulf War and economic sanctions following the war.

All oil factories have to some extent been damaged by the Gulf War, and most facilities are partially operated due to shortage of parts, robbery and shortage of electricity. In particular, shortage of spare parts is the most severe problem, and Baiji, Basrah and Dura oil factories operate only with primary facilities which leaves a high sulfur content in light oil with 1.0%~2.0% sulfur content (this figure is twice as high as the international standard for sulfur content). Heavy oil and separated off gas used for power generation also contain a high sulfur content causing severe air pollution. At the end of 2003, there were long queues to purchase gasoline and customers had to wait for 4~6 hours to purchase. As of February 2004, the situation seems to be getting better. Occasionally, the gasoline price has hiked to 20 times normal in the black market.

(d) Natural gas

Iraq is known to possess the tenth largest natural gas deposit. Confirmed natural gas deposits in Iraq total 110 trillion cubic feet and an estimated potential deposit is 150 trillion cubic feet. The natural gas deposits are made up of 70% associated gas (gas produced in oil fields), 20% un-associated gas (gas produced in gas fields) and 10% dome gas (gas cap: the gas layer above the oil layer). Natural gas production in 2001 dropped to 97 billion cubic feet from 700 billion cubic feet in 1979. This drop was caused by the heavy reliance on crude oil production because most natural gas produced is associated gas.

The situation with respect to natural gas production is described below.

Northern area gas project:

The northern area gas project was planned for efficient utilization of associated gas and started operation in 1983. Collected LPG is conveyed to Baghdad, Samara, and Nasiria by pipeline and distributed from each cylinder depot (facility to pour gas into cylinders) for public welfare. Refined dry gas is distributed to gas users such as power plants and the chemical fertilizer industry.

Southern area gas project:

The objective of the southern area gas project was associated gas treatment and the project was completed in 1985 and started operation after 1990. This project contained nine gathering stations and has a capacity of 1.5 billion cubic feet/day.

In Rumaila (northern area), Japanese companies (Chiyoda Corporation/Mitsubishi Corporation) constructed an associated gas treatment plant in 1983. The facility treats 680 MMcfd of associated gas and is capable of producing 480 ton/day of NGL, but the present rate of operation has dropped to 19%.

The natural gas sector faces serious situations such as exhaustion of gas treatment plants, shortage of spare parts/materials/equipment and damage of pumping stations, so supplying and repairing spare parts are needed.

(2) Policy of reconstruction of oil and natural gas industry

As mentioned before, the oil and natural gas industry is a core industry in Iraq. In regard to oil refineries, gasoline and diesel is motor fuel, heavy oil is fuel for power plant and LPG is fuel for cooking, cooling and heating. Natural gas is used as a material for chemical fertilizer production. Rehabilitation of this industry is urgently needed not only for industrial promotion, but also to secure jobs. Restoration and rehabilitation of oil plant and gas plant as a base for manufacturing is urgently needed.

(3) Reconstruction support project

As mentioned before, Japanese companies have been involved in constructing oil and gas related plants in the past. Important projects can be summarized as shown below.

Urgent

(a) Rehabilitation of Southern LPG Plant

The southern LPG Plant was constructed in North Rumaila oil field in the southern

part of Iraq by Chiyoda Corporation in 1983. The plant treats associated gas and collects LPG. The gas produced by the plant is used for fuel for power plants and also as a material for nitrogen fertilizer products produced in the chemical fertilizer plant in Basrah. Iraq is an agricultural country and known to be rich in agricultural production. Fertilizer is necessary as a base industry for agriculture and indispensable for agricultural promotion. Rehabilitation is urgently needed.

Short-term

(a) Rehabilitation of Northern oil factory and Salah Ad Din oil refinery plant

The northern oil plant (Baiji) was constructed by Chiyoda Corporation in 1983 and is the largest and most modern refinery plant with a capacity of 150,000 barrels/day. Together with Salah Ad Din oil plant (constructed by a Czechoslovakian contractor), the capacity is 300,000 barrels/day, which accounts for 43% of the total of Iraq's oil refinery capacity. The refinery plant uses crude oil from the north and acts as a hub for energy production and supply. For public welfare, the supply of heavy oil for power generation, LPG for cooking and security of gasoline supply are indispensable, and rehabilitation of plant is therefore important. The rate of operation is currently below 20% due to the state of old equipment and the shortage of electricity. The project provides for rehabilitation of the plant.

(b) Rehabilitation of Northern Gas Plant

The northern gas plant is an associated gas treatment plant constructed in Kirkuk in 1983 by Mitsubishi Heavy Industry. The plant collects LPG and natural gasoline produced by the associated gas process, and a large amount of processed gas is used for power generation and chemical fertilizer production. Considering the fact that treated gas is closely linked with public welfare through providing the energy source for power generation, collection and supply of LPG, and chemical fertilizer production, an early start on project formulation is desired.

The treated natural gas from the plant is supplied to the chemical fertilizer plant in Baiji. The fertilizer production plant was constructed by Hitachi Zosen/Nissho Iwai and was the latest model at that time (1985). Iraq is an agricultural country, and for revival of agriculture, the role of the facility is important.

Mid-term

(a) Construction of new Central oil factory

The Iraq government and Chiyoda Chemical/Mitsubishi Corporation made a construction contract concerning the Central oil plant located in the suburb of Baghdad in 1990. However, the contract has not been fulfilled due to the Gulf War and UN sanctions. Baiji is the only refinery plant that can produce international standard quality products. As the development of the West Baghdad oil field located near the oil factory site will start some time in the future, construction of the oil factory is indispensable.

(b) Treatment of crude oil and associated gas/LPG chain rehabilitation

The objective of the project is to secure supply of LPG for improvement of public welfare by promoting: (i) restoration of the associated gas separation facility, (ii) restoration of the NGL plant that treats associated gas, (iii) restoration of the pipeline network for supplying gas, (iv) restoration of the plant that produces LPG from NGL, and (v) construction of a new gas treatment facility to treat increased oil production. This project has been approved by JETRO F/S in 2003, but since travel to Iraq is difficult, implementation of the project has been postponed.

5.9.2 Industry

(1) Present situation and issues relating to industry

Since 1970, an import substitution policy has been executed, and the oil refinery industry and other related industries (light industry such as parts of the plant), natural gas refineries, food processing, cement production and construction materials have been developed throughout the country. The scale of the industry has been shrinking due to shortage of materials to support the industry after the economic sanctions were in effect in the 1990s.

It is clear that demand for cement will increase to support a large amount of reconstruction activities, and demand for chemical fertilizer will increase to support food self-sufficiency. Considering the increase in demand expected, the main focus of the industry is being given to cement manufacturing and chemical fertilizer manufacturing.

(a) Cement manufacturing

In Iraq, there are 14 cement factories and the annual production capacity is said to be 18.4 million tons. Because of the shortage of spare parts, lack of maintenance, shortage of electricity, and vandalism, the production has dropped drastically.

Presently, the annual production is about 3.5 million tons.

Annual demand, on the other hand, dropped from 9 million tons in 1990 to 4 million tons before the Iraq War. Considering the per capita consumption in the neighboring gulf countries is 1 ton/year, demand is expected to increase to 23 million tons based on the population of Iraq (23 million). In addition, the demand for cement is expected to increase during the process of large scale reconstruction activities. Measures to supply cement to meet the demand need to be taken urgently.

Table 5.9.2 Present Situation with Cement Manufacturing

Corporation	Start of Operation	Production Capacity (0000 ton)	Production (0000 ton)	Contractor
1. Iraqi Cement State Co.				
(1) Kubaisa	1983	200	40	Kawasaki Heavy Industry
(2) Kirkuk (Al-Tamim)	1984	200	40	Kawasaki Heavy Industry
(3) Al-Qaim	1988	100	20	Uzinexport (Romania)
(4) Tashuja	1983	90	20	Krupp Polysius (Germany)
(5) Fallujah	1978	35	10	BKMI (Germany)
2. Southern Cement State Co.				
(6) Kufa (1 st)	1977	25	15	ACC (India)
(7) New Kufa	1978	190	70	F L Smidth (Denmark)
(8) Kerbala	1984	200	30	Krupp Polysius (Germany)
(9) Al-Muthanna	N.A.	230	40	KHD (Germany)
(10) South (Al-Janoub)	1985	50	0	Technoexport (Russia)
(11) Samawa/Um Qasr	1957	50	0	F L Smidth (Denmark)
3. Northern Cement State Co.				
(12) Badoush	1978	190	30	Krupp Polysius (Germany)
(13) Sinjar	1985	200	25	Uzinexport (Romania)
(14) Hammam Al-Alil	1963	110	10	FCB (France)
Total		1,870	350	

*1) Production is taken from the agency in Iraq (July 2003)

*2) Samawa/South are located in the same area

*3) Um Qasr is abandoned. Crushing equipment only.

(b) Chemical fertilizer manufacturing

Four chemical fertilizer factories have been identified at the moment, and two of them were bombed and closed in 1991. Baiji factory and Basrah No.3 factory are operating. The capacity of urea production of the two factories is 5,250 ton/day

(1.73 million ton/year) but the actual production capacity is 50% for Baiji factory and 70% for Basrah No.3 factory. The actual production capacity is 1.1 million ton/year.

The demand for urea, on the other hand, is said to be 2 million ton/year. For sustainable agricultural production with an adequate supply of fertilizer, some measures need to be taken urgently.

Table 5.9.3 Present Condition with Chemical Fertilizer Production in Iraq

Corporation	Start of Operation	Production Capacity (ton/day)	Production (ton/day)	Contractor
1. North Fertilizer State Corporation				
(1) Baiji Fertilizer	1989	1,000 (ammonia)	0 (ammonia)	Hitachi Zosen
		1,750 (urea)	0 (urea)	(rate of operation is 0%)
2. South Fertilizer State Corporation				
(2) Basrah Fertilizer No.1	1971	885 (ammonia)	0 (ammonia)	Mitsubishi Heavy Industry
		1,439 (urea)	0 (urea)	(Bombed during the Gulf War and closed in 1991)
(3) Basrah Fertilizer No.2	1978	221 (ammonia)	0 (ammonia)	Mitsubishi Heavy Industry
		176 (urea)	0 (urea)	(Bombed during the Gulf War and closed in 1991)
(4) Basrah Fertilizer No.3	1975	2,000 (ammonia)	0 (ammonia)	Mitsubishi Heavy Industry
		3,500 (urea)	0 (urea)	(rate of operation is 0%)

(2) Policy on reconstruction of industry

During reconstruction of Iraq, a large scale reconstruction/construction is expected and the demand for cement is expected to increase rapidly. Reconstruction of the industry is compulsory.

Agricultural production in Iraq and securing self-sufficiency in food to satisfy an annual population increase of 3 to 4%, instead of relying on the food support of UN, is expected to contribute to the reconstruction of Iraq. Iraq is rich in agricultural resources such as water, labor, and land. By supplying fertilizer, sustainable agricultural production is expected.

Reconstruction of cement and fertilizer factories is expected to generate jobs for related industries and an increase in income, which is also expected to promote security.

Restoration and rehabilitation of cement factories and fertilizer factories as a core of production needs to be promoted.

(3) Project for reconstruction

For industry, particularly the cement and fertilizer production sector, the following projects are considered important.

Urgent

(a) Rehabilitation of Muthanna cement factory

Samawa's main industries are agriculture and cement, but the existing cement factory in Samawa is old, damaged, and suffered from robbery during the war and cannot be operated. The Ministry of Industry of Iraq, the State Cement Co. and the Governor of Muthanna insist on restoration of the cement factory in Muthanna (45 km west of Samawa), where limestone can be mined. This would have a large impact on the local economy instead of re-operating the cement factory in Samawa, where the potential impact on the local economy would be much less noticeable.

Closing the existing cement factory in Samawa and focusing on restoration of the Muthanna factory is proposed. The production capacity of the Muthanna cement factory is 2.3 million ton/year, but due to shortage of electricity and shortage of spare parts, the actual rate of operation is 20%. The project aims to increase annual production capacity to 1.4 ton (60%) by providing a generator (60MW) and a variety of equipment and materials.

(b) Rehabilitation of Basrah Chemical Fertilizer Factory

Basrah No.3 fertilizer factory was constructed in 1975 by Mitsubishi Heavy Industry to produce fertilizer for agriculture (ammonia and urea fertilizer). Due to old equipment, shortage of parts and suspension of supply of electricity and gas, production is estimated to be zero. This project aims to carry out rehabilitation of equipment, conduct maintenance and provide spare parts. The project covers revolving equipment such as turbines and pumps, stationary and catalyst equipment, corroded pipes, boilers and other parts, heat retention material, meters and control systems.

Short-term

(a) Rehabilitation of Kubaisa cement factory

In 1980, Kawasaki Heavy Industry constructed two lines with a capacity of 1 million ton each. Production capacity is 2 million ton/year and this used to supply 50% of the cement consumed in Baghdad, but due to shortage of electricity, problems with O&M, and shortage of spare parts, the present rate of operation is 20%. This project supplies a generator (25MW), spare parts and cement particle collection equipment.

(b) Rehabilitation of Kirkuk cement factory

In 1980, Kawasaki Heavy Industry constructed two lines with capacity of 1 million ton each. Production capacity is 2 million ton/year which is the same as that for Kubaisa. Due to shortage of electricity, problems with O&M, and shortage of spare parts, the present rate of operation is 20% here also. This project also supplies a generator (25MW), spare parts and cement particle collection equipment.

Mid-term

(a) Rehabilitation of Baiji fertilizer factory

Baiji fertilizer factory was constructed in 1990 by Hitachi Zosen/Nissho Iwai and produces fertilizer for agriculture (ammonia and urea fertilizer). Due to old equipment, shortage of spare parts and suspension of electricity and gas, production is estimated to be zero. The project carries out rehabilitation of a variety of equipment and supplies spare parts targeting the mid-term. The project covers revolving equipment such as construction of a gas turbine generator, a heat exhaustion boiler and peripherals, a gas compressor, a turbine and pumps.

5.10 Urban and Regional Planning for Each City

5.10.1 Master Plan (M/P) for Urban and Regional Development and Plans for Five Main Regional Cities (Kerbala, Najaf, Mosul, Basrah, Kirkuk)

Five cities, Kerbala, Najaf, Mosul, Basrah , Kirkuk, each have a population of more than several hundred thousand. Since Kerbala and Najaf are sacred places for Shiite Moslems, a lot of religion related population flows into the cities, and tourists also visit temples and historic spots. Urban development is needed. Mosul and Basrah are the centers of industry of the northern and southern areas respectively. Basrah particularly, is an important city as the gateway to Iraq for foreigners. Kirkuk is the city where supporters of the ex-Hussein regime reside, and the impact of reconstruction of Kirkuk affects Iraq as a whole. How to show direction is a key to reconstruction, but no land use plans, road plans or water supply plans exist in those major cities.

Considering the background of the cities, the formulation of a regional development master plan is extremely meaningful and measures need to be taken urgently.

Formulation of a master plan for regional development is proposed. The expected components of a master plan for regional development are shown in the figure below.

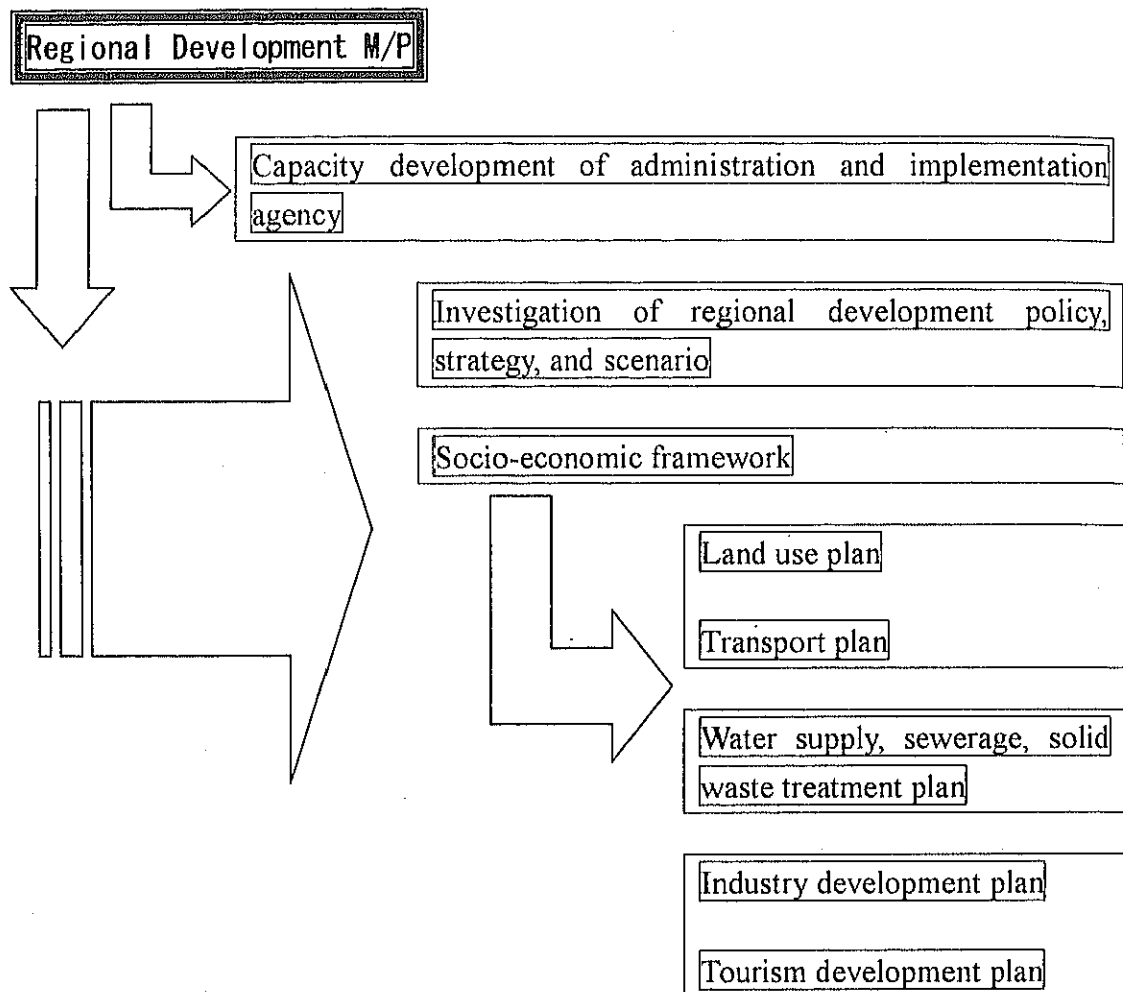


Figure 5.10.1 Regional Development Master Plan for Five Major Cities

5.10.2 Samawa Regional Development Master Plan

The Self-Defense Force was dispatched to Samawa, located south of Iraq, to provide humanitarian and reconstruction assistance (rehabilitation and maintenance of hospitals and schools, grant aid of medicines and water supply), but the future activities of Self-Defense Force are not known. For sustainable support to be provided by the Self-Defense Force, an integrated regional development plan of the area is compulsory. The unemployment rate in Samawa is said to be 60~70% and a measure for job creation is urgently needed.

A “Samawa Regional Development Plan (M/P)” needs to be formulated together with the implementation of agricultural projects (cultivation, agriculture extension center) and an industry project (workshop for brick manufacture) which contribute to job

creation, and also a study to promote implementation of capacity development of regional government and related implementing agencies.

Formulation of the Samawa regional development plan with the following contents is proposed.

- (a) Integrated infrastructure plan (road, drainage, power generation facility, telecommunication facility)
- (b) Agriculture development plan and model projects (for vegetables and fruit such as tomatoes, spinach, melons, watermelons) and construction of an agriculture extension center
- (c) Small and medium scale industry promotion plans and model projects (construction of a workshop for cement and a general workshop)
- (d) Housing plan and housing construction model projects (500 units)
- (e) Solar panel project for Bedouin (100 households)
- (f) Capacity development for regional government and related implementing agencies.

CHAPTER 6 ORGANIZATIONS FOR RECONSTRUCTION OF IRAQ

6.1 Government Organizations of Iraq

The government organizations in Iraq that are related to reconstruction of Iraq can be summarized as shown in the table below. The Ministry of Planning and International Development is considered the most important organization. It is responsible for coordination with the UN, other donors, ministries in Iraq and the various sectors being targeted for reconstruction. It is considered that bi-lateral assistance will proceed by first discussing the sectors for reconstruction and their priorities with the Ministry of Planning and International Development and then discussing the issues with the ministries responsible for the respective sectors.

According to the sub-contractor of the Study, even though administrative management skills of government organizations are high, knowledge of the latest technology is lacking because the modern technology and know-how has not been upgraded for about ten years since the first Gulf War.

Table 6.1.1 Government Organizations Related to Reconstruction of Iraq

No.	Sectors	Related Government Organizations
1	Donors, International Cooperation	1) Ministry of Planning and International Development
2	Ports, Airports	2) Ministry of Transportation (MOT) 3) State Organization of Iraq Port (SOIP)
3	Roads, Bridges, Railways, Urban transportation	1) Iraq Republic Railway (IRR) 2) SEITCP (State Enterprise for Implementation of Transport and Communications Projects) 3) MOT 4) Ministry of Public Works
4	Water resources, Irrigation	1) Ministry of Water Resources 2) Ministry of Public Works 3) Ministry of Irrigation (MOI) 4) Ministry of Agriculture (MOA)
5	Water supply, sewerage, waste treatment	1) Ministry of Public Works 2) Baghdad Municipality Office 3) Basra Municipality Office 4) Karbala Municipality Office 5) Najaf Municipality Office 6) Kut Municipality Office 7) Nasiriyah Municipality Office 8) Samawah Municipality Office 9) Umm Qasr Municipality Office
6	Education, Health	1) Ministry of Education 2) Ministry of Higher Education and Scientific Research 3) Ministry of Health 4) Kimadia 5) NGO Coordinating Committee in Iraq (NCCI) 6) Baghdad Municipality Office 7) Basra Municipality Office 8) Karbala Municipality Office 9) Najaf Municipality Office 10) Kut Municipality Office 11) Nasiriyah Municipality Office 12) Samawah Municipality Office 13) Umm Qasr Municipality Office
7	Telecommunication	1) Ministry of Communication
8	Industry	1) Ministry of Oil 2) Ministry of Industry
9	City Planning	3) Baghdad Municipality Office 4) Basra Municipality Office 5) Karbala Municipality Office 6) Najaf Municipality Office 7) Kut Municipality Office 8) Nasiriyah Municipality Office 9) Samawah Municipality Office 10) Umm Qasr Municipality Office

Organization charts of the main ministries are shown below.

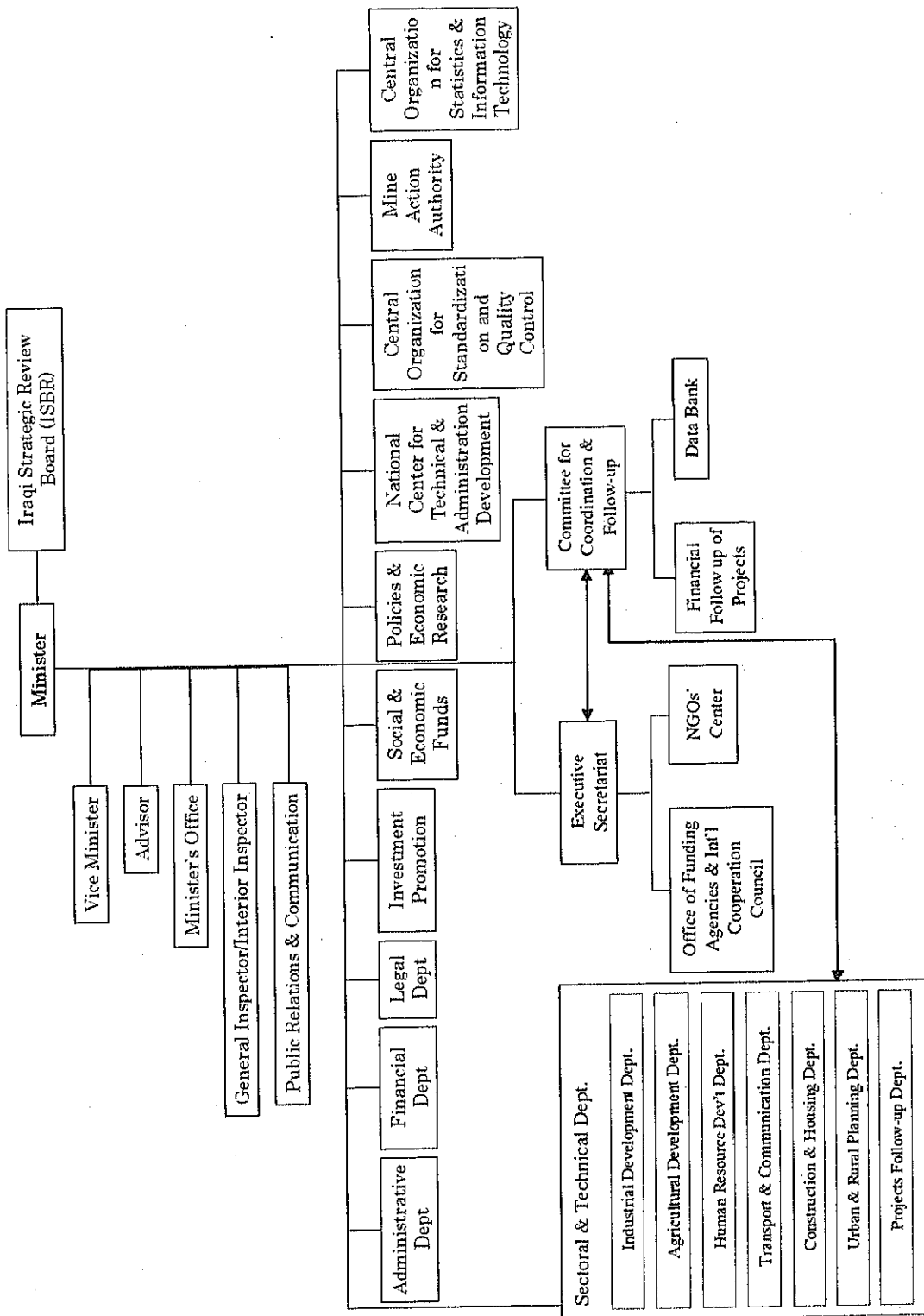


Figure 6.1.1 Organization Chart of the Ministry of Planning and Development Cooperation

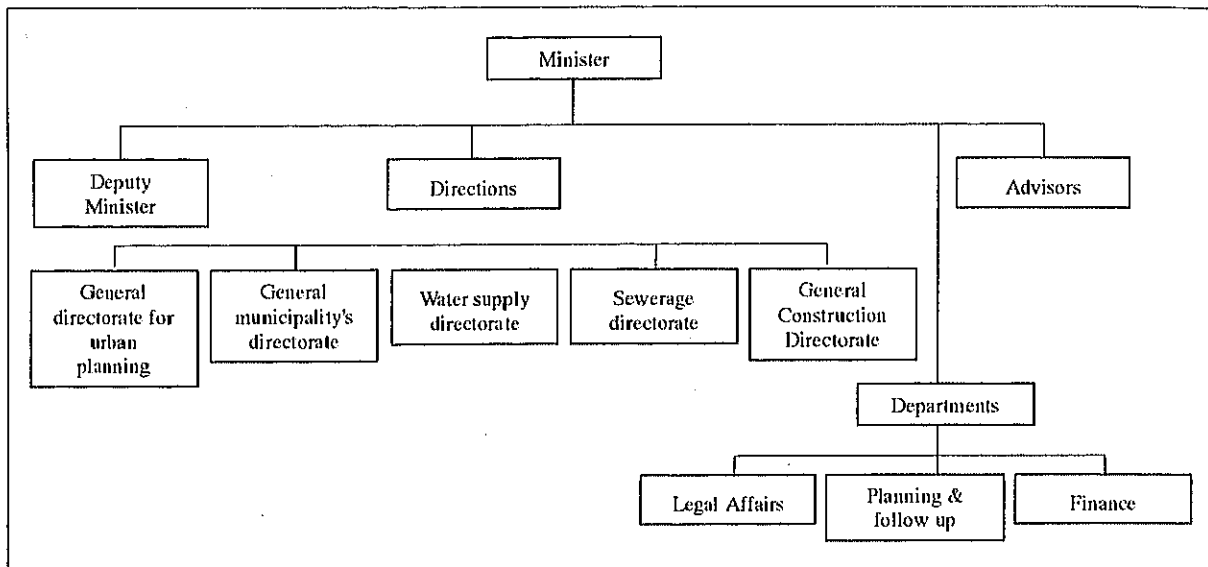


Figure 6.1.2 Organization Chart of the Ministry of Transportation

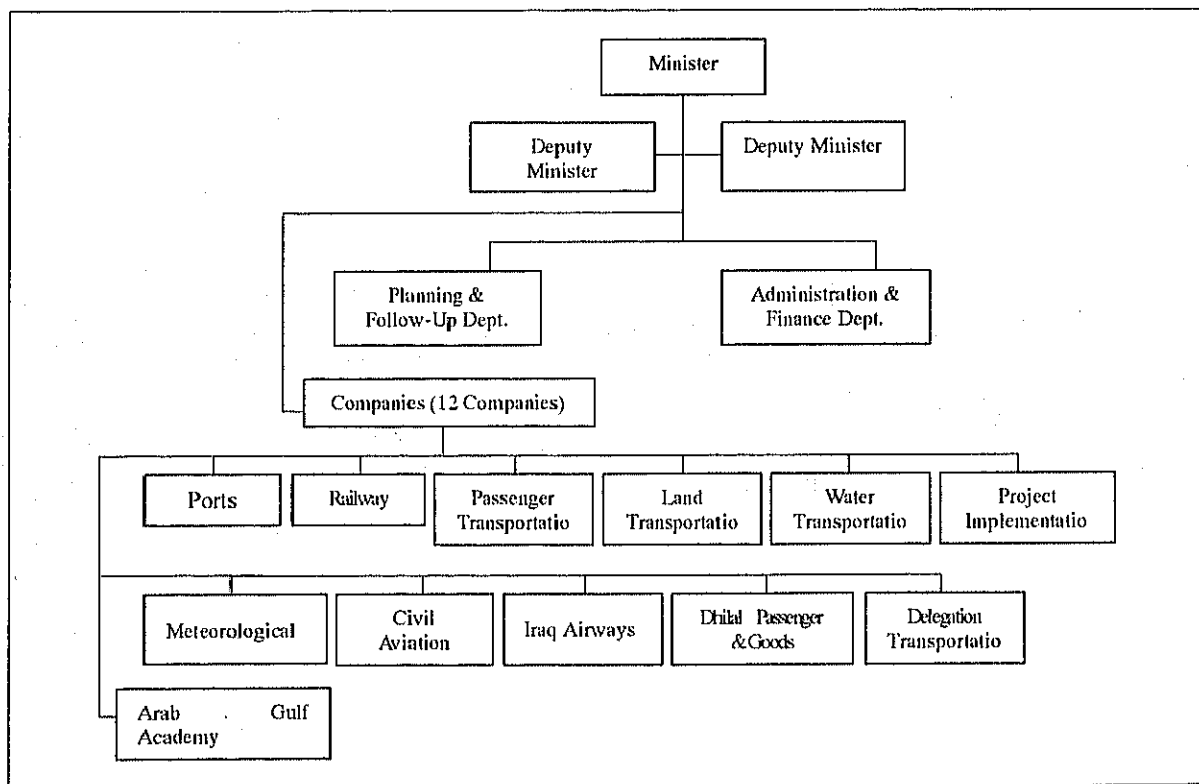


Figure 6.1.3 Organization Chart of the Ministry of Public Works

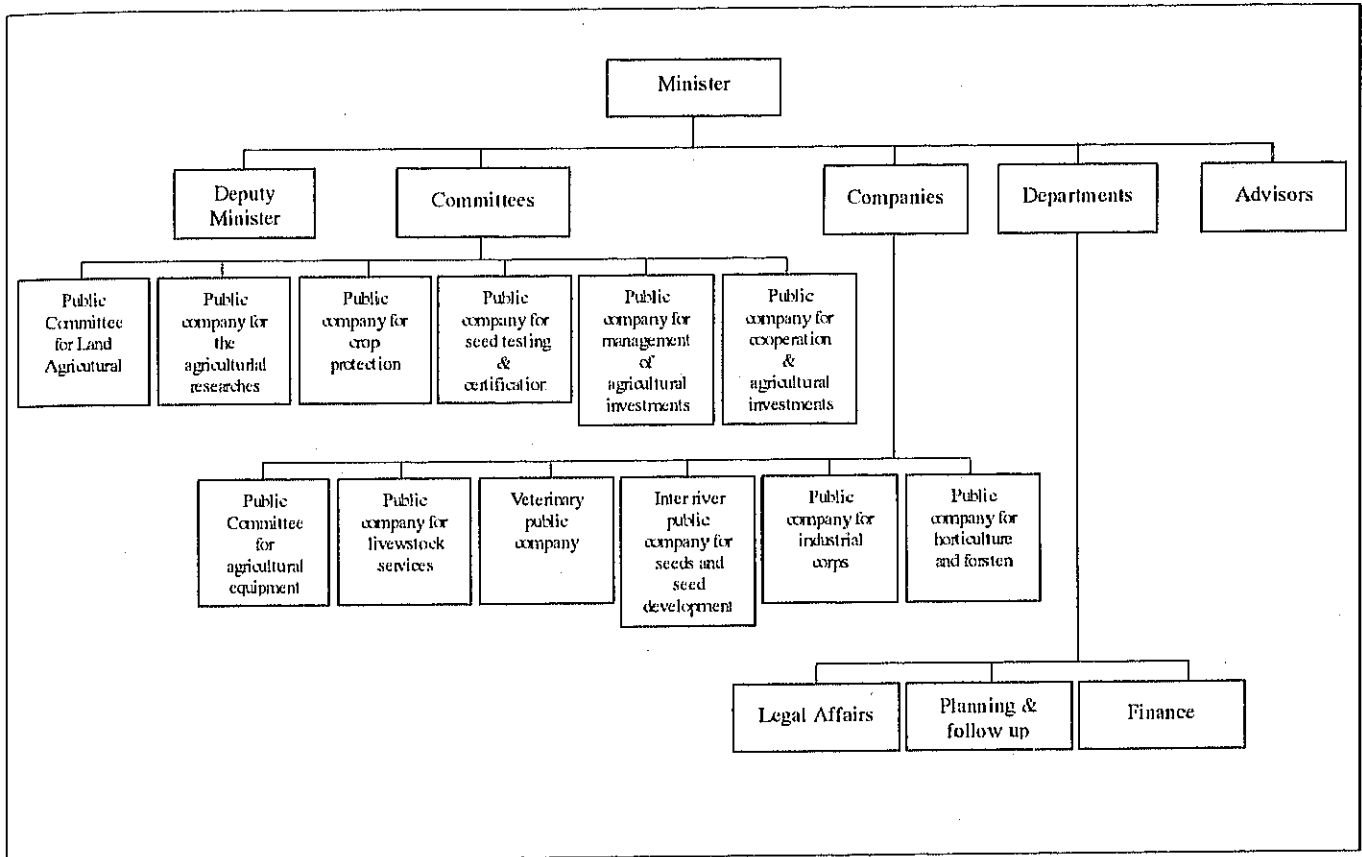


Figure 6.1.4 Organization Chart of the Ministry of Agriculture

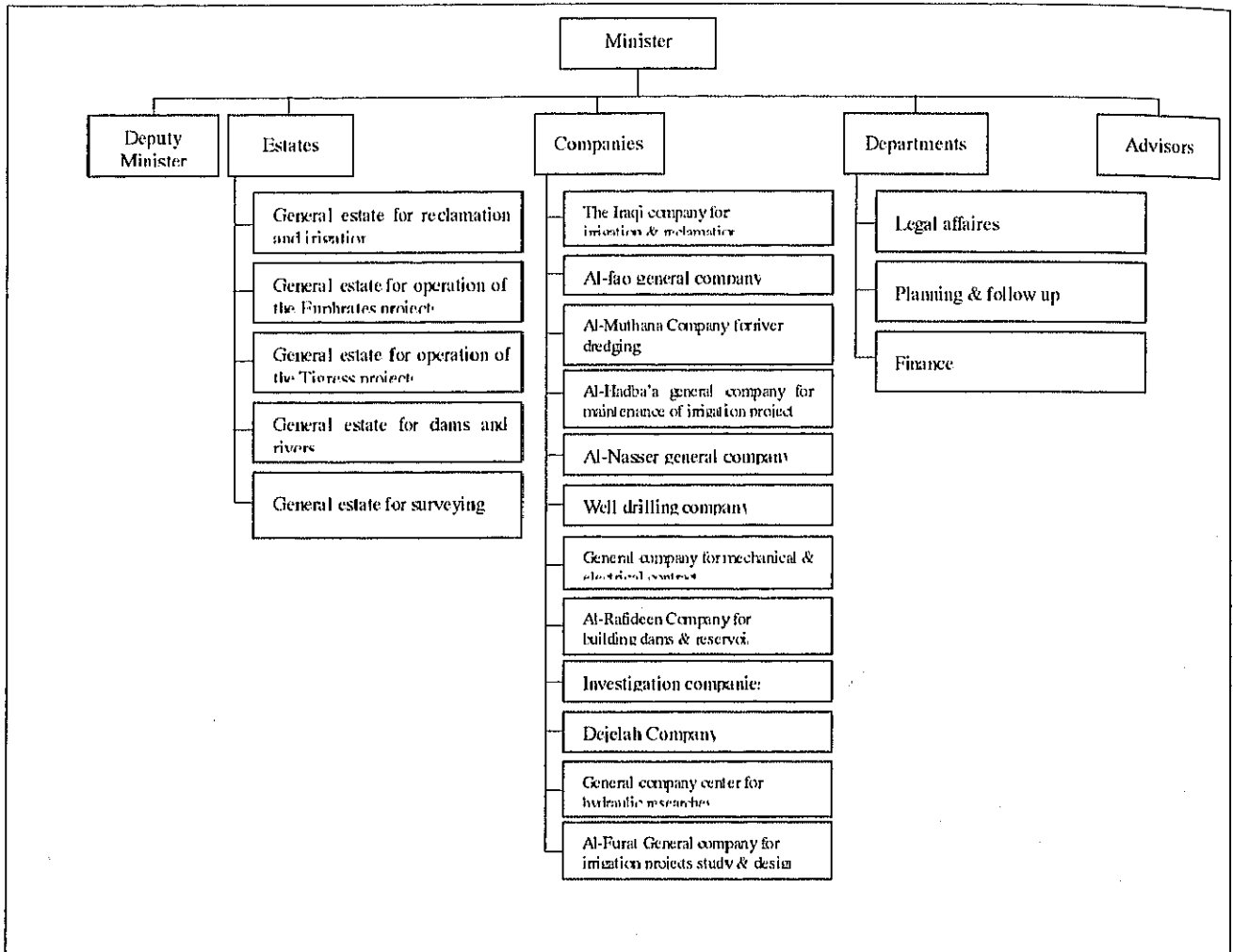


Figure 6.1.5 Organization Chart of the Ministry of Water Resource

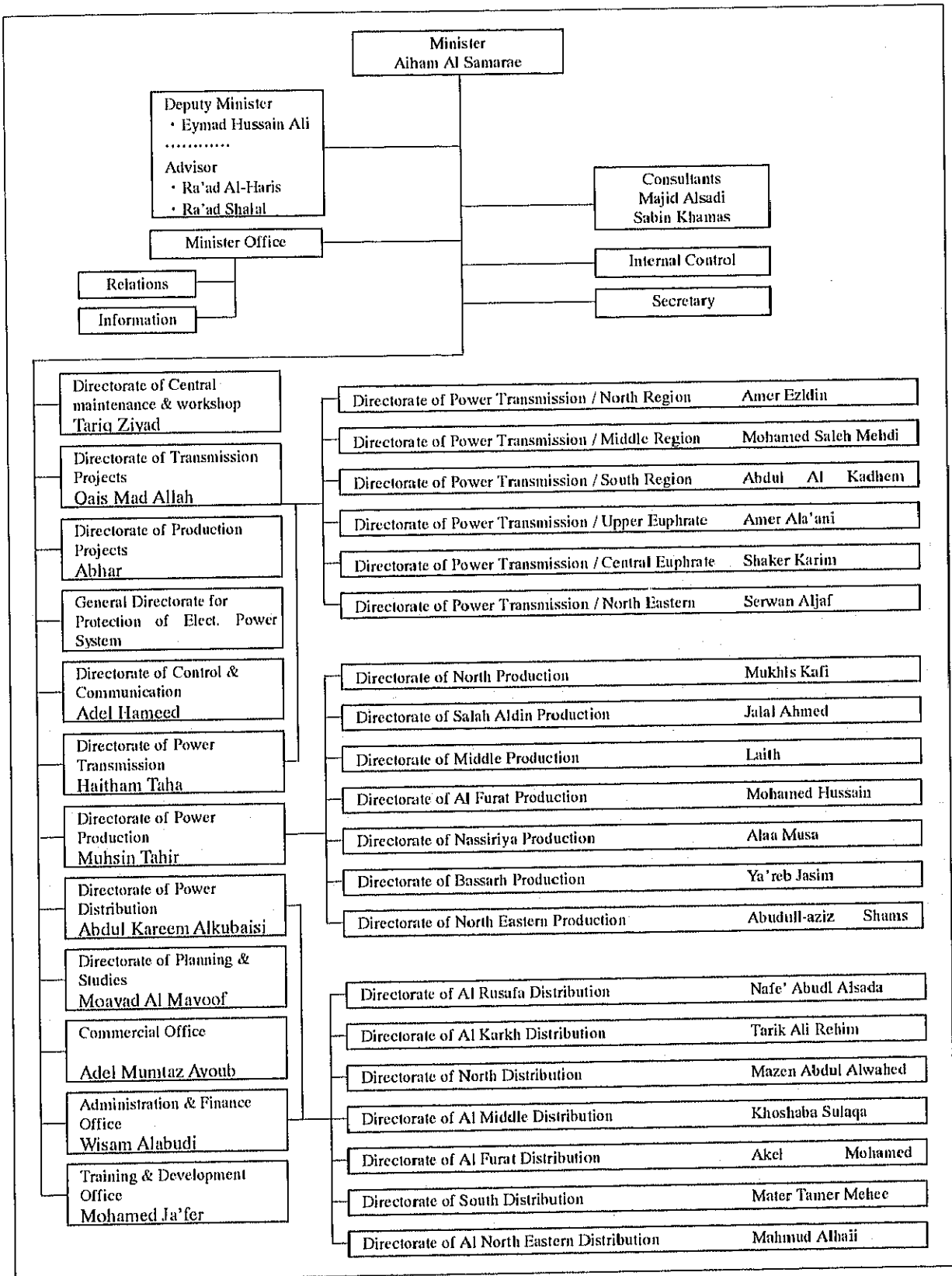


Figure 6.1.6 Organization Chart of the Ministry of Power

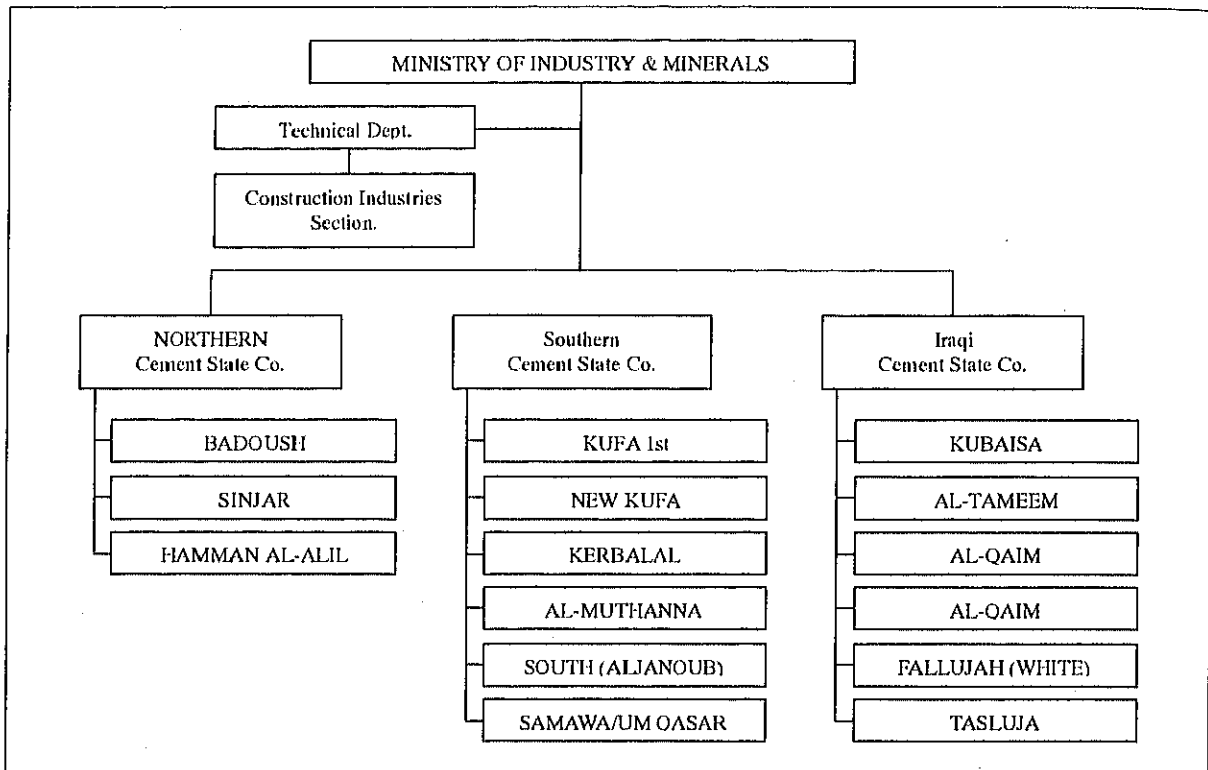


Figure 6.1.7 Organization Chart of the Ministry of Industry and Minerals (Cement State Corporation)

6.2 NGOs Involvement in Reconstruction of Iraq

NGOs are active in providing a variety of humanitarian assistance (particularly food provision, medical care/health, education, etc.) in Iraq. According to the Humanitarian Information Center, as many as 94 NGOs are active in Iraq as of March 2004.

Table 6.2.1 List of NGOs

	Organisation	Acronym	LastName	FirstName	Tel	E-mail	Address
1	Acorn		Hyde	Andrew		amhydeik@yahoo.com	
2	ACTED	ACTED	Laloge	Laurent	00 873 76 28 24 045	laurentlaloge@atge.autorail.com	
	ACTED	ACTED	du Pre	Cyril	00 88 216 63 22 57 28	Cyril.dupre@acted.org	
	ACTED	ACTED	Nicolas	Stephane		stephane.nicolas@acted.org	
3	Action Contre le Faim	ACF	Milhorgne	Karine		acfbaghdad@yahoo.fr	
	Action Contre le Faim	ACF	Berthy	Ludovic	00 87 17 620 13153	acfbaghdad@yahoo.fr	Baghdad
4	Adventist Development and Relief Agency	ADRA	Pittman	Sharon	962-6 5155570	iraqresponse@yahoo.com	
5	Aide Medicale Internationale	AMI	Mofarah	Kasra	Thuraya 00 88 216 50 60 23 77,Office 00 870 76 23 22 575	amirak@inmarsat.francetelecom.fr	Flowers Land Hotel, opposite to Al-Hamra Hotel
6	American Friends Service Committee	AFSC	Trotochand	Mary	00 88 216 63 22 64 8	iraq.afsc@cyberia.jo	
	American Friends Service Committee	AFSC	McDowell	Rick	00 88 216 63 22 64 8	iraq.afsc@cyberia.jo	
7	Amnesty International	AI			0088-216-2115 9713, 0088-216-5210 0179		
8	Arbeiter-Samariter-Bund	ASB	Happe	Peter		Happehamburg@gmx.de	
9	Architects for People in Need	APN	Hilger	Andrea	00 88 216 63 22 52 78		
	Architects for People in Need	APN	Christoff		00 88 216 63 22 52 78		
10	CARE International	CARE	Morris	Anne	00 88 216 63 22 02 36 / 00 873 763 625 613 / 00 9626 552 7921 5533 702	annen@care.org.rw	
	CARE International	CARE	Chisholm	Megan	00 88 216 63 22 02 36 / 00 873 763 625 613	careiraq@hotmail.com	Hay Khadra
	CARE International	CARE	Hassan	Margaret	00 88 216 63 22 02 36 / 00 873 763 625 613	care11@skyfile.com / care12@skyfile.com	
11	Campaign for Innocent Victims in Conflict	CIVIC	Jarrar	Raed	00 88 21 66 3225 770	CIVICinIraq@yahoo.com	
12	Child Fund Iraq	CCFI	Pendleton	Andy	00 88 16 314 517 69		Baghdad
	Child Fund Iraq	CCFI	Clark	Jill	00 88 16 31 45 17 68	jmclark@ccfusa.org	Hijaz Hotel, Al-Musbah section, not far from

	Organisation	Acronym	LastName	FirstName	Tel	E-mail	Address
							Baghdad Towers
		CCFI	Abdullah	Baham			
	Child Fund Iraq	CCFI	Bernstein	Chanon	00 88 16 3145 1768	chanon@ccfusa.org	Hijaz Hotel, Al-Musbah section, not far from Baghdad
13	Cooperative Housing Federation International	CHF	Duneman	G.Eric	(301)587.4700	geduneman@yahoo.com	
14	Christian Aid	CA	Kirthisingha	Rehana	00 88 216 50 60 10 15	rkirthisingha@christian-aid.org	Karaea-Salman Fayek St.
	Christian Aid	CA	Morton-King	Anthony	00 88 216 51 10 95 39	amorton@christian-aid.org	Karaea-Salman Fayek St.
15	Concern Worldwide	Concern	Kilkenny	John	00 88 216 21 15 88 96	jj_kilkenny@yahoo.co.uk	
	Concern Worldwide	Concern	Connell	Denis	00 88 216 21 15 87 02	connelldenis@yahoo.co.uk	
16	Cooperazione Internazionale	COOPI	Dubajic	Branko	00 88 216 51 11 06 20	tarditi@coopi.org	
	Cooperazione Internazionale	COOPI	Tarditi	Giorgio	00 88 216 51 11 06 20	tarditi@coopi.org	
17	Counterpart International		Bayiz	Galawezh		galawezh@counterpart.org	
18	Danish Refugee Council	DRC	Sorensen	Peter	00 882 165 4260 540 00 882 165 4260 555	sat2@drc.dk	
	Danish Refugee Council	DRC	Loftkjaer	Bo	00 882 165 4260 555	sat2@drc.dk	
19	Dortmunden Helfen Kurden	DhK	Yaqub	Elia			
20	Dutch Consortium	DC	Frances	Ayah	225 1175	dc_erbil@yahoo.com	
	Dutch Consortium	DC	Anwar	Dashty	225 1175	dashty2003@hotmail.com	
	Dutch Consortium	DC	Ros	Lex	225 1175	wassi030@wxs.nl	
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Coordination Committee (NCCI) was established in Baghdad to coordinate NGOs for the purpose of supporting humanitarian needs efficiently.

The NCCI, however, is providing little functional coordination, and NGOs seem to be operating individually.

Cooperation with NGOs is needed as much as possible for the reconstruction of Iraq. Some activities of NGOs are understood and cooperation is possible as summarized in Table 6.2.1 below.

Table 6.2.2 Method of Cooperation with NGOs

Name of NGOs	Activities	Cooperation Style
CARE International	Education (rehabilitation of schools), water tankers, health/medical care, food, consulting/capacity building of NGO.	Implementation rehabilitation of schools and water supply facilities as a sub-contractor, provision of training for health/medical sector projects as a sub-contractor, moderator for third country training.
ISLAMIC RELIEF AGENCY (ISRA)	Rehabilitation of primary schools (water, power, painting), provision of desks, agriculture sector (training for tomato growing), health (provision of medical supplies and blankets).	Rehabilitation of schools and water supply facilities as sub-contractor, provision of training for health/medical sector projects as a sub-contractor, transporting health sector (medical care, blanket) as a sub-contractor.
ACTED	Water and sanitation, schools construction in Samawa	Collection of data on socio-economic conditions, construction of local roads and drainage as a sub-contractor