

Japan International Cooperation Agency

**Basic Study on  
the Program Formulation for  
Reconstruction and Rehabilitation of  
Infrastructure  
in Iraq**

**Final Report**

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March 2004

**NIPPON KOEI Co., Ltd.  
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## PREFACE

In response to the pressing needs to restore infrastructure destructed during the recent war in Iraq, Japan International Cooperation Agency (JICA) decided to conduct "A Basic Study on the Program Formulation for Reconstruction and Rehabilitation of Infrastructure in Iraq". JICA dispatched a study team to Jordan twice between December 2003 and March 2004. Being a base for formulating support program for Iraqi reconstruction by Japanese Official Development Assistance (ODA), the study aims at collecting and analyzing information on present conditions of Iraqi infrastructure and related administrative organs as well as information on movement of other international organization and donors.

Based on information gathered from concerned persons in and out of Iraq, as well as other investigations, the study team carried out a basic survey for formulating a support program for urgent infrastructure rehabilitation and reconstruction in Iraq. The results of the survey are summarized in this report.

I hope that this report will help facilitate the anticipated Japanese assistance for Iraqi reconstruction and will enhance the friendly relationship between the two countries.

Finally, I wish to express my sincere appreciation to the officials concerned and the close cooperation extended to the study team.

March, 2004

Kazuhisa MATSUOKA

Director

Japan International Cooperation Agency

## LETTER OF TRANSMITTAL

It is with great pleasure that we submit to JICA the Final Report of the "Basic Study on the Program Formulation for Reconstruction and Rehabilitation of Infrastructure in Iraq" completed by our study team composed of experts from Nippon Koei Co., Ltd. and Pacific Consultants International.

Based on the contract with JICA, our study team carried out the study for about three months from December 19, 2003 to March 31, 2004. Stationed in Amman city in Jordan, the study team collected information on present conditions of Iraqi infrastructure and related administrative organs as well as information on movement of other international organization and donors. The collected information was analyzed for formulating a support program on infrastructure rehabilitation and reconstruction in Iraq.

I sincerely hope this report will be of value for facilitating Japanese assistance on infrastructure rehabilitation and reconstruction in Iraq in the future.

March, 2004

Akira TAKAHASHI

Team Leader

The Basic Study on the Program  
Formulation for Reconstruction and  
Rehabilitation of Infrastructure in Iraq





## **SUMMARY**

### **1 Outline of the Study**

- Immediately following the ceasefire in the Iraqi War declared in May 2003, the Japanese government completed a study entitled "Study of the Analysis and Collection of Basic Information, Iraq". This had been entrusted to Nippon Koei Co., Ltd by the Japan International Cooperation Agency (JICA) and was initiated by the Japanese government to provide support for the reconstruction of Iraq.
- Following the study, at the international conference on reconstruction held in Madrid in October, 2003 the Japanese government pledged a total of US\$5,000 million to support Iraq. This comprised US\$1,500 million in urgent grant aid assistance and US\$3,500 million for middle-term reconstruction support. The latter basically consisted of a Japanese yen loan, with governmental support ranging from urgent assistance to economic reconstruction in Iraq.
- The objective of this study was to conduct basic surveys to formulate a support program for Iraqi reconstruction focusing particularly on infrastructure. This would form part of the overall Japanese support to Iraq totaling US\$5,000 million. However, due to security concerns in Iraq three restrictions were imposed on implementation of the study. These included: i) no entry being possible into Iraq by the study team, ii) no entry into and departure from Iraq by the sub-contractors, and iii) no invitations for governmental officers and other concerned personnel in Iraq to foreign countries.
- Therefore, the study was carried out based on information collected as a result of:
  - i) field surveys in Jordan (twice) and Kuwait,
  - ii) sub-contracted surveys in Iraq, based on meetings with both local people and governmental officials as well as field surveys on the present condition of existing infrastructure damaged during the war,
  - iii) meetings with UN-related organizations and NGOs, and
  - iv) discussions with private corporations in Japan and other foreign countries familiar with conditions in Iraq.

In addition, the study team took the opportunity to meet Iraqi government officials as much as possible to exchange opinions on their visit to Jordan.

## **2 Policy on Formulating Urgent Infrastructure Reconstruction Support Program**

- A support program was formulated based on the seven main policies listed below:
  - i) Formulation of an action plan targeting 2007 based on emergency needs and the mid- and long-term viewpoints.
  - ii) The target areas are Baghdad and the southern region.
  - iii) The target sectors include transportation, water resources/irrigation, urban infrastructure (water supply, sewerage, solid waste management, housing, and communication), health and medical care. Agriculture, industry and the swamp environment in the southern region were additionally considered.
  - iv) Focusing on the needs of the Iraqi people and Iraqi government, and establishing a base for economic reconstruction and job creation.
  - v) Considering sustainability of emergency grant assistance (2004) and activities of the Japanese Self-Defence Force. From an efficiency viewpoint, priority will be given to rehabilitation and expansion of those infrastructure development projects executed through Japanese ODA or Japanese companies where reconstruction needs are still high.
  - vi) A comprehensive approach is applied considering the synergies among projects of each sector.
  - vii) Giving importance to cooperation with other donors such as the UN and others.

## **3 Projects for Urgent Reconstruction and Rehabilitation of Infrastructure in Each Sector**

### **3.1 Airport and Port**

- Although damage due to the war was relatively light, the airport sector has a problem related to poor maintenance of facilities. This resulted due to a shortage of funds for the purchase of necessary spare parts and equipment coupled with restrictions on importing advanced technology equipment over the past thirteen years and more. The air traffic control system does not meet the required standards set by the International Civil Aviation Organization (ICAD). The reconstruction program therefore focuses on development of Air

Navigation Aid Instruments and Landing Guide Instrumentation as well as human resource development of airport staff. In addition, an inventory survey on present conditions of facilities including airports, aircraft and air traffic control systems as well as a national airport development master plan study is included.

- The main problem in the port sector is the difficulty for larger vessels to operate in major ports. This reflects insufficient dredging and improper facility maintenance over the last ten years. The existence of sunken ships and underwater mines are also major concerns. Deteriorating and malfunctioning work and dredging ships, inefficient loading works due to outmoded port facilities, and corroded or lost beacons are also noted as problems. In terms of reconstruction support, high priority is given to the provision of necessary equipment and facilities for proper port operation, and rehabilitation of navigation canals. A national port development master plan study is also proposed in respect of the mid- and long-term timeframes.

### **3.2 Road, Railway and Urban Transportation**

- The main problems in the road sector include damage to road pavements and bridges resulting from insufficient maintenance, the destruction of bridges along main roads during the war, general deterioration of roads, bridges and vehicles, a shortage of traffic signals, increases in traffic accidents due to poor driving mannerisms, and a sudden increase in the number of vehicles. The latter has resulted from a growing number of used car imports since May 2003. Damage to infrastructure such as railroad tracks, signals, communication systems and trains, a decline in rehabilitation capabilities due to poor operation of factories producing railroad sleepers, and poor management capabilities of railway company staff are considered to be constraints in the railway sector. The condition of urban transportation has clearly worsened due to a lack of urban transportation infrastructure to meet population demands. This includes the rapid increase in the number of vehicles following the war, frequent suspension of traffic signal operation due to power cuts, and lack of a mass public transportation system such as bus or urban railway networks.
- Following the request from the Iraqi government, reconstruction support includes both rehabilitation and new construction/installation of transportation-related facilities, provided the selected projects are clearly required and no feasibility study is needed. Taking account of the relatively

short construction period with no requirement for advanced technology on design and construction work, projects proposed include road and bridge rehabilitation and construction projects in the road sector, reconstruction of a PC sleeper factory and new construction of railroad projects in the railway sector, construction of new urban roads, overhead crossings and car parking facilities, installation of traffic signals, capacity building of city bus transportation, and an integrated urban transportation master plan in the urban transportation sector.

### **3.3 Water Resources, Irrigation, Agriculture and Southern Marshland**

- In the water resources and irrigation sector, the following factors are considered to be of concern and must be reviewed: (i) water demand and water distribution, (ii) dam safety due to improper maintenance, (iii) efficient use of existing water resource facilities, and (iv) an international water treaty. A reconstruction support program includes development of an integrated water management system to achieve efficient use of water resources together with rehabilitation of existing main dams, which are not properly maintained at present. The role of Japanese assistance needs to be clarified through discussions with CPA and USAID.
- A number of issues are identified in the irrigation and agriculture sectors. Only half the agricultural land is irrigated, as irrigation facilities including pumps are not properly maintained. Agricultural production decreased by some 70% from 1997 to 2002 due to aggravated salt damage. The reconstruction program consists of rehabilitation of existing systems and facilities to achieve appropriate water use, promotion of water-saving agricultural techniques, and soil amendment as a countermeasure to salt damage.
- The natural environment, ecological system and socio-cultural heritage in the marshland areas have been lost or greatly affected by dam development and water supply and drainage projects. Integrated studies for conservation and restoration of marshlands are required to define countermeasures.

### **3.4 Water Supply, Sewerage and Solid Waste Management**

- Quality of supplied water has deteriorated due to a decrease in the volume of water supply, which resulted from a lower rate of facility operations as well as insufficient treatment in the treatment plant. Major issues identified in the sewerage sector include low diffusion rates in northern, central and southern

cities ranging from 0% to 10% (these compare to a rate of around 80% in Baghdad), and sanitation problems resulting from discharge of untreated sewerage into rivers due to malfunctioning of the system during power shortages. Although garbage was previously collected in Baghdad as well as other major cities, no proper sanitary landfill facilities now exist. Moreover, as parts of garbage collection vehicles are now often stolen and resold, the rate of garbage collection has reduced and garbage is dispersed across the city. Common problems observed in water supply, sewerage and solid waste management include lack of electricity and fuel, lack of equipment required for maintenance, lack of human resources and educated personnel, deteriorating facilities, unplanned and improper facility construction, and regional disparity in development.

- The reconstruction program consists of organizational reform, human resource development through training, improvement of water supply and distribution systems, improvement of sewerage facilities and solid waste management, and formulation of a master plan for the water and sanitation sectors to achieve planned development.

### **3.5 Communication**

- The communication system in Iraq did not develop greatly during the Hussein regime, reflecting a lack of investment in this sector. The communication network was also largely destroyed during the recent war. As a result, support for reconstruction of the basic communication system, such as the microwave communication network, broadcasting network and postal system are urgently required. Concurrently, mid- and long-term strategies for communication development are necessary that would take into account recent rapid technical advances.

### **3.6 Housing and Urban Development**

- A shortage of residences (about 1.4 million) and existence of slum areas are the biggest concerns in the housing and urban development sectors. A reconstruction program focused on restoring administrative services through human resource development, modernizing and expanding the housing finance sector, and reconstructing housing-related industries is required.

### **3.7 Health and Medical Care**

- Although Iraq previously had high levels of medical care, health indicators have deteriorated due to decreases in government expenditure in this sector.

This followed economic sanctions, a 'brain-drain' of medical doctors, and deterioration in medical facilities and equipment. Reconstruction support consists of development of general hospitals, at least one secondary level medical care facility in each province, development of educational hospitals including at least one in each region of the northern, central and southern areas, and development of nursing colleges.

### **3.8 Education**

- On primary and secondary education, the issues of major concern include a rapid decrease in schooling rates (due to a significant decline in investment in this sector following economic sanctions), inequality in schooling opportunities (as represented by low schooling rates of girls), lack of a proper education system and curriculum, insufficient and deteriorating school infrastructure, lack of teachers, and a decline in overall standards. Higher education has not functioned properly due to restrictions on access to information during the period of economic sanctions. This negatively impacted on the introduction of advanced technology, educational exchange and cooperation activities. Support for primary and secondary education consists of reconstruction of school buildings and reeducation of teachers. For higher education, reconstruction of Baghdad and Basrah Universities, restructuring of school curriculums in technical colleges, and identification of gaps between human resource supplies and demand are included.

### **3.9 Industrial Infrastructure**

- Declining productivity due to lack of spare parts, electricity shortages, robberies and serious air pollution (with increasing sulphur contamination caused by partial operation of oil processing factories) are identified as problems in the oil and natural gas industry. Urgent rehabilitation of facilities is included in the reconstruction support program. Development of the oil and natural gas industry contributes directly to employment creation since this sector is the core industry in Iraq.
- Shortage of raw materials and spare parts, lack of electricity, ongoing theft, and declines in production capabilities caused by these factors are noted as problems in the industrial sector (including the cement and chemical fertilizer sectors). Urgent rehabilitation of factories and facilities is the core of the urgent rehabilitation policy. Development of this sector is quite important since demand for cement and fertilizer products is expected to grow rapidly as the processes of reconstruction and food production increase.

### **3.10 Integrated Regional Development**

- Problems in the regional development sector include lack of master plans for the five major cities of Kerbala, Najaf, Mosul, Basrah and Kirkuk. There are no plans for land use and road and water supply development for those cities. For Samawa, where urgent humanitarian aid is being carried out by the Japanese Self-Defence Force, an integrated development plan is also required for its continuous support. Reconstruction support in this sector is focusing on formulation of integrated regional development master plans for those areas.

## **4 Support Program for Urgent Infrastructure Reconstruction**

- As a result of formulating the support program for urgent infrastructure reconstruction in Iraq, 106 potential projects have been selected. This was based on consideration of the problems in each sector outlined above. The following five factors were taken into account to ensure effective implementation of the program.

i) Urgent sub-program aimed at bringing about immediate effects

To bring about immediate effects, fifteen urgent infrastructure reconstruction projects are selected. Projects planned for implementation as urgent grant aid projects have a total cost of ¥50,500 million.

ii) Industrial infrastructure and agricultural reconstruction sub-program aimed at employment creation

Considering employment creation effects, nine industrial infrastructure reconstruction projects and three agriculture infrastructure development projects are proposed.

iii) Sub-program placing high priority on human resource development

To assist Iraqi engineers in implementing advanced technologies and know-how, six projects are formulated. These combine seminar-type and on-the-job training, in which human resource development is carried out in line with project implementation.

iv) Sub-program for southern region incorporating an integrated development approach

The effectiveness of infrastructure development projects would be increased by concentrating their implementation within certain areas,

particularly as multiple effects are expected. Based on this viewpoint, nineteen projects are proposed in Basrah and surrounding areas.

iv) Formulation of master plans from mid- and long-term viewpoints

Along with implementation of urgent projects, the study team recommended the formulation of twelve master plan studies in each sector focusing on the mid- and long-term timeframes.

## **5 Future Tasks**

- The following issues are identified as future tasks to be undertaken:

i) Further field surveys

The accuracy of this study is limited due to the restrictions imposed during its implementation.

ii) Discussion with concerned Iraqi officials

The scope of projects should be confirmed and refined based on discussions with concerned Iraqi government officials, including those from the Ministry of Planning.

iii) Human resource development

It is necessary to address the lack of access to advanced technologies that has occurred during the last ten to twenty years.

iv) Utilization of Japanese technology

It is important to utilize Japanese technologies, products and services in the reconstruction process to establish friendly relationships between Japan and Iraq.

v) Management of information

For effective and prompt implementation of reconstruction projects, information management should be unified.

vi) Prompt implementation

Prompt implementation is necessary for all reconstruction support projects.



# JICA Basic Study on the Program Formulation for Reconstruction and Rehabilitation of Infrastructure in Iraq

## Final Report

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## **CHAPTER 1 GENERAL OUTLINE OF THE STUDY**

### **1.1 Background of the Study**

Iraqi living conditions have been made very difficult as a result of economic sanctions since the first Gulf War and the recent Iraq War, the latter being initiated by the United States and the United Kingdom on 20 March, 2003 on suspicion of Iraq's retention and concealment of weapons of mass destruction. The rehabilitation of Iraq commenced soon after the declaration of the end of the war in May 2003.

Japan has already contributed to the infrastructure of Iraq through public-private cooperation. Following the collapse of the government of Saddam Hussein, the humanitarian and revival support from Japan started earlier than other countries. As a part of the support activities, in May 2003 Nippon Koei Co., Ltd. completed a study titled "Study of the Analysis and Collection of Basic Information, Iraq" at the request of the Japan International Cooperation Agency (JICA). Table 1.1.1 provides a summary of the results of the study.

In line with the size of its economy, Japan is expected to take a leading role in providing support to Iraq, ranging from urgent support through to long-term economic recovery. Therefore, the government of Japan will provide a total of US\$5 billion. Grant assistance of US\$1.5 billion will be mainly allocated to immediate reconstruction needs and priority will be given to areas related to the revitalization of living conditions, including power generation, education, water and sanitation, health and employment conditions, as well as the improvement of the security situation. The government of Japan will also provide up to US\$3.5 billion through concessional loans (yen loan) to meet the mid-term reconstruction, and will also focus on infrastructure development, including telecommunication and transportation.

Based on the background above, the current study comprised the following two activities: i) the collection and analysis of information on the current conditions of social infrastructure and administrative systems, and ii) the preparatory study for formulating assistance programs for the emergency reconstruction of Iraq with ODA from the government of Japan. The joint venture understands well that the Study will play an important and helpful role in formulating Japan's strategy for providing assistance to Iraq.

## **1.2 Objective of the Study**

The objective of the Study was to undertake the basic investigations necessary for formulating assistance programs in Iraq for the reconstruction of infrastructure. The approach followed in the Study was to collect and analyze data and information about Iraq in Japan and in countries neighboring Iraq. The output of the Study is a list of proposed assistance programs determined both through the analysis of information from the surveys as well as through interviews with relevant personnel.

## **1.3 Constraints for the Study**

The Study was performed under several constraints because of the security situation in Iraq. Therefore, compared with past similar studies, the qualities and quantities of information collected could be unsatisfactory. However, given the constraints, a maximum of data were collected and used effectively for formulating the overall support programs. Further investigations in Iraq and inspections of data collected will be required before execution of the proposed programs.

Constraints for the Study are described as follows:

- (i) The Study Team could not enter Iraq.
- (ii) Sub-contractors could not enter Iraq. Additionally, other sub-contractors in Iraq could not enter Jordan. Therefore, the data collected in Iraq was transferred to Jordan by telecommunication and compiled in Jordan. Finally, through this process, the Study Team obtained data originally collected in Iraq.
- (iii) The Study Team could not invite officers of the government of Iraq. Only when such officers happened to be in Jordan for other appointments was the Study Team permitted to make direct contact with them.
- (iv) The Study Team was permitted to collect any information on potential projects for the development of infrastructure services from private companies familiar with the details.

The investigation was not performed in Iraq because the Study Team could not enter Iraq, as mentioned above. Therefore, the Team identified potential projects for each sector based on: i) projects nominated by the government of Iraq and through discussions with officers of the government of Iraq residing in Amman, ii) Candidate projects identified in discussions between sub-contracted consultants and officers of the government of Iraq, iii) suggestion of projects based on proposals and ideas collected from CPA, USAID and NGOs that are

providing support activities in Iraq, and iv) suggestions by private companies familiar with the details of the conditions in Iraq.

Direct opinion exchanges with the government of Iraq were a very useful information source for project formulation during the Study. However, it was impossible to interview the officers in charge of executing the overall revival plans for each ministry. Therefore it may be necessary to pay attention to any differences in opinions expressed during interviews with officers of the government of Iraq. With regard to support programs proposed in each ministry, the Study Team often made contact with Iraqi government officers by e-mail to confirm, even if only partially, what they believed was necessary for their own development and improvement. However, telecommunication conditions were poor, and effective communication channels have not yet been built.

The government of Iraq strongly desired direct negotiations and information/opinion exchange with the Study Team. However, although our sub-contract consultants tried to cooperate with the University of Baghdad for the Study, it was often difficult to collect enough information from the government of Iraq because the relevant officers were overstretched. (A number of international or bilateral funding and donor agencies were carrying out similar studies concurrently, thus making heavy demands on the time of these Iraqi officials.)

#### **1.4 Flow of the Study**

Figure 1.4.1 shows a diagrammatic representation of the flow of the Study. Each phase of the Study is described as follows.

##### **1.4.1 Preparation Work in Japan**

- (1) Preparation and Planning of the Study
- (2) Review of past investigations

Past studies related to the support program for Iraq were reviewed in advance of carrying out "Field Work 1". The following two reports were particularly useful information resources.

- ① Analysis and Collection of Basic Data of Iraq, May 2003, Japan International Cooperation Agency (JICA)
- ② Joint Iraq Needs Assessment, October 2003, United Nations/World Bank

The Analysis and Collection of Basic Data of Iraq described the problems, basic concepts and directions for the assistance with reconstruction, and expected future cooperation in each sector. Based on the report, the concepts of the support programs were analyzed and the directions for formulating projects in each sector were decided.

The Joint Iraq Needs Assessment analyzed essential needs in 14 sectors, including all the sectors targeted in the Study, and presented a list of potential projects in the Study Area with an outlined cost of each project. The report was also a useful data source for understanding the requirements of the government for the revival and development of Iraq.

(3) Preparation for the employment of local staff

The Study Team arranged for the employment of local staff to undertake further investigations. To ensure the effectiveness of the data collection in Iraq, the Japanese consultants prepared detailed information specifications, mainly in the form of questionnaires, for investigating the actual requirements for the various items of infrastructure.

#### 1.4.2 Field Survey 1

To facilitate the short-term investigation, some of the Team members undertook Field Work I over ten days, between 21 and 30 December, 2003. The Field Work I accomplished the following things.

(4) Preparation of sub-contracts in the Study Area

So that the one-month Field Work II, which was to start from early February, could be conducted effectively the following matters relating to sub-contracts were discussed with the local staff.

- |                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>① Interviews with residents and public officers in Iraq</li><li>② Field investigation of conditions of damaged infrastructures</li><li>③ Collection of data and information of Iraq in Jordan and Kuwait</li></ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

(5) Study of existing organizations

The study of administrative organizations in Iraq was done in advance of Field Work II as the basis for planning support projects. Through the Study, sources of data on possible projects to develop social infrastructures in each sector were

identified.

(6) Surveys of procurement information and market prices

Surveys of procurement information and market prices were also undertaken in advance of Field Work II. Procurement information would be useful for calculating project cost estimates when formulating projects for each sector.

### 1.4.3 Preparatory Work in Japan 1

(7) Review of past materials and data collected in Japan

The Study Team analyzed in detail the available information. This primarily consisted of information from the report of Joint Needs Assessment (October, 2003), prepared by UNDP and World Bank, and the Analysis and Collection of Basic Data of Iraq (May, 2003), prepared by JICA. However, other sources of the latest information were obtained as much as possible.

Additional information about the requirements for infrastructure services and urgent rehabilitation was collected through interviews with private companies that had already provided infrastructure services before the Gulf War in Iraq and also with the offices of international organizations like the United Nations, World Bank and so on located in Japan. As a result of these reviews, the approach for the next phase, Field Work II, was confirmed and, together with the basic concepts of the support programs, was proposed to JICA.

Data and information related to the Study were collected and processed, focusing on the following points.

- |                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>① Potential projects for infrastructure development in Iraq</li><li>② Movement, activities, development directions, schedules of other donor organizations</li><li>③ Private organizations (enterprises, NGO and so on) inside or outside Iraq</li><li>④ Business procurement and marketing</li><li>⑤ Mapping and geography</li></ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Summarizing the works described above, the Study Team decided the survey approach for the Study and proposed questionnaires for collecting information in the Study Area for Field Work II.



(8) Purchase of satellite pictures and compilation of GIS data

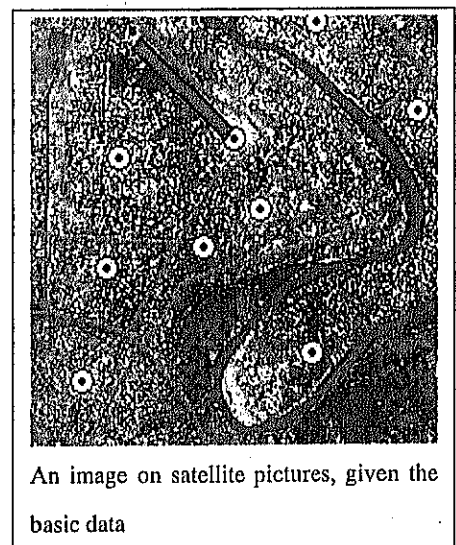
(a) Purchase of satellite pictures

The Study Team purchased satellite pictures of the capital, Baghdad, and the six main cities in the southern area (Karbala, Kut, Basra, Umm Qasr, Samawah, Najaf, Nasirivah). QuickBird satellite imagery was selected for its high resolution and because the images would be used to create GIS data at a scale of 1:5,000. On QuickBird, satellite pictures of the seven cities after the war, including Baghdad could be taken clearly. The pictures purchased were the latest after the war. A summary of the QuickBird imagery purchased for the seven cities is described as follows.

Satellite	QuickBird		
Country operating	United States		
Resolution	Multiple spectrum (colored): 2.44–2.88 m Panchromatic (black & white): 0.61–0.72 m		
Recurrence period for photos	Five days (on average)		
Existence of images captured since the Iraq War in the Study Area :  ○ : Yes × : No	Name of cities	Presence of pictures	Area of city covered (km <sup>2</sup> )
	Baghdad	○	400
	Karbala	○	70
	Najaf	×	0
	Kut	○	70
	Basra	○	120
	Samawah	○	80
	Umm Qasr	○	80
	Nasiriyah	○	80

(b) Compilation of GIS data

The GIS data of urban infrastructures created in the Study would mark all large buildings and, as much as possible, houses. Such data could enable the population and number of houses in each separate area to be estimated when the Team started to formulate plans for projects. Such estimates would be helpful to support the planning of potential projects in later steps. The data would also assist the Team to analyze proposed plans for the urban areas, water supplies, waste water systems, residential areas, schools and hospitals.



The original GIS data layers were created from the satellite pictures at the scale of 1:5,000.

(9) Decision of survey directions in the Study Area

Considering the results of study activities obtained in steps 1) to 8), the team finalized the schedules, needs for additional data and information, and potential sites for exploration.

**1.4.4 Field Survey 2**

Field survey II was performed in Jordan and Kuwait, which had the most information related to Iraq. The survey in Kuwait focused on the collection of information on transportation, procurement, and marketing and was undertaken between 19 February and 25 February. In Jordan, the survey was performed between 6 February and 3 March.

(10) Information collection from consultants, living in Iraq

In the first week of Field Survey II, the Team collected information from consultants in Iraq. The information collected was the results of needs assessment for revival support for each sector and residents in Iraq.

(11) Exchange of information and opinions with the Grant Aid Management

Department, JICA

Information and opinions were often exchanged between the Study Team and the Preparatory Study Team from JICA. These exchanges enabled data collection activities of the Study Team to be managed effectively.

(12) Opinion exchanges and interviews with NGOs and other donors in Jordan

The Study Team interviewed other international donors, Japanese private companies and officers of the government of Iraq visiting Jordan to assess the needs for each sector that are expected to be met through donors' activities. Appendix-I is the list of interviewees.

(13) Analysis of the information collected in Field Survey I

Information collected by sub-contractors in Field Survey I was summarized and analyzed. Through this compilation, the Study Team recognized what kind of additional information would be required and gave further directions to sub-contractors in Iraq to collect new information.

(14) Data collection in Kuwait

Three of the Team members entered Kuwait between 19 and 25 February and collected information on transportation and business conditions, such as procurement and marketing, in Iraq from the embassy of Japan, officers of the government of Iraq, private transportation companies and Japanese private companies in Kuwait.

(15) Writing the report of Field Survey 1 and 2

The Study Team summarized all of the activities in Field Survey 1 and Field Survey 2 and prepared a report. The report was submitted to JICA on 2 March, 2004.

**1.4.5 Preparatory Work in Japan 2**

(16) Analysis of projects related to infrastructure development projects in Iraq

The Study Team analyzed the availability of facilities and materials in Iraq, related to the reconstruction of infrastructures. Lists of candidate projects were prepared based on the results of data collection and analysis of field surveys in Jordan and Kuwait.

(17) Analysis of movement, policies and schedules of other donor organizations

For reference and to assist project selection, the Study Team obtained information about other donors' programs for immediate assistance, such as budget compilation, the regional distribution of funds and actions for past or current projects.

(18) Analysis of administrative organizations in Iraq

From the analysis of the various types of data and information described above, the Team gained an understanding of the present Iraqi administrative systems and abilities of the country's public officers. This was necessary to determine the potential for the participation of Iraqi officers in Japanese assistance projects for infrastructure reconstruction. As the result, the Team recognized that capacity building programs for officers would be necessary in future reconstruction assistance programs.

JICA conducts various methods of capacity building: technical cooperation on

projects, training programs in Japan or other countries, or delegation of professionals. The necessities and possibilities of capacity building programs are to be examined in future stages of project formulation.

(19) Analysis of private organizations (private companies, NGOs and so on) in  
Iraq

A basic information resource was created to prepare for actualizing projects. The types of information collected mainly included the abilities and operating scales of private organizations like consultants, construction companies, and NGOs in or outside Iraq. Generally, private organizations, including NGOs, were regarded as essential sources of local information, even after the Study finished. Therefore lists were prepared specifying what kinds of activities could be done by each organization and contact details.

(20) Analysis of information related to procurement

The basic information required for formulating plans was collected: availability of construction materials in or outside Iraq, possible processes from purchase orders to acquisition of those materials, and market prices. The Team used this information for calculating project costs and planning when or how to start construction works.

(21) Construction of GIS data resources based on information collected in Field  
Survey 2

In the targeted seven cities, including Baghdad, the Team mobilized sub-contracted consultants to verify the actual positions of main facilities, (city councils, hospitals, power plants, stations, bus terminals, markets, schools, water filtration plants, sewerage plants, and parks) on the satellite pictures directly with public officers in the cities. In each targeted city, maps of urban districts were already prepared with the financial support of the United Nations and displayed on web sites. However, such maps did not include detailed geographical information about public facilities for residents. Therefore, the Team attempted to undertake geographical verification in detail and added the information to the GIS data resources.

Additionally, the Study examined the need for work to assist with the future improvement of geographical information systems. The following results of this

examination are listed and described in detail in Chapter 8.

- ① Set up equipment and materials for collecting geographical information and education of technicians and technical guidance
- ② Proposing how to arrange and effectively use existing geographical information and GIS data
- ③ Suggestions for the utilization of geographical data in operations and in formulating assistance programs

(22) Analysis of other information

The assessment of environmental or social impacts will be required for nominated projects. The Team tried to acquire as much information as possible related to such assessments.

The formulation of assistance programs included the examination of methods of project operation and availability of sub-contract consultants in Iraq and neighboring countries. (This is because of restrictions on Japanese personnel entering Iraq). As a result of examinations described above, some potential projects were identified. They include preparatory field surveys for formulating master plans for the targeted cities, harbor rehabilitation, machinery supply and technical training, and supply of equipment required to start the operation of factories and telecommunications.

(23) Examination of assistance programs for emergency rehabilitation

From the analyses above, the Study Team formulated emergency assistance programs utilizing ODA, OOF and other funding sources of the Government of Japan in southern Iraq (Karbala, Kut, Basra, Umm Qasr, Samawah, Najaf, Nasirivah). The emergency programs are those that would be implemented in 2004, while mid-term assistance programs would be implemented up until 2007.

(24) The presentation of survey results

On 26 March, 2004, a presentation was held to show survey results of Field Survey 1 and Field Survey 2 to companies. The presentation included the results of all the surveys in the Study, explanations of possible assistance programs, and proposed candidate projects in each area of social infrastructure.

(25) Finalization and submission of the final reports

At the end of March 2004, the final report containing the summary of all the survey described in detail in 1) - 24) was submitted to JICA.

**1.5 Lessons for the Next Step**

To realize the assistance programs formulated in the Study, it will be essential to undertake more detailed inspections and finalize the contents of proposed projects more clearly. In consideration of the security problems in Iraq, it would be desirable to adopt the following policies.

- (i) The Study Team should be provided opportunities to officially engage public officers of the government of Iraq to enable more frequent and robust exchanges of opinion and information with the Iraqi officers in charge of the reconstruction projects proposed by donors.
- (ii) The Study Team should be allowed to have sub-contracted consultants enter or exit Iraq more freely. Most of the Iraqi consultants have had no contact with other countries for almost 20 years, and they do not have enough knowledge of the survey methods of international organizations or donor countries. It may be fruitful and effective for sub-contracted Iraq consultants to carry out field surveys in Iraq under the direct guidance of consultants from third countries used to business related to international development assistance.
- (iii) The Study Team should be allowed to carry out short-term field surveys provided there is no security problem. At the moment, though, that appears to be impossible. Once possible, though, it will be helpful to realize assistance programs more smoothly with field surveys in the target areas and exchanges of opinions and information with the government of Iraq.

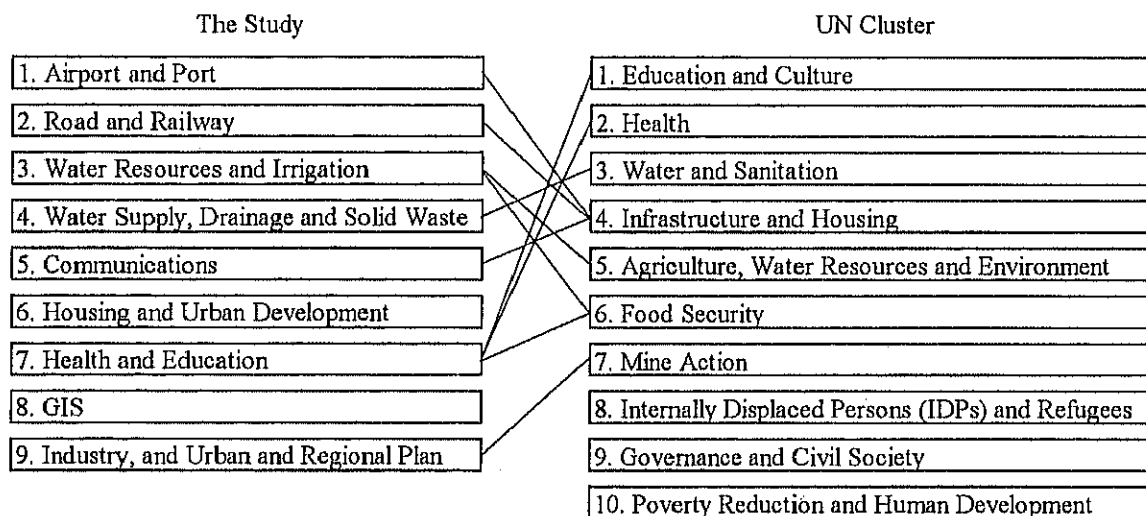
**1.6 Study Team Members and Relation to UN Cluster**

Members of the Study Team are shown below.

Name	Sector
Akira Takahashi	Team Leader/Current Assistance
Sato Jun	Transportation 1 (Airport, Port)
Tastuya Masuzawa	Transportation 2 (Road, Bridge, Railway, Urban Transportation)
Ken Nishino	Water Resources, Irrigation
Tomoyuki Kuroda	Healthcare, Education
Shozo Kawasaki	Procurement, Price and Cost/Urban Infrastructure 1 (Communication)

Shoichi Kobayashi	Procurement, Price and Cost/Urban Infrastructure 2 (Housing)
Tetsuya Izawa	Urban Infrastructure 3 (Water and Sewerage, Solid Waste)
Kenichi Tanaka	Geographic Information, GIS
Nobuhiro Oshima	Organization

A relation between the study sectors and UN cluster is shown below.



**Table 1.1.1 The Analysis and Basic Data Collection of Iraq (Summary: May 2003)**

**1. Current Problems and Basic Concepts of Development**

Basic development concepts	<ul style="list-style-type: none"> <li>- "Creation and Development of the Country which will enable to live together", based on the development, focusing on the characteristics of each targeted area, and the construction of the cooperative organization and relationships with neighboring countries</li> <li>- Consideration of needs for projects and plans without bias toward specific areas and seeking a balance between peoples of different areas.</li> <li>- The oil industry will be regarded as the main development industry and agricultural and tourism industries will be secondary.</li> <li>- Enforcement of regional cooperation in the South-North Corridor, where Baghdad (midland) is a central point</li> </ul>
Current situation and problems	<ul style="list-style-type: none"> <li>- The number of damaged buildings and refugees is lower than originally predicted.</li> <li>- Deterioration of buildings and other social infrastructures is significant due to insufficient maintenance during the time of economic sanctions.</li> <li>- Iraq could recover by itself if it manages its own oil resources.</li> <li>- Iraq has the potential .</li> </ul>
Next steps for development	<ul style="list-style-type: none"> <li>- Quick construction of the provisional government, the recovery of a functioning police force, the creation of security mechanisms (disposals of bombs and mines, and so on)</li> <li>- Negative factors for economic reconstruction may consist of external debts and a poor relationship with OPEC</li> </ul>

**2. Direction for building the Cooperative Relationships in each Sector**

Sector	Immediate/Short-term (less than one year)	Mid-term (between two and five years)	Long-term (between five and ten years)
1) Roads/Bridges	<ul style="list-style-type: none"> <li>- Maintenance of infrastructures in main cities</li> <li>- Maintenance of infrastructures in main cities</li> <li>- Maintenance of main road networks</li> <li>- Surveys to inventory the need for construction of roads and bridges</li> </ul>	<ul style="list-style-type: none"> <li>- Formulation of the M/P of national road networks (Maintenance plan, required for the South-North Corridors)</li> <li>- Expansion and rehabilitation of road on M/P</li> </ul>	<ul style="list-style-type: none"> <li>- Maintenance of regional road networks</li> <li>- Maintenance of international roads</li> <li>- Assistance for the formulation of road maintenance management systems</li> </ul>
2) Railways	<ul style="list-style-type: none"> <li>- Emergency maintenance of main railways</li> <li>- Emergency surveys for the new construction and formulation of rehabilitation plans</li> </ul>	<ul style="list-style-type: none"> <li>- Formulation of a M/P for the railway network</li> <li>- Capacity building</li> <li>- Assistance with the construction of the systems of operation and management</li> </ul>	<ul style="list-style-type: none"> <li>- Rehabilitation of international railways</li> <li>- Assistance for maintenance and management of railways and tracks</li> </ul>
3) Airports/Ports	<ul style="list-style-type: none"> <li>- Rehabilitation projects of main airports and ports</li> <li>- Inventory surveys and plans for rehabilitation of airports</li> </ul>	<ul style="list-style-type: none"> <li>- Formulation of M/P for constructing airports and ports</li> <li>- Assistance for systems of operation and management</li> <li>- Capacity building</li> </ul>	<ul style="list-style-type: none"> <li>- Expansion and maintenance of airports (Facility improvement and machinery maintenance)</li> </ul>
4) Telecommunications	<ul style="list-style-type: none"> <li>- Rehabilitation and maintenance of telecommunication or broadcasting facilities in main cities</li> <li>- Survey for the inventory of telecommunication and broadcasting facilities</li> </ul>	<ul style="list-style-type: none"> <li>- Formulation of the M/P of information and telecommunication</li> <li>- Capacity building</li> <li>- Assistance for the expansion and rehabilitation of telecommunication facilities</li> </ul>	<ul style="list-style-type: none"> <li>- Construction of multi information systems</li> </ul>



5) Water Resources	<ul style="list-style-type: none"> <li>- Emergency rehabilitation of water supply and sewerage systems</li> <li>- Survey of needs for water supply systems and water resources</li> </ul>	<ul style="list-style-type: none"> <li>- Formulation of M/Ps for water resource development</li> <li>- Formulation of M/Ps for water supply facilities</li> </ul>	<ul style="list-style-type: none"> <li>- Maintenance and construction of local water supply systems</li> <li>- Water resource development to meet new demands</li> </ul>
6) Energy/Electricity	<ul style="list-style-type: none"> <li>- Maintenance of power plants and power supply facilities in main cities</li> <li>- Rehabilitation of main oil plants and facilities of natural gas production</li> </ul>	<ul style="list-style-type: none"> <li>- Needs assessment and formulation of M/Ps for electricity and energy supply</li> <li>- Rehabilitation of pipelines</li> </ul>	<ul style="list-style-type: none"> <li>- Assistance to maturing oil industries</li> <li>- Improvement of rural electricity supply and electrification</li> </ul>
7) Food security /agriculture	<ul style="list-style-type: none"> <li>- Immediate food assistance</li> <li>- Protection of food business systems</li> <li>- Needs assessment for the agricultural development</li> </ul>	<ul style="list-style-type: none"> <li>- Survey for the irrigation M/P and maintenance of irrigation facilities</li> <li>- Irrigation development assistance (Central and South area)</li> </ul>	<ul style="list-style-type: none"> <li>- Assistance for expansion of agricultural technology</li> <li>- Assistance to agricultural business</li> <li>- Assistance for agricultural pricing stabilization</li> </ul>
8) Medical services /Health care	<ul style="list-style-type: none"> <li>- Rehabilitation of medical facilities</li> <li>- Assistance of medical activities, delegating nurses and doctors</li> <li>- Needs assessments for medical assistances</li> </ul>	<ul style="list-style-type: none"> <li>- Formulation of long-term plans of medical assistance</li> <li>- Capacity building</li> <li>- Machinery supply</li> </ul>	<ul style="list-style-type: none"> <li>- Assistance of construction of medical administration</li> <li>- Building networks of health care systems (vaccination, prevention policies for infectious diseases)</li> </ul>
9) Education /Vocational Training	<ul style="list-style-type: none"> <li>- Supply of educational facilities, and construction of schools</li> <li>- Collection of basic educational information (facilities, the number of teachers, the ratio of people entering schools)</li> <li>- Educational needs survey</li> </ul>	<ul style="list-style-type: none"> <li>- Formulation of vocational training plans in main sectors</li> <li>- Establishment and operation of vocational training schools</li> <li>- Capacity building</li> </ul>	<ul style="list-style-type: none"> <li>- Assistance of educational administration</li> <li>- Capacity building with training outside Iraq</li> </ul>

M/P : Master Plan

The Study of the Sector-wide M/P  
(Concept of building a new country on the cooperation, Nationwide distribution of reconstruction funds to sectors and areas)

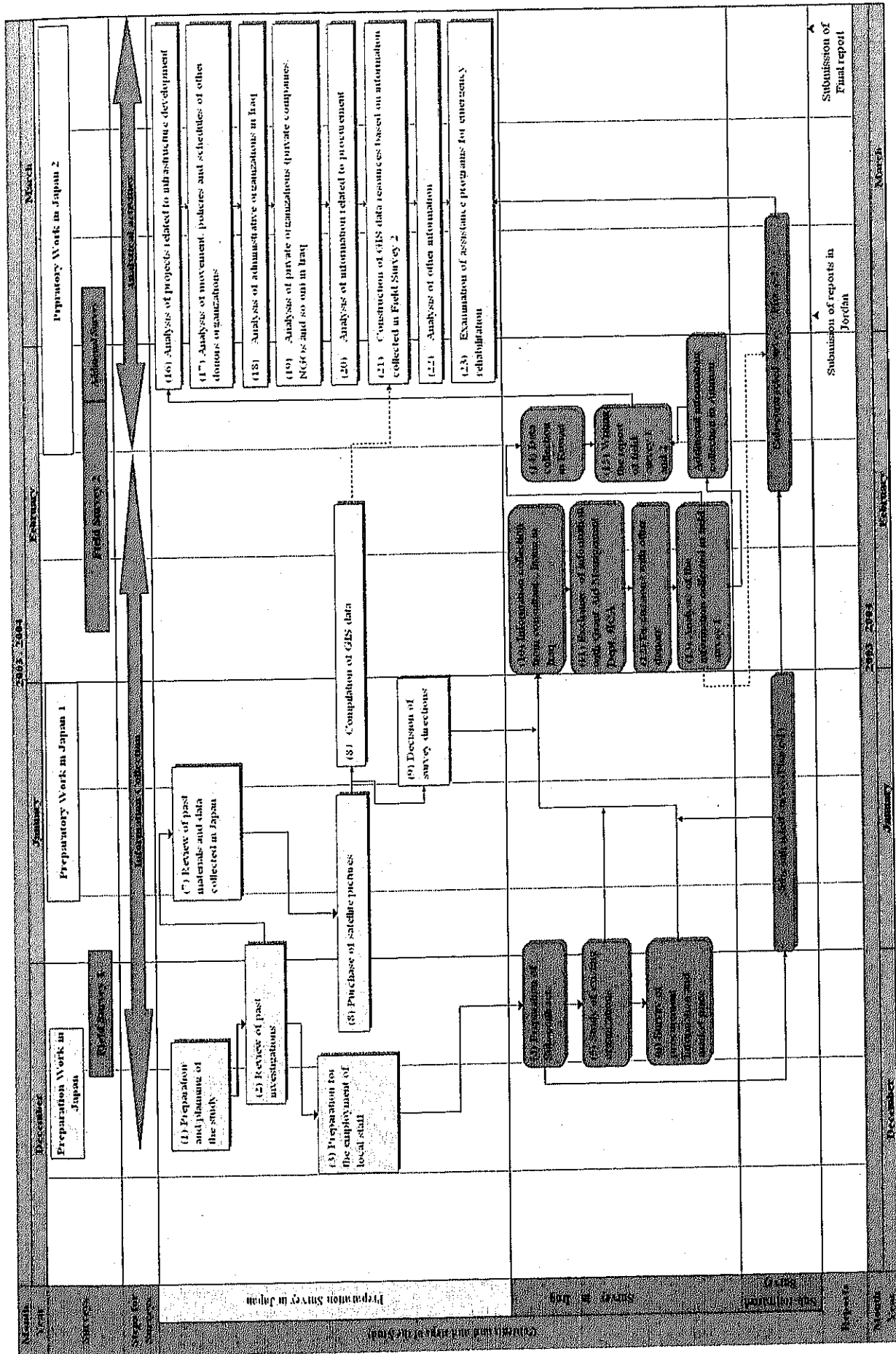


Figure 1.4.1 Flow Chart of the Study

## **CHAPTER 2 SUPPORT FOR RECONSTRUCTION**

### **2.1 Assistance for Reconstruction of Iraq**

Humanitarian aid and support activities for the reconstruction of Iraq started immediately after the declared end of the Iraq War in May 2003, with assistance from the United Nations (UN), the United States, governments of other countries, and non-governmental organizations (NGOs).

The support for the reconstruction of Iraq provided by major donors, including the United States, UN organizations, the World Bank, Japan, and governments of other countries is presented in this chapter.

### **2.2 Reconstruction Support Plan Presented by the United States**

On November 6, 2003, President Bush signed into United States law the “Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, FY2004 (Public Law 108-106)”. Section 2207 of this Act provides that the Director of the Office of Management and Budget should submit a report to the Committees on Appropriations no later than January 5, 2004, on the proposed uses of the “Iraq Relief and Reconstruction Fund (US\$18.6 billion)”.

The Section 2207 Report was prepared accordingly. The study team received it from UNICEF in the middle of February 2004. An outline of the reconstruction support planned by the United States is described in the following chapters based on this report since it presents the most recent plan for the Coalition Provisional Authority (CPA), as of March 2004.

#### **2.2.1 Five Objectives in CPA Reconstruction Support Plan**

According to the Section 2207 Report, the CPA’s strategic plan continues to have five principal objectives as follows:

- (i) **Security** – To defeat terrorists and Baathists and provide a secure environment that enables Iraqi citizens to fully participate in political and economic life.
- (ii) **Essential Services** – To provide essential services and infrastructure, especially electricity, water and health care, at an acceptable standard accessible by all citizens.
- (iii) **Economy** – To provide financial market structures and fiscal and regulatory conditions that will enable sustainable economic growth, the development of a dynamic private sector, the creation of jobs, and rising living standards for Iraqi people.

- (iv) **Governance** – To enable Iraq to have a representative form of government that promotes the rule of law and protects the rights of all, including freedom of expression and religious practice, supported by a vibrant civil society. This objective will be underpinned by a democratically agreed constitution, a transparent electoral process and political institutions that do not tolerate corruption, as well as an accountable and responsive system of local government.
- (v) **Strategic Communications** – To foster unity of effort among Iraqis, Coalition nations and the international community in achieving the above objectives. Achievement of this goal will mean the Iraqi people participate in a sustained, informed, and active manner in the civic affairs of the country.

### **2.2.2 Related Organization for Supporting Iraq Reconstruction**

The Coalition Provisional Authority (CPA) is the temporary governing body which has been designated by the United Nations as the lawful government of Iraq until such time as Iraq is politically and socially stable enough to assume its sovereignty. The Authority is a coalition of many nations from all over the world, encompassing every major religion and ethnic group (the names of the nations which are part of this coalition are listed in Table 2.2.1). The United States and the United Kingdom take leading roles in the practical operation.

According to the agreement of November 15th, 2003 between the CPA and the Iraqi Governing Council, a new transitional administration will be recognized by the Coalition and will assume full sovereign powers for governing Iraq by June 30, 2004. Upon this transfer, the CPA will dissolve.

In December 2003, the CPA announced the establishment of a new Iraqi-led development coordination mechanism. This new mechanism, made up of three parts, will be responsible for all donor activities in the country, including the prioritization of needs and the approval of the project proposals, as follows.

- (i) **A five-member Iraqi Strategic Review Board**, which will provide overall policy guidance and approval for reconstruction activities.
- (ii) **A new Ministry of Planning and Development Cooperation (MoPDC)**, which will follow up donor pledges; recommended sectional allocations and funding sources to the Board; establish guidelines for development activity among the Ministries; and monitor implementation, including identifying development gaps.
- (iii) **The Council for International Coordination (CIC)**, a newly formed council under the chairmanship of the Minister for Planning and Development Cooperation and currently consisting of 23 countries involved in the reconstruction of Iraq, will be the main forum for dialogue amongst donors and between donors and the Iraqi authorities.

**Table 2.2.1 List of Nations Comprising the CPA**

Afghanistan	Iraq	Philippines
Albania	Italy	Poland
Angola	Japan	Portugal
Australia	Jordan	Qatar
Azerbaijan	Kazakhstan	Romania
Bahrain	Kuwait	Rwanda
Bulgaria	Latvia	Saudi Arabia
Colombia	Lithuania	Singapore
Costa Rica	Macedonia	Slovakia
Czech Republic	Marshall Islands	Solomon Islands
Denmark	Micronesia	South Korea
Dominican Republic	Moldova	Spain
Egypt	Mongolia	Thailand
El Salvador	Morocco	Tonga
Eritrea	Netherlands	Turkey
Estonia	New Zealand	UAE
Ethiopia	Nicaragua	Uganda
Georgia	Norway	Ukraine
Honduras	Oman	United Kingdom
Hungary	Palau	United States
Iceland	Panama	Uzbekistan

### 2.2.3 Financial Plan for Reconstruction Support by the CPA

According to the Section 2207 Report, the Relief and Reconstruction Fund (US\$18.6 million) for the CPA is estimated to be spent according to the following schedule.

**Table 2.2.2 Estimated Iraq Relief and Reconstruction Fund Spending**

(US\$ million)

	FY 2004				FY 2005	Total
	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter		
Security & Law Enforcement	772	1,561	586	324	0	3,243
Justice, Public Safety	99	920	221	161	75	1,476
Electricity Sector	434	1,210	483	867	2,566	5,560
Oil Infrastructure	0	1,600	101	0	0	1,701
Water Resources & Sanitation	18	402	322	652	2,939	4,332
Transportation & Telecomm	0	164	259	77	0	500
Roads, Bridges & Construction	0	33	153	73	112	370
Health Care	50	280	225	173	65	793
Private Sector Development	0	65	66	24	30	184
Education, Refugees & Human Rights	15	124	84	58	0	280
Total	1,388	6,357	2,499	2,408	5,787	18,439

Allotment of the fund (US\$18.6 million) has already been decided. The three sectors: electricity, water resources & sanitation, and security & law enforcement gained a relatively high allotment, 30%, 23%, and 17% respectively, and were regarded as priority sectors.

#### **2.2.4 Implementation Structure and Schedule**

The CPA is planning to implement reconstruction support activities according to the following structure and schedule.

**Table 2.2.3 Structure and Schedule for Reconstruction Support Activities by the CPA**

Category	Implementation Schedule by the end of June 2004 (Objectives)	Implementation Structure
Security & Law Enforcement	<ul style="list-style-type: none"> <li>Disposition of trained and equipped 9 battalions of the New Iraqi Army and 36 battalions of the Iraqi Civil Defense Corp.</li> </ul>	U.S. Department of Defense
Justice, Public Safety	<ul style="list-style-type: none"> <li>Support for Iraqi civilians who have suffered losses as a result of military operations.</li> <li>Technical assistance to support the administration of caucuses.</li> <li>Initiate civic education programs</li> <li>Development of responsible political parties.</li> </ul>	USAID, U.S. Department of State
Electricity Sector	<ul style="list-style-type: none"> <li>Increase the total supply of electricity to 6,000 megawatts/day from 4,000 megawatts/day at present.</li> </ul>	CPA, USAID, U.S. Department of State, Iraqi Ministry of Electricity
Oil Infrastructure	<ul style="list-style-type: none"> <li>Have daily production up to 2.5 million barrels/day by April 2004 from 2.3 million barrels/day at present.</li> </ul>	CPA, U.S. Department of Defense
Water Resources & Sanitation	<ul style="list-style-type: none"> <li>Purchase vital supplies and equipment.</li> <li>Begin project construction.</li> </ul>	CPA, U.S. Department of Defense, USAID
Transportation & Telecomm	<ul style="list-style-type: none"> <li>Make three major airports (Baghdad, Mosul, Basra) compliant with International Civil Aviation Organization standards.</li> <li>Enable a 100% increase in product imports through the ports.</li> <li>Double the number of locomotives working the rail lines.</li> </ul>	CPA, U.S. Department of Defense, USAID
Roads, Bridges & Construction	<ul style="list-style-type: none"> <li>Have contractors designing or starting to work to repair 884 km of road, two bridges and four ministry headquarters.</li> </ul>	CPA, U.S. Department of Defense, USAID
Health Care	<ul style="list-style-type: none"> <li>Purchase medical equipment</li> <li>Repair and modernize 15 hospitals</li> <li>Construct new primary healthcare centers in every governorate.</li> <li>Train over 5,000 medical and other primary care staff</li> </ul>	CPA, U.S. Department of Defense, USAID, Iraq Ministry of Health
Private Sector Development	<ul style="list-style-type: none"> <li>Open 28 employment centers manned by 150 trained staff.</li> <li>Refurbish existing vocational training centers.</li> <li>Provide grants to promote micro, small and medium enterprises.</li> </ul>	CPA, USAID, U.S. Department of Defense,
Education, Refugees & Human Rights	<ul style="list-style-type: none"> <li>Operate 162 Centers of Excellence (primary and secondary schools).</li> <li>Provide training for 32,000 teachers.</li> <li>Strengthen the local capacity to investigate and address past atrocities.</li> <li>Develop the role of the independent human rights NGOs and media.</li> <li>Promote respect for human rights.</li> </ul>	CPA, U.S. Department of State, Iraq Ministry of Human Rights

## **2.3 Reconstruction Support Plan by the United Nations**

The United Nations (UN) Security Council promulgated Resolution 1483 on May 21, 2003, immediately after the declared end of the war, and started humanitarian assistance and reconstruction activities based on the action plan formulated by 23 UN organizations.

An Oil-for-Food Program (OFFP) has been carried out by UN organizations since 1997, mainly in the northern area. Their operational base in Iraq was sufficient to implement OFFP and humanitarian assistance at the same time. However, the attacks on the UN facilities in Baghdad in August 2003 had a strong influence on humanitarian assistance activities by the UN in Iraq. For reasons of security, international staff have been shifted to neighboring countries, and the number of national staff has been reduced from about 4,000 to 1,000. Currently humanitarian assistance is continuing through cross-border and remote support by the UN international staff stationed in neighboring countries.

In accordance with Resolution 1483, the UN Development Group and the World Bank jointly undertook a Needs Assessment survey. In this survey, reconstruction needs and priority were analyzed for fourteen different sectors. The result was presented in the International Donors Conference in Madrid on 23-24 October 2003, and this provided important suggestions relating to the reconstruction support plans of respective donors.

A report titled "A Strategy for Assistance to Iraq" was submitted by the UN group on February 7, 2004. The UN plan of activities in 2004 and the current progress are presented in this report.

### **2.3.1 Objective of Reconstruction Support by UN Group**

According to "A Strategy for Assistance to Iraq 2004", objectives underpinning UN assistance to Iraq are described as follows:

- (i) Save and protect lives, and reduce suffering and deprivation among affected population;
- (ii) Promote processes and systems for ensuring respect, protection and advancement of human rights for all people;
- (iii) Address mainstream gender concerns, and promote the empowerment of women through planning, policies, budgets, processes, and programs;
- (iv) Address mainstream environment and natural resources management issues, and strengthen these through policies, budgets, processes, programs and projects;



- (v) Encourage sustainable solutions to the problem of inequality and unemployment, and address needs of marginalized or special groups, including the internally displaced, refugees and demobilized personnel;
- (vi) Help consolidate peace through quick impact and longer term measures targeted at conflict-affected populations and geographical areas, thereby providing incentives to create community confidence and maintain peace;
- (vii) Promote good governance by strengthening national and local level democratic political processes and appropriate conflict resolution mechanisms.

### 2.3.2 UN Approach to Assistance for Iraq

Aiming at applying an integrated implementation team, empowering national staff, increasing cross-border activities and enhancing engagement with Iraqi partners, the UN group adopted an approach of integrating the activities into ten clusters rather than having their 23 organizations acting individually. The ten formulated clusters are shown below.

**Table 2.3.1 Ten Clusters of UN Groups**

No.	Cluster	UN Organizations Involved
1	Education and Culture	UNICEF, UNESCO, UN-HABITAT, ESCWA, UNOPS, UNIDO, UNIFEM, OHCHR, WFP, WHO, ILO
2	Health	WHO, UNICEF, UNFPR, UNHCR, UNDP, UNIFEM, WFP, IOM
3	Water and Sanitation	UNICEF, UNDP, UNOPS, WHO, UNIDO, UN-HABITAT
4	Infrastructure and Housing	UNDP, UN-HABITAT, ESCWA, UNIDO, ILO, ITU
5	Agriculture, Water Resources and Environment	FAO, UNEP, UNIDO, UNICEF, WFP, UNHCR, UNESCO
6	Food Security	WFP, FAO, UNICEF, WHO
7	Mine Action	UNDP, UNMAS, UNICEF, UNOPS, UNEP, UNAMI
8	Internally Displaced Persons (IDPs) and Refugees	UNHCR, IOM, UNAMI, UNOPS, UN-HABITAT, WHO, UNICEF, WFP, UNDP, OHCHR, FAO, ILO, UNIDO
9	Governance and Civil Society	UNDP, UNIFEM, OHCHR, UNICEF, UNEP, UN-HABITAT, ILO, UNESCO, UNODC
10	Poverty Reduction and Human Development	UNDP, ILO, UNIFEM, UNICEF, UNIDO, ESCWA, IOM

Most of the UN organizations active in Iraq have shifted their operational base to Amman, Jordan. Each cluster is holding bi-weekly meetings to confirm project progress and provide necessary coordination.

Supporting projects within each cluster will be carried out in three years from 2004. However, most of the projects are planned to be implemented in 2004.

### 2.3.3 Financial Plan for Reconstruction Support by Each Cluster

Each cluster is currently formulating annual financial plans for the period 2004–2006. The following is the breakdown between clusters.

**Table 2.3.2 Financial Plan of UN for Reconstruction Support**

(US\$ million)

No.	Cluster	Year 2004			Year 2005-2006			Total			Remarks
		Funded	Un-funded	Total	Funded	Un-funded	Total	Funded	Un-funded	Total	
1	Education and Culture	46.8	94.3	141.1	3.9	149.5	153.4	50.7	243.8	294.5	
2	Health	32.6	36.4	69.0	115.0	46.6	161.6	147.6	83.0	230.6	
3	Water and Sanitation	40.3	304.4	344.7	20.0	399.0	419.0	60.3	703.4	763.7	
4	Infrastructure and Housing	47.1	412.4	459.5	0.0	395.0	395.0	47.1	807.4	854.5	
5	Agriculture, Water Resources and Environment	0.7	122.9	123.6	0.0	469.9	469.9	0.7	592.8	593.5	
6	Food Security	910.2	39.0	949.2	0.0	204.9	204.9	910.2	243.9	1,154.1	
7	Mine Action	9.0	5.6	14.6	0.0	63.6	63.6	9.0	69.2	78.2	
8	IDPs and Refugees	23.6	78.0	101.6	0.0		0.0	23.6	78.0	101.6	(*)
9	Governance and Civil Society	16.0	19.0	35.0	8.5	60.5	69.0	24.5	79.5	104.0	
10	Poverty Reduction and Human Development	42.6	55.0	97.6	0.5	244.1	244.6	43.1	299.1	342.2	
	<b>TOTAL</b>	<b>1,168.9</b>	<b>1,167.0</b>	<b>2,335.9</b>	<b>147.9</b>	<b>2,033.1</b>	<b>2,181.0</b>	<b>1,316.8</b>	<b>3,200.1</b>	<b>4,516.9</b>	<b>(**)</b>

(\*) Program for Year 2005-2006 is under preparation

(\*\*) Total budget will be slightly increased after program of cluster 8 is determined

As shown above, the total UN fund for reconstruction support is expected to be about US\$4.5 billion during the period from 2004 to 2006. The financial plan appears quite swift since more than half of the fund is being spent in 2004. Taking into consideration the present situation in Iraq, the swiftness is regarded as the most important factor. The support plan of the UN, as well as that of the CPA, is highly sensitive to this point.

Looking by sectors, food security has the highest allotment, almost equal to 25% of the total fund. To support the existing food supply system, a program of provisions for six months is planned with a total budget of US\$910 million. Infrastructure and housing (18%), water and sanitation (16%), and agriculture, water resources and environment (13%) also have major shares following food security.

#### 2.4 Reconstruction Support Plan by the World Bank Group

As presented in the preceding section, 2.3, the World Bank carried out a "Joint Needs Assessment" in cooperation with the UN development group, and the results were presented at the international donor conference held in Madrid in October 2003. The following needs were identified by the survey.

- (i) Iraq faces monumental reconstruction and development challenges.
- (ii) It is vital to build efficient and inclusive public institutions for Iraq's long-term stability and economic growth.
- (iii) Years of conflict and deferred maintenance have degraded Iraq's infrastructure.
- (iv) Iraq's education and healthcare systems, once among the best in the region, are

now among the worst.

- (v) Given the right support and policy environment, Iraq's agriculture sector could contribute significantly to economic growth and job creation.
- (vi) A main challenge will be to support sustainable job creation outside the oil sector.
- (vii) It is particularly important to mitigate the temporary adverse effect of reforms on the poor and vulnerable.
- (viii) An estimated US\$55 billion is needed for reconstruction and development over the next four years.

Moreover, the World Bank and the UN have designed an International Reconstruction Fund Facility for Iraq to ensure swift, flexible, and coordinated donor financing for priority investments consistent with the Needs Assessment. The Facility consists of the two trust funds, a World Bank Iraq Trust Fund and a UN Development Group Iraq Trust Fund.

#### **2.4.1 Objective of Reconstruction Support by the World Bank**

Given the evolving situation in Iraq, the World Bank decided to carry out their plan by taking an incremental approach. According to the Bank's interim work program prepared in January 2004, the "Interim Strategy Note of the World Bank Group for Iraq", the immediate objectives and ongoing support for Iraq have been defined as follows.

- (i) Build Iraqi institutional capacity, especially to establish mechanisms of transparency and accountability that are urgently needed to manage the large amounts of external funding needed for Iraq's reconstruction.
- (ii) To the extent possible under the circumstances, prepare and start implementing emergency operations to address urgent needs:
  - Generate employment and kick-start economic activity;
  - Restore essential infrastructure and services.
- (iii) Lay the groundwork for Iraq's medium-term reconstruction and development program.
- (iv) Assist the transition from central planning to market economics, through policy advice and analytical works.

#### **2.4.2 The World Bank Approach to Assistance in Iraq**

The World Bank has been preparing a support program based on discussions with only key Iraqi ministers due to several restrictions. However, the Bank expects to formulate a more comprehensive program, regarding the work program derived from the Needs Assessment. This comprehensive program will be articulated in a Transitional Support

Strategy (TSS) if the expected political transition scheduled for mid-2004 satisfies the Bank's requirement. In addition to the institutional development and urgent operation identified in the preceding Interim Strategy, TSS will put priority on the following issues in the support program in 2005.

- (i) Strengthening institutions, emphasizing efficiency, transparency, and accountability;
- (ii) Enabling private sector development;
- (iii) Assisting in the transition from a centrally-planned economy to a market-based economy and diversifying the economy away from dependence on the oil sector; and
- (iv) Building systems for social protection.
- (v) TSS would also support Iraqi efforts to formulate a national reconstruction and development strategy.

#### 2.4.3 Financial Plan for Reconstruction Support by the World Bank

The following table shows the financial plan and the contents of the Interim Strategy, being carried out from January to October 2004. Implementation of the Interim Strategy will mainly rely on the Iraq Trust Fund for finance.

**Table 2.4.1 Interim Strategy of the World Bank (January to October 2004)**

Trust Fund Operation	US\$ million
Multi-sector Institutional Capacity Building	5 - 10
Emergency Education	100
Emergency Community-based Rural Infrastructure	100
Emergency Infrastructure Reconstruction	200 - 400
<b>Core Diagnostic</b>	
Procurement and Financial Accountability	
Core Economic Monitoring	
Social Development Analysis	
<b>Other Economic and Sector Work and Policy Advice</b>	
Poverty and Safety Nets	
Incentive Framework for a Market Economy	
Energy Pricing	
Policy Advice for SOE Restructuring, Investment Climate, and Financial Sector	
Technical Assistance for Health Policy, Health Finance, and Public Health	
<b>Economic and Social Work to be Initiated</b> (to be completed after September 2004)	
Priorities in Public Spending	
Oil Sector – Macroeconomic Implications	
External Debt Management	
Country Environmental Assessment	
Health Sector Master Plan (Phase 1)	
Strategy Development for the Education Sector	
Agriculture and Rural Development Policy Framework	
Country Water Assistance Strategy	

Project amounts during the interim period are contingent on the availability of trust fund resources. Therefore, the emergency infrastructure reconstruction project could be phased if necessary.

#### **2.4.4 Problems with the Reconstruction Support**

Deploying the full range of the World Bank resources to Iraq depends on resolving a number of threshold issues as follows.

(i) Security

In order to carry out their functions, IBRD and IDA must be able to send staff to safely visit the territory of a member country on a regular basis for purposes of project identification, preparation, appraisal, and supervision.

(ii) Dealing with a de facto government

In the absence of a de jure government and in considering whether to extend new loans or grants to a country with a de facto government, Bank policy allows a certain time to pass to weigh up options.

(iii) Arrears

Arrears to the IBRD and IMF are relatively small (US\$100 million and US\$81 million respectively, as of January 5, 2004), so clearance should not be overly difficult. According to recent information, Iraqi authorities and the CPA plan to set aside money in the revised 2004 budget to clear arrears to the IBRD and IMF.

### **2.5 Reconstruction Support Plan by Japan**

#### **2.5.1 Outline**

Combining with preceding support, the Japanese government pledged a total of US\$1,500 million of grant aid in the Madrid Conference in October 2003, responding to reconstruction needs in 2004. It also pledged a further US\$3,500 million support for mid-term reconstruction needs until 2007, assuming that it would be basically provided by concessional loans (Yen loans). In total, the Japanese government has already pledged support with as much as US\$5,000 million for the reconstruction.

In allocating grant aid for 2004, reconstruction of basic infrastructure, including electricity, water and sanitation, health, and education, and improvement of security rated high priority. Development of electric/communication and transportation infrastructure is included in the middle term plan until 2007.

JICA dispatched three study teams to Jordan from December 2003 for (1) formulation of grant aid projects, (2) information collection for formulating support programs on urgent infrastructure rehabilitation, and (3) carrying out pre-master plan study for the electricity sector. The study of (1) and (2) will be completed by the end of March 2004,

and (3) by the end of July 2004.

Based on the Law Concerning the Special Measures on Humanitarian and Reconstruction Assistance in Iraq, the Japanese government sent Self-Defense Forces to Iraq in January 2004. The Troops of the Air Self-Defense Force arrived at Ali Alsaalem Air Base in Kuwait at the end of January 2004 and started preparation for air delivery to Iraq.

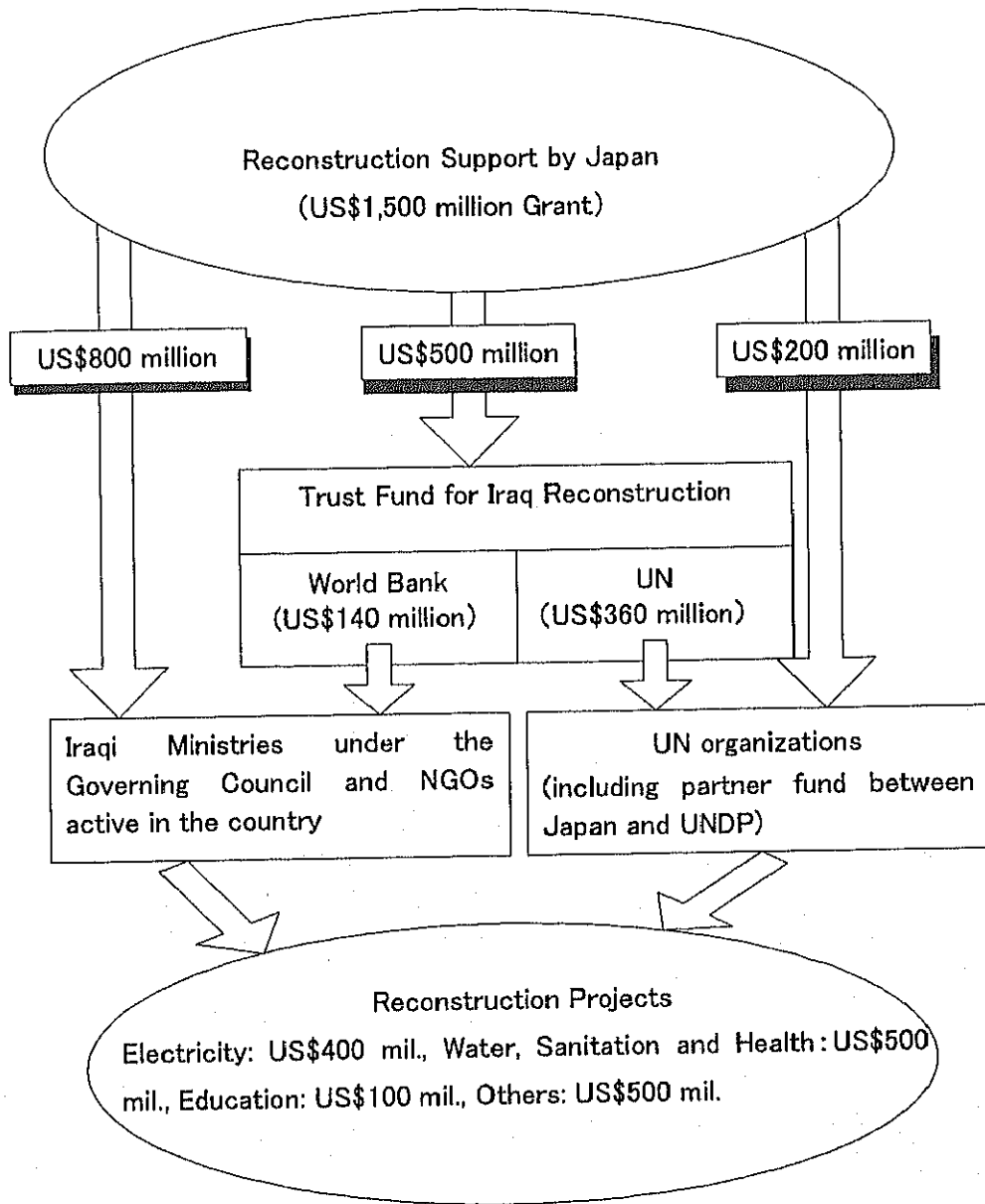
An advance party of the Troops of the Ground Self-Defense Force arrived in Samawah in early February and began carrying out preparatory works, including construction of a temporary base and coordination with the CPA, local authority and local people. Medical assistance commenced at the Education Hospital in Samawa in mid February. Water supply and medical assistance will be expanded accordingly as the other main bodies arrive in the country.

Troops of the Maritime Self-Defense force departed for Kuwait on the warship "Ohsumi" and other escort ships in mid February transporting vehicles that will be used in Samawah.

As a member of the international community, Japan decided to support the Iraq reconstruction process through economic cooperation by utilizing the Official Development Assistance (ODA) and a human resource contribution by using Self-Defense Forces as providing two essential components of the process.

### **2.5.2 Reconstruction Support Plan Using Grant Aid**

The support fund of US\$1,500 million for grant aid is planned to be spent not only through bilateral aid schemes but also through international organizations, trust funds, and NGOs. The following diagram shows flows of the grant aid fund.



**Figure 2.5.1 Outline of Financial Allocation of Grant Aid Scheme**

From the US\$1,500 million of the Grant Aid Fund, US\$800 million will be spent under the bilateral aid scheme, US\$500 million will be sent to the Iraq Trust Fund, and US\$200 million will be spent through UN organizations.

For formulation of the supporting program, priority is given to the electricity sector, water, sanitation and health sector, and education sector with special consideration to urgent needs of Iraqi citizens and humanitarian aspects.

### 2.5.3 Reconstruction Support Projects Already Implemented under Grant Aid Scheme

Some reconstruction support projects have already been or are expected to be implemented under the grant aid scheme. The following is a summary of these.

- (1) Through international organizations (about US\$76 million already pledged)
  - a) Urgent humanitarian aid (about US\$29.5 million): WFP, UNICEF, ICRC, UNHCR.
  - b) Preservation and rehabilitation of cultural heritage, education (US\$2 million): UNESCO
  - c) Dredging and wreck removal from Umm Qasr port (US\$2.5 million): UNDP
  - d) Humanitarian and Reconstruction Aid (US\$42 million): “Reconstruction and job creation program (UNDP)”, “Regeneration of Primary Education (UNICEF)”, “Rehabilitation of the central electricity supply center (UNDP)”, “Rehabilitation of the Al-Kadhimiya Teaching Hospital (UNDP)”, “Rehabilitation of the Hartha Power Station (UNDP)”, “Reconstruction of school building (UN-HABITAT)”, “Community reconstruction program (UN-HABITAT)”.
- (2) Direct assistance to Iraq (about US\$29 million already pledged)
  - a) Provision of 620 police vehicles to the Iraqi Ministry of Interior.
- (3) Support through NGOs (about US\$1.13 million already pledged)
  - a) Urgent medical assistance by Japan Platform (JPF).
  - b) Urgent medical assistance by Peace Winds Japan (PWJ).
  - c) Medical assistance, urgent commodity supply and support for refugees along the border between Iraq and Jordan by JPF.
  - d) Project providing antibiotics and other medicines by the Hashemite Foundation in Jordan.
  - e) Project providing medical equipment for the likes of intravenous drip injections for infants by the international NGO “Care International”.
  - f) Urgent rehabilitation of medical and educational facilities by JPF.
  - g) Small-scale cultural grant aid for donation of football related equipment from the Japan Football Association to the Iraqi Football Association.
  - h) Provision of vehicles and medicines to the mutual aid organization in Umm Qasr City.
  - i) Provision of office equipment to self-governing organizations in Baghdad.
  - j) Rehabilitation of eight primary schools and one technical school in Baghdad.
  - k) Supply of furniture to a center for handicapped people in Baghdad.
  - l) Reconstruction of a high school in Mawsil city.
  - m) Development of sewerage treatment facilities (4 places) in Mawsil city.
  - n) Development of water supply facilities in Ninawa Governorate.
  - o) Supply of ten ambulances to Ninawa Governorate.



- p) Supply of 12 water wagons to the water supply authority in Muthanna Governorate.

## 2.6 Bilateral Aid from Major Donor Countries excluding the United States and Japan

Bilateral Aid from major donor countries excluding the United States and Japan is shown in the table below.

**Table 2.6.1 Bilateral Aid from Major Donor Countries excluding the United States and Japan**

Country	Contents
Canada	Support of CN\$ 300 million (including support for neighboring countries such as Jordan)
EU	Support of Euro 200 million from the 2004 budget
United Kingdom	Support of £ 544 million in 3 years from April 2003 (equivalent to US\$900 million including US\$450 million in 2 years)
Germany	Support of Euro 200 million
France	Carry out humanitarian aid of Euro 10 million. Establishment of military police school and assistance for police training are under consideration
Italy	Support of Euro 200 million in 3 years (equivalent to about US\$235 million)
Spain	Support of US\$300 million
Russia	500,000 ton of humanitarian food assistance
Korea	Support of US\$200 million in 4 years
Saudi Arabia	Donation of SR 68 million (equivalent to US\$1.81 million). Supply of more than 361 trucks (equivalent to SR 6.3 million). Finance of US\$500 million on development plans. Finance and credit of US\$500 million for export to Iraq through "Saudi finance and export program".
Kuwait	Support of US\$1,000 million so far. Another US\$500 million is pledged.
U.A.E.	Support of US\$215 million
Islamic Development Bank	US\$500 million is allocated to reconstruction and rebuilding.

Note: Amounts for each donor country represent amount of grant aid, while those of international organizations represent concessional loans.

## CHAPTER 3 INTERVIEW SURVEY OF INHABITANTS

### 3.1 Outline of Interview Survey

#### 3.1.1 Objective

In order to formulate an urgent reconstruction and rehabilitation program of infrastructures in Iraq it is important to understand the needs of the Iraqi people, especially immediate and urgent needs. Understanding the needs of both the Iraq government and local inhabitants is important.

The study objective was to clarify the understanding of the needs of local inhabitants by obtaining their candid opinions as they tried to carry out their everyday lives. It is significant in formulating a program to take account of perceived needs. It is the Iraqi people who are the beneficiaries of reconstruction and rehabilitation programs.

#### 3.1.2 Methodology

Baghdad and seven (7) other major cities located in the southern area of Iraq were the target area of the survey. The survey was carried out by interview using questionnaire forms. Sampling numbers were 100 for Baghdad 40 for Basra, and 20 for each of five other cities. Sampling was random with even numbers by gender.

**Table 3.1.1 Sampling Number**

No.	Name of City	Male	Female	Total
1	Baghdad	50	50	100
2	Kut	10	10	20
3	Karbala	10	10	20
4	Najaf	10	10	20
5	Samawahh	10	10	20
6	Nasiriyah	10	10	20
7	Basra	20	20	40
8	Umm Qasr	10	10	20
	Total	120	120	260

The location of the above eight cities is shown on the following map (Figure 3.1.1).

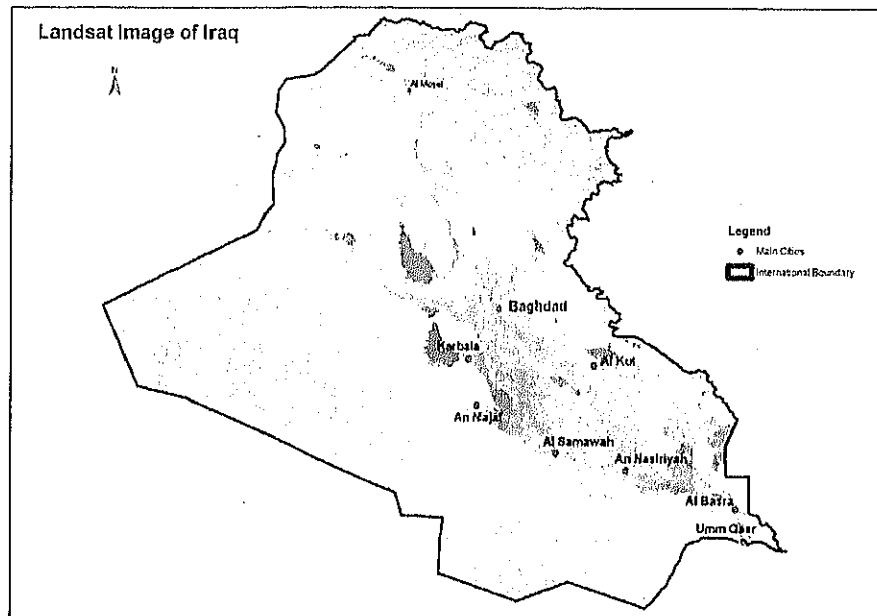


Figure 3.1.1 Location Map of Target Cities

### 3.1.3 Constraints and Status of the Survey

There were several constraints to the survey because of the time frame and security issues. The study was required to be carried out within a short period to comply with the urgent requirements. The study team could not visit Iraq due to the security constraints. Therefore, the study team employed Iraqi surveyors to conduct it.

A sampling number of 260 is not a statistically adequate sample. Hence the results of the survey do not precisely reflect the needs of Iraqi people. Therefore the results were not used for formulating the program directly but were used as a reference. The results are probably not far from reality because the results were similar in each target area.

## 3.2 Inhabitants' Lives

### 3.2.1 Overview

Basically, the living standard in Iraq was higher than that of many other Arabic countries and their infrastructures had, up until the economic sanctions after the Gulf War, been built through the benefits from oil production. Through the experience of prosperity, the Iraqi people have become very proud.

On the other hand, the Hussein Government had been oppressing the Shiites in the southern part of Iraq. As a result, the southern part is less developed in infrastructure and this has caused a socio-economic gap in the country.

### 3.2.2 Income

The average monthly income of respondents who had an income is shown in Table

3.2.1. Overall there was an income gap between Baghdad and the southern cities. The average monthly income in the southern cities was 87.6% of that in Baghdad. Male and female incomes in the southern cities were 78.9% and less than half of that in Baghdad, respectively, which represents a large gap between them.

The reason that the total income gap was less than the male or female income gaps is that the women's employment rate in Baghdad was higher than that in the southern cities. In Baghdad, 28 women out of 50 had income while only 35 out of 80 had income in the southern cities. In addition, there was a large gap of income level between male and female in the southern cities compared with in Baghdad. Women's average monthly income in Baghdad was 72.8% of men's, while in the southern cities women's income was 41.3% of men's.

**Table 3.2.1 Average Monthly Income**

	Baghdad	Other Cities	Ratio of Income in other cities to that in Baghdad (%)
Total	203,286 Dinar (142.7 US\$)	178,057 Dinar (125.0 US\$)	87.6%
Male	227,976 Dinar (160.0 US\$)	179,943 Dinar (126.3 US\$)	78.9%
Female	166,250 Dinar (116.7US\$)	74,286 Dinar (52.1 US\$)	44.7%
Ratio of income of female to that of male	72.9%	41.3%	

\* 1US\$=1,425 Dinar

There were income gaps between Baghdad and southern cities and also between male and female. The gap between Baghdad and southern cities for females was larger than for males. The gap between males and females in the southern cities was larger than that of Baghdad.

### 3.2.3 Standard of Living

Possession rates of home facilities are shown in Table 3.2.2. Possession rates of home facilities that depend on individual purchasing power, such as cooker, refrigerator, TV, are high, and no gaps between Baghdad and other cities were observed. This seems to indicate that the individual standard of living is satisfied above a certain level, including southern cities, even though there was a gap in the infrastructure level due to the adverse treatment of the southern areas.

The possession rate of telephones in the southern cities, however, was half of that in Baghdad. Regarding water supply (tap), the possession rate in the southern cities remains about 80% even though it was very high (98%) in Baghdad.

**Table 3.2.2 Possession Rate of Home Facilities (%)**

	Cooker	Refrigerator	TV	Telephone	Water Supply (Tap)
Baghdad	98.0	97.0	99.0	53.0	98.0
Other Cities	95.6	95.0	95.6	28.8	81.3

The possession rate of flush and non-flush toilets was over 90% in both Baghdad and other cities even though there was a gap in flush toilet rates between Baghdad and other cities, which were 63.0% and 40% in Baghdad and other cities, respectively.

**Table 3.2.3 Possession Rate of House Toilet (%)**

	Pit	Flush	Non-flush	None
Baghdad	1.0	63.0	36.0	0.0
Other Cities	4.4	40.0	51.9	3.8

The degree of community infrastructure development is shown in Table 3.2.4. Degrees of basic social facilities development, such as schools, hospitals, and power, did not show much gap between Baghdad and the southern cities. However, there were pronounced gaps in sewerage, garbage, and public transportation.

**Table 3.2.4 Degree of Community Infrastructure Development (%)**

	School	Hospital	Sewerage	Garbage	Market	Public Transp- ortation	Mosque	Power	Energy
Baghdad	96.0	74.0	64.0	36.0	87.0	81.0	94.0	74.0	44.0
Other Cities	95.0	72.5	35.0	18.1	63.1	38.8	71.3	71.9	52.5

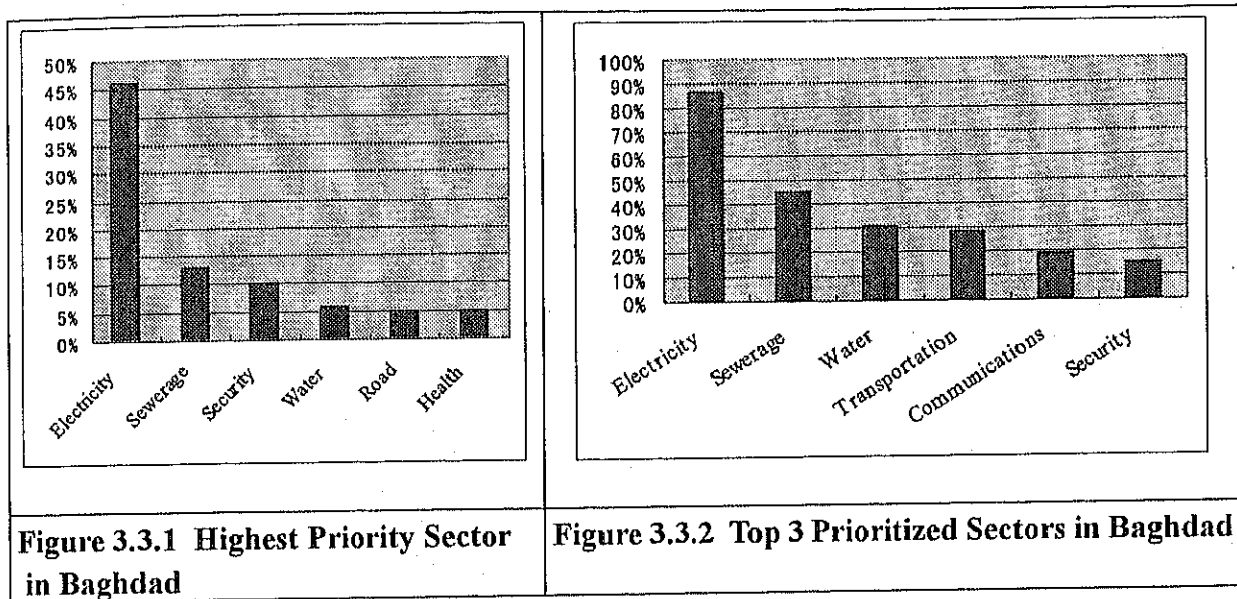
It may be the result of the former government's "cold treatment" of the southern areas that there are gaps in social infrastructure development between them even though there are not gaps in home facilities.

It seems that the standard of living of Iraqi people had been above a certain level, as indicated by their high possession rate of home facilities, such as refrigerators and TVs. In this connection, the reconstruction and rehabilitation program for Iraq is quite different from that for Afghanistan or East Timor. During the interviews, some Iraqis said "we can reconstruct and rehabilitate our country if you restore social infrastructure, the industrial base and employment." Those opinions reflect the pride of the Iraqi people. In this respect, it does not seem that the way of creating plenty of employment for the people through providing low skill jobs, such as cleaning work

and mowing work, can satisfy the needs of the Iraqi people who are very proud people.

### 3.3 Needs in Baghdad

One hundred (100) interviews were carried out using random sampling from eight different areas in Baghdad. Regarding infrastructure restoration, people from the highest priority sector and the top three prioritized sectors were interviewed and the results are shown in Figures 3.3.1 and 3.3.2.



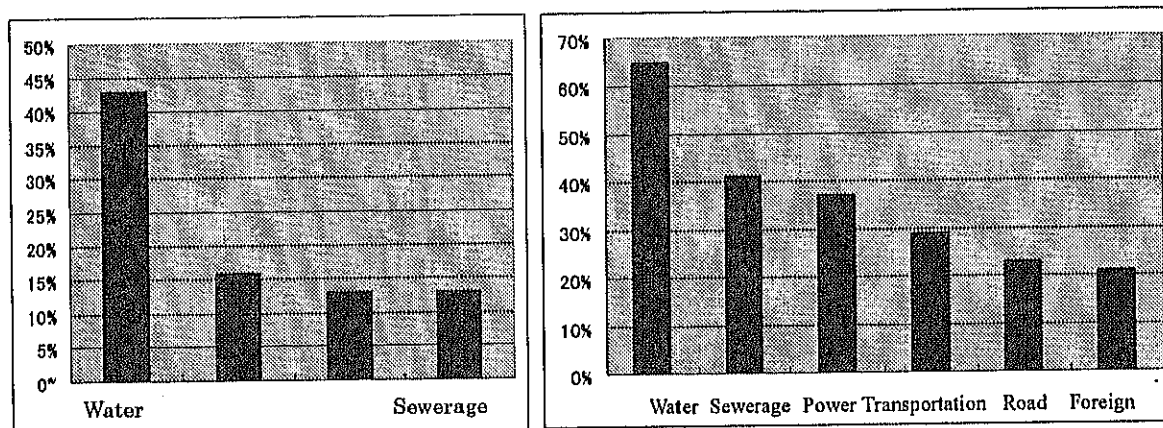
The figure shows that the power sector has the highest priority need for restoration. Forty-five out of 100 respondents put the power sector as the highest priority sector. In addition, more than 85% of respondents put it as one of the top priority sectors. It seems that power is indispensable for Iraqi life due to the power needs for air conditioners and cooling systems in the very hot summers. As a result, urgent rehabilitation of the power sector is a suitable support for the needs of inhabitants.

Sewerage is also a high priority sector for rehabilitation needs next to power supply. Sewerage only rated as the highest priority sector in 13% of results but was rated in the top three priority sectors by 45% of responses. The possession rate of house toilets in Baghdad was 63%. It was one and a half times that in the southern cities.

Next to the electricity and sewerage sectors, water supply, security, transportation and communication sectors are the next in priority. Regarding water supply, 98% of respondents had been connected to tap water reticulation. Therefore, it is clear that water supply no longer functions as it previously did.

### 3.4 Needs in Southern Inland Areas

Twenty inhabitants were interviewed from each of five major cities located in southern inland areas (Karbala, Najaf, Kut, Samawah and Nasiriyah). In those areas, the water supply sector is the highest priority for urgent rehabilitation. Forty-three percent of respondents put it as top priority. It seems that water supply is a serious problem, especially in the southern inland areas which have water problems. The need for water supply is a much higher priority than the next most-needed sectors, which are sewerage, security and power supply.



**Figure 3.4.1 Top Priority Sector in Southern Inland Cities**      **Figure 3.4.2 Top Three Priority Sectors in Southern Inland Cities**

For reference, the results for Samawah, where the Japan Self-Defense Forces have started emergency assistance activities, is shown in Table 3.4.1.

**Table 3.4.1 Prioritized Sectors in Samawah**

Sector	1st Priority	2nd Priority	3rd Priority	Top 3
Water Supply	7	8	2	17
Power	9	3	2	14
Sewerage	1	3	3	7
Transportation	0	3	5	8
Health	1	0	3	4
Education	0	1	2	3
Industry	0	1	2	3
Road	1	0	0	1
Housing	1	0	0	1
Irrigation	0	1	1	2
Total	20	20	20	20

The power sector was given a higher priority than it was in other cities, though the top priority sector was still water supply, the same as for the other cities. It is supposed that the cause is that the cement industry, which is a major industry in the area, takes much of the power and the rest of the area is given a lower priority for electric power supply.

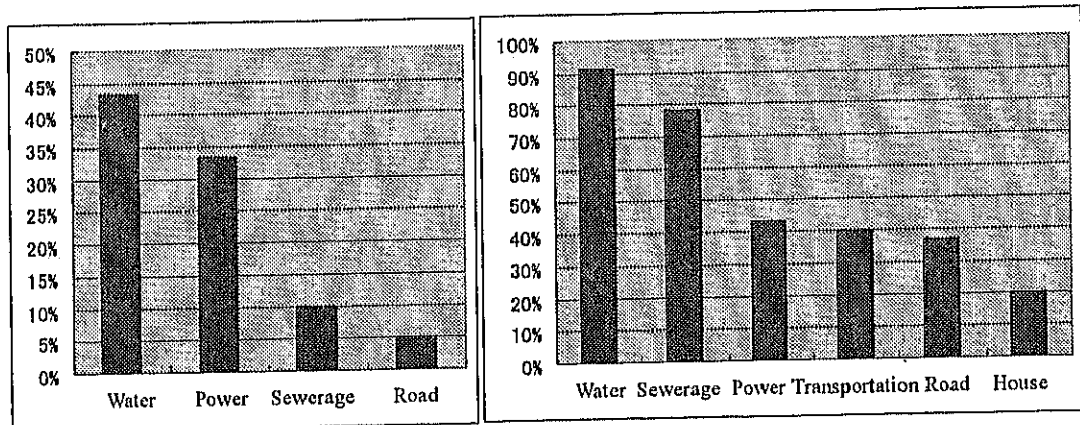
### 3.5 Needs in Southern Coastal Area

Forty inhabitants were interviewed in Basra and twenty in Umm Qasr, the two southern coastal cities. The water supply sector is the highest priority for rehabilitation in southern coastal cities, the same as in southern inland cities. More than 90% of respondents put it in their top three priority sectors.

There are water resources in the northern part of the country. A greater need for rehabilitation of water supply is perceived in the downstream sections of the Tigris and Euphrates Rivers. The need for rehabilitation of sewerage is also recognized in the area in the same way as water supply.

It is noted that there are two kinds of respondents, those who consider the need of rehabilitation of the power sector is urgent and those who do not. More than 60% of respondents did not put the power sector in their top three priority sectors even though about 30% of respondents put it as the highest priority sector.

In addition, it is noted that few respondents put restoration of security as a need and this is different from the other areas. It seems that security is better in the southern coastal cities than in the other cities.



**Figure 3.5.1 Highest Priority Sector in Southern Coastal Cities**     **Figure 3.5.2 Top Three Priority Sectors in Southern Coastal Cities**