

## **5. Education • Vocational Training**

## 5 Education and Vocational Training

### 5.1 Outline of Education and Vocational Training in Iraq

The population in Iraq is estimated at 2.6 million with annual population growth rate of approximately 2.8%.

The education system in Iraq showed high performance rate until the early 1980s and it achieved nearly universal primary enrollment in 1980. Thereafter, for more than two decades, the enrollment rate went into a steady decline and the attendance went down at an alarming rate.

Out of nearly 15,000 existing school buildings, 80% now require significant restoration. More than 1,000 schools need to be demolished and completely reconstructed. Another 4,600 require major repair based on information from the Ministry of Education.

**Table 5.1.1 No. of Students by Level of School (excluding higher education)**

Level of Education	No. of Students	Source
Kindergarten	53,499	MOE and UNICEF
Primary school	4,280,602	MOE and UNICEF
Secondary education (Intermediate and Preparatory)	1,454,775	MOE, UNICEF, UNESCO and USAID
Vocational school	62,841	MOE and UNICEF
Teacher training school	66,139	MOE and UNICEF

**Table 5.1.2 No. of Students by Sex by Level of Education (excluding higher education)**

Level of Education	Sex	No. of Students	Source
Kindergarten	Female	26,068(48.73 %)	MOE and UNICEF
	Male	27,431(51.27 %)	
Primary school	Female	1,903,618(44.47 %)	MOE and UNICEF
	Male	2,376,984(55.53 %)	
Secondary education (Intermediate and Preparatory)	Female	585,937(40.28 %)	MOE, UNICEF, UNESCO and USAID
	Male	868,838(59.72 %)	
Vocational school Teacher training school	Female	11,940(19 %)	MOE and UNICEF
	Male	50,901(81 %)	

**Table 5.1.3 No. of Teachers by Level of Education (excluding higher education)**

Level of Education	No of Teachers	Source
Kindergarten	2,993	MOE and UNICEF
Primary school	206,953	MOE and UNICEF
Secondary education (Intermediate and Preparatory)	74,681	MOE, UNICEF, UNESCO and USAID
Vocational school	4,693	MOE and UNICEF
Teacher training school	2,984	MOE and UNICEF

**Table 5.1.4 No. of Sessions and Schools by Level of Education (excluding higher education)**

Level of Education	No. of Session*	No of Schools	Source
Kindergarten	631	631	MOE and UNICEF
Primary school	13,413	11,066	MOE and UNICEF
Secondary education (Intermediate and Preparatory)	4,155	2,968	MOE, UNICEF, UNESCO and USAID
Vocational school	258	158	MOE and UNICEF
Teacher training school	171	101	MOE and UNICEF

\*Session: When more than two schools are opened in a building, a school will be called a session. Generally the school master and all the teaching staff change in each session.

**Table 5.1.5 Enrollment Rate in Iraq**

Year	Participation rate from 6 to 11 years
1990/1991 Academic Year	90.8% ( Female 87.7%, Male 93.9% )
2000/2001 Academic Year	87.3% ( Female 79.8%, Male 94.5% )
2001/2002 Academic Year	88.5% ( Female 83%, Male 93.6% )

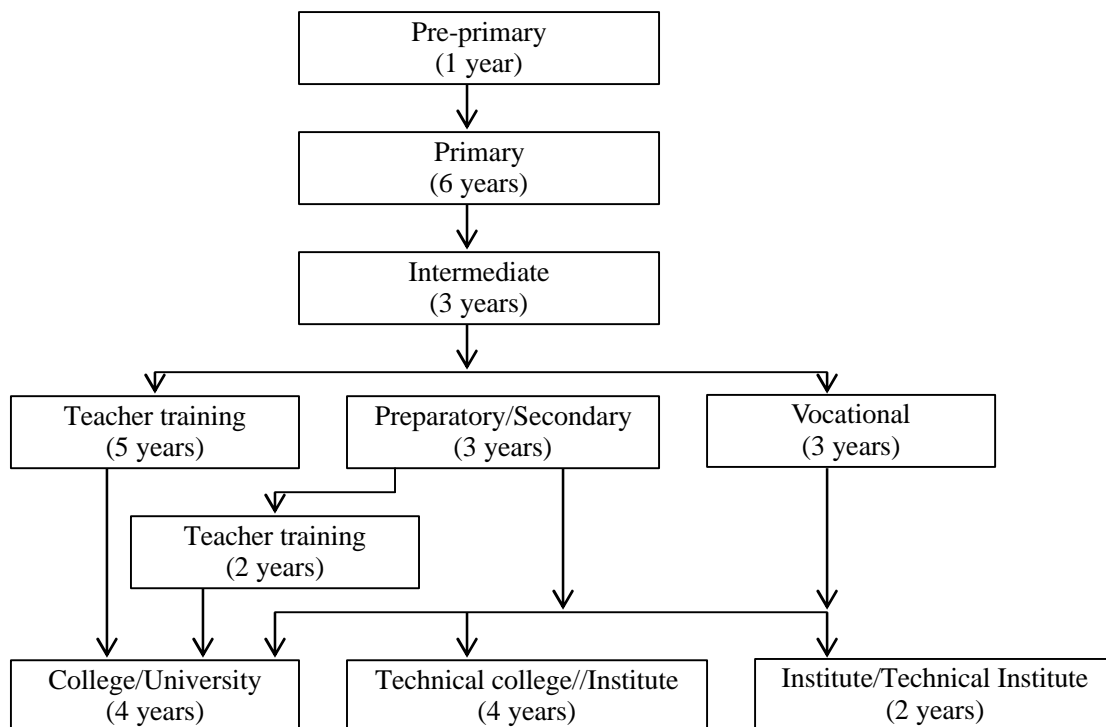
Source: Ministry of Education

Above shown Tables 5.1.1~5.1.5 are based on the consensus among related organizations during the seminar on “Education of Iraq” held in November, 2003 in Amman.

### 5.1.1 Educational System in Iraq

The educational system in Iraq is outlined as follows:

**Figure 5.1.1 Educational System in Iraq**



The pre-school, primary, intermediate, secondary, teacher training and vocational education are under the control of Ministry of Education and the college, university, technical institute and etc., are under the Ministry of Higher Education and Scientific Research. Kurdistan Region is not included.

Primary education is compulsory and the school period starts September 1 and closes June the following year. July and August are summer holidays. Education is provided free of charge.

At the final stage of each educational level, the national examination for graduation under the National Test Committee is given. It is essential to pass the examination to go up to the next step of the educational ladder. Before the conflict, students were split into preparatory course, vocational education course and others after the intermediate school, depending on test score. After the conflict, every student can select his course provided he passes the examination.

The educational level in Iraq before the gulf war was highly regarded and the gross enrollment rate of primary school was over 100% while the net was more than 90%, which was higher than the rate in Jordan.

Under the severe economic situation after the gulf war, the poor population group expanded. The trend has been deterioration of the quality of education with increased unemployment and declining

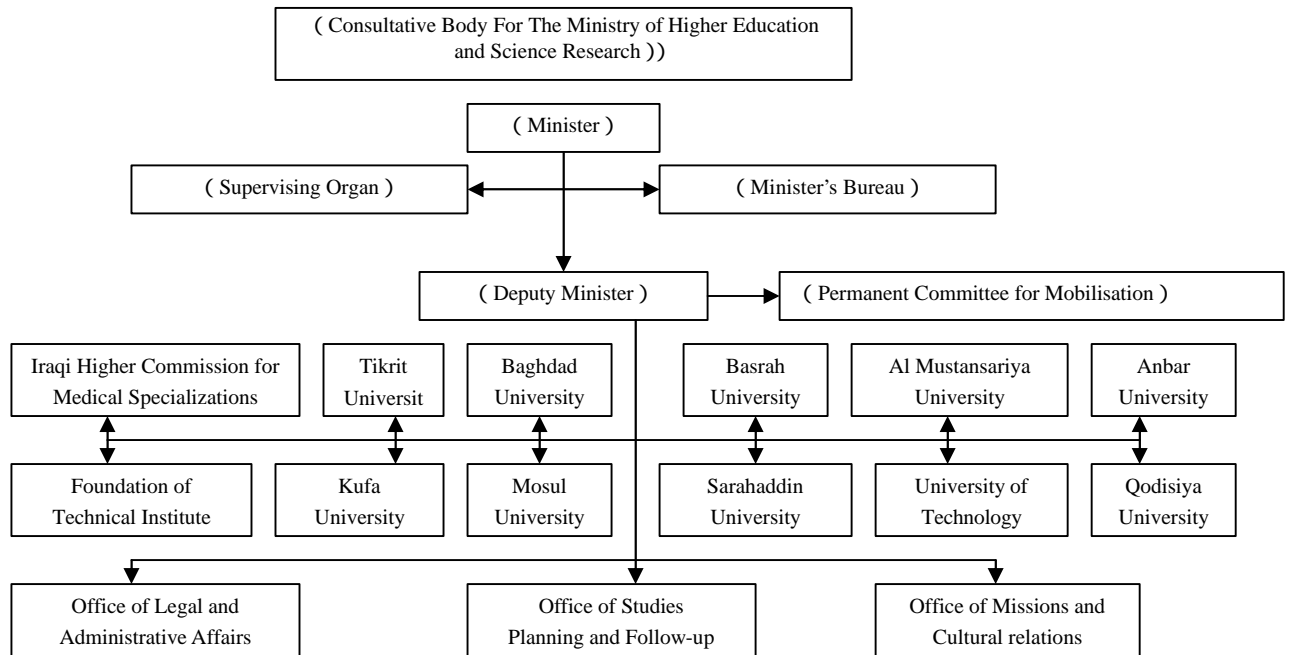
enrolment rate.

### 5.1.2 The Organizations of MOE and MOHE

15 Directorates such as Directorate of Curricula, etc. and 21 Directorates of Education in 21 Governorates under the Minister of Education.

The following are the Organization Charts of the Ministry of Higher Education and Scientific Research and the Ministry of Education.

**Figure 5.1.2 Organization Chart of the Ministry of Higher Education and Scientific Research**



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### 5.1.3 Ministry of Education (MOE)

#### (1) Short and Medium Term Priorities

The short and medium term priorities were identified as follows:

- 1) Updating and improving the quality of data for evidence-based planning and establishing the education management information system (EMIS).
- 2) Implementing the new structure of the MOE and upgrading its management capacity.
- 3) Rebuilding the physical infrastructure of the education system particularly school buildings.
- 4) Re-orienting the teaching staff and developing a comprehensive program for teachers training, focusing on instructional and learning methods as well as citizenship.
- 5) Reaching consensus on the future shape of the Iraqi education system and initiating the process of curriculum reform.

The strategies for the next four years are as follows:

- 1) Strengthening the performance and managerial capacity of the education sector particularly in areas like decentralization, training and capacity building of staff, evidence-based planning, modernizing administration and finance functions, establishing performance appraisal systems, and anti-corruption measures.
- 2) Upgrading educational institutions to respond to the full range of teaching/learning activities and to meet the minimum standards of health and sanitation.
- 3) Reforming the education system and expanding it to ensure universal access particularly for the poor and the disadvantaged to ensure that school children and adults acquire the knowledge and skills they need to compete in the global economy and participate in national development.
- 4) Establishing better quality and higher educational standards as well as accountability measures.
- 5) Improving the basic preparatory and in-service training of teachers and upgrading the skills.

#### (2) Problems facing the Education Sector in Iraq

##### 1) Politicization and rigid government control of the Education System

Under the former authority, all aspects of the education system were rigidly controlled, aggressively politicized and used to support the objectives of the ruling regime. The authority was the sole provider of education and there was no significant role for the community in policy making or choices among education institutions. There was very limited parental involvement in the education system. The confidence of Iraq in the quality of the education system progressively eroded over the last three decades.

##### 2) Insufficient Management of the Education Sector

In the educational sector, rational processes of strategic planning and evidence-based decision making are lacking. The personnel in charge of educational planning lack experience and capacity in information technology. The management, budgeting and finance systems are bureaucratic and often outdated. There was a top-down approach to decision-making and policy-making without use of information and research. The Ministry budget was not based on accurate analysis and assessment of needs; rather allocation of funds was based primarily on past practice. The financial system is equally obsolete and bureaucratic. Corruption and financial irregularities were widespread.

##### 3) Physical Infrastructure

School buildings were deteriorating, teaching aids were absent and there were severe shortages of library books and science laboratories. Poor sanitation and little access to potable water in many schools were common. No funds were allocated to maintain the school buildings. Classrooms are over crowded and a substantial proportion of schools work in double or triple shifts.

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### Human Resources Development

The personnel system has not encouraged excellence, innovation or change. Rather, it has rewarded those who followed procedures as established, and remained loyal to the Ba'ath Party and to those in positions of authority. There was no evaluation system for teachers. The teaching force has stagnated. Salaries of teachers fell precipitously during the last 13 years. This resulted in large numbers of retirement of qualified teachers and difficulty of replacing them with new teachers.

### Access to Education

The enrollment rates declined and the drop-out-rates increased particularly for women and children in rural areas. Choices for students who failed the basic education program were very limited. Access to education has been hampered by poverty, pushing children to search for work. Literacy rates appeared to be worsening and non-formal education is currently non-existent.

### Quality of Education

The quality of education has deteriorated. Factors responsible for the decline in quality include low level of education financing, deteriorating infrastructure, lack of minimum standards in the form of teaching-learning materials, outdated curricula, and overcrowding. Unmotivated, demoralized, and poorly trained staff were deployed in many schools. Teaching methods continue to be based on lecture and recall with no emphasis on analysis, synthesis or other forms of knowledge application. Innovation and initiatives to improve quality have been neglected.

### Teaching Training

Only 5% of primary school teachers have university degrees. Skills in communication and information technology are seriously limited. Professional development programs are lacking. There is no effective program for retention and placement of teachers and a large number of qualified and well trained teachers have left the schools. They have been replaced by less qualified teachers.

### Curriculum

The curriculum can be described as both narrow and shallow and has not been thoroughly updated for two decades. It is often rigid and lacks emphasis on in-depth understanding, reasoning, analysis and synthesis. The curriculum has been highly politicized. Ideology and propaganda are embedded throughout all textbooks covering every required subject. There is no effective adaptation to the labor market.

### Instructional Methods

Methods are predominantly based on passive learning and memorization without understanding. Many schools lack basic tools for teaching and learning like library books, laboratory equipment and classroom supplies. Textbooks and teaching/learning materials are often inadequate.

### Examinations

The national examination system has been highly valued by the Iraqi authority but there was no way to correlate student success with individual teacher. It was not effective and productive. The current examination system does not encourage initiatives and innovation on assessment of students. Attendance and other non-academic factors are used to calculate the final test grades and these factors have hampered the actual measurement of learning.

### Vocational Education

The system is plagued by problems such as the lack of adequate buildings, equipment and qualified staff. Existing programs do not seem to respond to the market needs and requirements of the new economic system in Iraq.

### (3) Major Policy Direction

The new educational system in Iraq will be guided by the following major policy directions:

#### 1) Access

Reaching universal access to quality education; eliminating drop-outs and ensuring free access to basic education irrespective of ethnic origin or socioeconomic status; promoting access to life-long learning.

#### 2) Equity

Eliminating disparities between girls and boys, regional and rural/urban disparities, ethnic and socio-economic differences

#### 3) Excellence and relevance

Upgrading quality to compete at the international level and increasing relevance to local needs, labor market, and sustainable development

#### 4) Citizenship and Governance

Depoliticizing education and ensuring the independence of education; promoting human rights, freedom of thought and expression, tolerance and national unity

#### 5) Participation

Strengthening community involvement in planning, executing, and evaluating the education system; achieving closer coordination with higher education and other relevant sectors; encouraging the contribution of the private sector to quality education

#### 6) Institutional Management

Changing to evidence-based planning, performance-driven evaluation, and decentralized management; overcoming corruption

### (4) School Reconstruction

The number of school facilities is approximately 15,000, while the registered number of schools is about 18,500. The difference comes from double shift and triple shift schooling system.

By MOE and UNICEF assessment of the magnitude of damage to school buildings, more than one sixth of Iraqi school buildings (2,751 schools) were looted, damaged or burned. More than 2,400 schools were damaged due to bombing and 197 due to burning. Ammunition existed in 138 schools and weapons were found in 101 schools. The percentage of schools damaged in Baghdad during the conflicts was 21% (466 out of 2,213). The degree of damage varied. Looting removed ceiling fans, lighting, furniture, school desks, fences, doors, glass, blackboards, cabinets, electric cables, school radio stations, telephones, refrigerators, air coolers and air conditioners.

Based on the survey conducted by RISE (Revitalising Iraqi Schools and Stabilisation of Education), the damage level is relatively small in the northern area and greater in middle and southern areas.

The majority of schools have no access to the minimal standards of hygiene and sanitation. UNESCO reported that only 32% of primary schools visited by UN inspectors in 2002 had a satisfactory water supply while 52% of toilets did not meet the basic standards of hygiene.

### (5) CPA Plan

From May to December 2003, 1842 schools were repaired or rehabilitated. Supplement funds will be used to repair pre-school, primary and secondary schools in nine Governorates across Iraq. Many of these schools are in areas that have not received much rehabilitation attention because of security issues. The supplemental funds will also be used for: i) restoring water and sanitation services to schools, ii) forming or reactivating PTA, iii) reducing the number of schools holding multiple shifts, iv) establishing 162 model schools, Centers of Excellence, v) developing television for pre-school children, and vi) ensuring the delivery of school supplies.

To date, US\$10 million has been apportioned by USAID for this program.



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(6) Pre-school Education

Pre-schools and kindergartens cater to children aged 4 to 5 years. A total of 54,000 children were enrolled at this level in 2001/02. Total enrolment compared to population aged 4 and 5 years hovered around 7% during this period. The attendance in this educational level is on a voluntary basis. The net enrolment ratio in pre-school education is reported to be 5.74% in Iraq compared with 29 in Jordan, 66 in Kuwait, 59 in Morocco, and 65 in Lebanon.

(7) Primary School

1) Current situation of Primary School

More than 4 million students were reported to have enrolled at the primary school level in 2002. The schools are separated by sex and in case of mixed education, the classrooms are separated by sex.

**Table 5.1.6 Student and Teacher in Primary School (2000/01 academic year)**

Area	Student			Teacher	School
	Total	Boy	Girl		
Middle and Central	3,385,138	1,888,907	1,496,231(44.2%)	158,468	8,749
North	646,208	366,227	279,981(43.4%)	32,182	2,960
Nation	4,031,346	2,255,134	1,776,212(44.06%)	190,650	11,709

Source: UNESCO

During 1990, harsh economic conditions have meant that some of the poorer families were not able to send their children to school or that children dropped out of school at an early stage. Unmotivated teachers and the lack of textbooks and teaching/learning materials, not to mention the weak teacher-parent dialogue and contact have compounded the situation.

A sample survey conducted in the year 2000 showed that only 76.3% of children aged 6 to 11 were reported to be attending primary school. Some 31.2% of girls in this age group were out of school as compared to 17.5% of boys. The gender disparities are expanding, and the gap between urban area and rural areas also widen.

The net enrolment ratio in 1999/2000 was calculated to be 93% and the grade repetition rate was 10%. The number of pupils who repeat or drop out in grade 6 is increasing. UNICEF reports that Iraq's grade repetition rate of 14.5% was among the highest in the Arab region in 2000/2001 academic year. Drop out rate is also reported to be high. In 2000/2001 academic year, the number of children in grade 6 was only 45% of the number of children in grade 1. The high level of grade repetition may be attributed to various factors: the loss of trained teacher from the profession, the poor condition of schools, the shortage of textbooks and other educational materials, and poverty which forces many students into working to supplement the family income. The survey by Central Statistical Organization and UNICEF in 2001 revealed that over 10% of children aged 5-14 years were working in 2000. The highest rates were found in Babylon, Maysan, Salah Aldeen, Kirkut and Wasit.

Before 1990, there was a steady increase in the number of qualified teachers, to cope with the increase in primary school enrolment. After the Gulf War, teacher salaries decreased dramatically to around US\$5 to 10 per month and many qualified teachers left the system, looking for better paying jobs. Teachers who stayed were poorly motivated and discouraged. The loss of retired qualified teacher was compensated by the appointment of less qualified personnel. Many senior and qualified teachers are coming back depending on the improvement of salary level.

After the Gulf war, there was an acute shortage of textbooks and teaching materials and it continues up to today.

Many educational facilities were affected by the Gulf War and the current conflict; thus there is a high need for classroom rehabilitation. However, even before the conflict, the shortage of classrooms forced many schools into double and triple shift schooling.

**Table 5.1.7 Educational Facilities in Iraq**

Level of education	No. of students	Proportion by sex (%)		No. of classes	No. of schools	No. of teachers
		Male	Female			
Pre-school(kindergarten)	53,499	51.27	48.73	631	631	2,993
Primary school	4,280,602	55.53	44.47	13,413	11,066	206,953
Intermediate and	1,454,775	59.72	40.28	4,155	2,968	74,681
Vocational school	62,841	81.00	19.00	258	158	4,693
Teacher training	66,139	38.00	62.00	171	101	2,984
合計	5,917,856			18,628	14,924	292,304

Source: USAID ( based on the figure of UNESCO and UNICEF )

**Table 5.1.8 Rehabilitation Needs of School Building**

Condition	No. of schools	Proportion
Schools in need of demolishing or rebuilding	1,343	9% of all schools
Schools in need of major rehabilitation	5,790	40% of all schools
Schools damaged in some way	11,939	80% of all schools

Source: USAID ( based on the figure of UNESCO and UNICEF )

Currently USAID, UNICEF (to which Japanese Government also contributed US\$10 million), UNESCO through Oil-for Food program, and OHDACA (Overseas Humanitarian, Disaster and Civil Aid by Department of Defense in US) etc., are involved in the rehabilitation of schools, printing of textbook, supply of school desks and chairs, development of curriculum, training of teachers. In the field of school rehabilitation, NGOs are active so some complications are seen.

## 2) Curriculum

**Table 5.1.9 Curriculum in Primary School**

Subject	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
Islamic Education	4	4	4	4	4	4
Arabic Language	11	11	11	11	7	7
English Language					4	4
Mathematics	6	6	6	6	5	5
Civics				3	1	1
History					2	2
Geography					2	2
Social and Moral Education	1	1	1	1		
Science	4	4	4	3	3	3
Agricultural Education				1	1	1
Art Education	2	2	2	2	1	1
Physical Education	3	3	3	2	2	2
Music and Anthems	1	1	1	1	1	1
Family Education					1	1
Total	32	32	32	34	34	34

Source: UNESCO

## (8) Secondary Education (Intermediate school and Preparatory school)

### 1) Situation

The gross enrolment ratio in secondary education was 38.3% (47.1% for males and 29.1% for females) in 1999/2000. High grade repetition rates have been an issue in the secondary education. The grade repetition rates were around 35% in intermediate and 25% in preparatory school respectively.

In the secondary education, the same as in primary education, the deterioration of educational

quality has been affected by the decrease of teacher salaries and other factors. The shortages of textbooks and teaching materials are still severe in Iraq.

**Table 5.1.10 Student and Teacher (2000/01 academic year)**

Area	Students			Teachers	Schools
	Total	Male	Female		
Middle/South	1,063,842	651,053	412,789(39.8%)	63,480	3,051
North	227,487	129,907	97,560(42.9%)	11,149	650
Nation	1,291,309	780,960	510,349(39.5%)	73,989	3,701

Source: UNESCO

The deterioration of buildings and shortage of classrooms accelerated double shifts and triple shifts.

(9) Vocational Education

1) Current situation of vocational education

Vocational education, under the Directorate of Vocational Education in MOE, targets to develop the middle level technician and has a regular intake of the graduates of intermediate schools.

UNESCO has been assisting vocational schools in the northern area of Iraq through Oil-for Food program.

2) Schools and Students

245 vocational schools exist in the nation excluding Kurdistan region with 62,841 students in the academic year 2002/2003.

**Table 5.1.11 Students, Teachers and Schools (2000/01 academic year)**

Area	No. of student	No. of teacher	No. of school
Middle/south	61,861	6,601	236
North	3,889	882	27
Total	65,750	7,483	263

Source: UNESCO

The number of students of vocational schools has been decreasing for the two decades. Currently every student can decide the course to take after intermediate school provided he passes the graduation examination. The former system, which was based on examination score, was abolished. This change accelerated the decrease of the number of students as well as the number schools. Drop out rate of students who fail the examination is high. In the academic year 2000/2001, 1,204 students dropped out while 10,976 students failed the examination.

27 vocational schools exist in northern area, but trades covered are limited.

3) Field and trade

The fields are divided into technical/industry, commerce, agriculture and home art, which cover 21 existing trades: namely, electricity, chemical industry, mechanics, electronics, sewing, commerce, computer maintenance, agriculture, household, metallurgy, automobile mechanics, carpentry, communication, printing, plumbing, mine, air-conditioning, food industry, textile, ceramics, and home arts. Trades such as building, water and sanitation and catering etc., may be added in the future.

4) Condition of building and equipment

Many of the 81 vocational schools in Baghdad were damaged by looting after the conflict. Out of 81 schools, 50 schools have been rehabilitated and the remaining 31 schools are scheduled to complete rehabilitation by June 2004.

Even before the conflict, the procurement of spare parts and new equipment were prohibited and almost all equipment is not functional. Therefore, lessons are limited to lecturing with short term practice arranged through outside factories.

UNESCO reports that vocational education in Iraq is facing various constraints such as: limited trade selection, inadequate curriculum, and lack of securing market needs. Vocational schools have not been able to provide a good supply of labor to the labor market in Iraq which is characterized by limited employment. MOE is implementing a joint market survey with the directorate of planning of Ministry of Industry to secure the market needs and improve the curriculum. MOE pointed out that no practical or actual training in the school is hampering the development of human resource appropriate for the market needs.

5) Teacher

Past issues in the education were the aging building and obsolete equipment, outdated skills and the low salary of teaching staff. Recently, the salary of teaching staff was upgraded from the 5 to 7 dollars to between 50 to 150 dollars per month. Due to this, many retired teachers came back, so the education level is now recovering.

The required qualification for the teaching staff is divided into two categories: engineers and technicians. Engineers graduate from technical colleges or universities after 4 years of schooling. Technicians, on the other hand, graduate from technical institutes after 2 years of schooling or 2 years of experience in the field after the vocational school.

6) Budget

The asset of former MOE is frozen, so all the budget is distributed by CPA. About 80% of budget is used for the salaries of staff and teachers so the budget for maintenance and operation is limited. However, the Directorate of Vocational Education has been earning some revenue through sponsored business or work since its establishment. This income has been used to supplement the salaries and maintenance of schools. Current income come from manufacturing of chairs and desks for primary schools for distribution by UNICEF or USAID, printing orders, and parts production for the private sector. The income is concentrated for purchasing and maintaining equipment although this development is small for all vocational schools.

7) Security

MOE explained that the looting and stealing which became a big national issue after the conflict has not continued in vocational schools in Baghdad since last June. Some incidents happened when all the school staff, students and safety guards left schools during the conflict. These incidents were never repeated due to the fielding of resident armed guards. The number of armed guards fielded depends on the size of the school.

8) Future student

The former authority imposed compulsory military obligation of 18 months or 2 years for the graduates of vocational schools. The student's choice was limited to military or the next stage of education. The period of military obligation for recruited graduates was automatically extended so that very few graduates eventually joined the employment sector. Therefore no data is available for the direction of graduates after school except military obligation and higher schooling. After the conflict, vocational schools have been reopening gradually; so accurate number of graduates may be available in the future. The Directorate of Vocational Education (DVE) estimates that future graduates may mainly go to higher schooling, gain employment in public or private sector, or become entrepreneurs. Office establishment from other Arabian countries is continuing and the recruitment opportunity is increasing. DVE is optimistic about future employment opportunities.

9) Maintenance system

The maintenance system carried on by the former authority included cleaning up of the facilities after use of students either on a daily or monthly basis carried out by maintenance staff. Repairs were made in schools, overseen by the teaching staff usually mobilizing the students themselves.

10) Practice

The equipment for practice originally consisted of tool boxes distributed to all students at the entrance and equipment installed in each trade workshop. The distributed tool boxes were given to the students for their personal use after graduation. After the gulf war, the distribution of tool boxes was abolished and the non-working workshop equipment increased.

DVE requested Japanese government to restart the distribution of tool boxes and to renovate the broken or obsolete equipment.

(10) Teacher Training

**Table 5.1.12 Student and Teaching Staff in Teacher Training School (2 years, 5 years) in Middle and South**

Academic Year	Teacher			Student			School
	Total	Female	Male	Total	Female	Male	
1994/95	1,499	836	663	26,069	15,567	10,502	36
1995/96	1,409	793	616	23,807	14,398	9,414	35
1996/97	1,400	806	594	23,714	14,078	9,636	35
1997/98	1,446	877	569	30,567	19,496	11,071	54
1998/99	1,570	991	579	40,100	26,259	13,841	81
1999/00	1,602	1,048	554	48,025	30,298	17,727	107
2000/01	1,716	1,107	609	56,747	34,265	22,482	139

Source: UNESCO

The teachers in primary school are generally trained in 5 years after intermediate school or 2 years after preparatory school. In the last decade, the teachers were trained in 6 months, or sometimes 3 months to resolve the shortage of teachers.

#### 5.1.4 Ministry of Higher Education and Scientific Research

(1) Higher Education

In Iraq, there are 19 universities (3 in North), 9 technical colleges in center/south and 38 technical institutes (11 in north).

**Table 5.1.13 Student and Teacher in Higher Education (2001/02 academic year)**

Area	Students			Teachers	
	Total	Male	Female	Total	Female
Middle/south	297,292	195,530	101,762 (34.2%)	13,167	4,481
North	20,701	n.a.	n.a.	1,576	n.a.
Nation	317,993	n.a.	n.a.	14,743	n.a.

Source: UNESCO

The total enrolment in higher education amounted to 317,993 in academic year 2001/02 including 279,300 (34.2% female) in Middle and South and 20,701 in the North. The student/teacher ratio is 20.4 for the whole country with a discrepancy between the Middle/South (20.4) and the North (14.7).

Most bachelor courses last for four years, but five years are required for veterinary medicine, pharmacy and dentistry, and six years for medicine. Master's degrees require another two or three years and doctorates some three to eight years. The short-term courses at Technical Institutes lead to a postgraduate Diploma.

(2) CPA Plan

Minimal rehabilitation of the worst institutions will require at least US\$500,000 each. This will bring their structures up to absolutely minimal safety, sanitary and environmental (heating, ventilating, and air-conditioning standards). The average rehabilitation will run approximately US\$250,000 per institution.

In addition to rehabilitating building, rooms, and sanitation facilities, there is a need to supply the basic furnishings, equipment (computers, laboratory supplies and equipment, machinery and tools), and textbooks. Fund source has been apportioned by USAID.

(3) Technical Education

1) Technical College and Technical Institute

Technical education in Iraq under control of Foundation of Technical Education (FTE) consists of 9 technical colleges and 27 technical institutes, excluding 6 technical colleges and 11 technical institutes in Kurdistan region.

2) Fields and Trades

The courses are divided largely into 5 fields: Engineering, Medical, Agriculture, Administration and Applied Arts, including more than 50 trades. For the past two decades, there was no staff training, no replacement of equipment and no technology introduction made available so the educational program, trades and curricula are outdated. The present trades available in the fields are described below.

In Iraq, the nursing school under the control of Ministry of Health is furnishing training for graduates from intermediate schools, while FTE is providing the education for the graduates from secondary schools for the period of 2 years in technical institutes and 4 years in technical colleges. Baghdad Medical and Health Technical College is only one college which has a nursing course; 15 technical colleges in the nation have a nursing course. FET has a plan to establish new nursing college in Basrah to resolve the shortage of nurses in hospitals and is looking for a donor.

3) Teaching Staff

The qualification and title of the teaching staff of technical colleges and technical institutes are as follows:

**Table 5.1.14 Qualifications of Teaching Staff**

Degree	Bachelor's	High diploma	Master's	Ph. D	Total
No.	895	192	721	412	2,062

**Table 5.1.15 Titles of Teaching Staff**

Title	Assistant Lecturer	Lecturer	Assistant Prof.	Prof.	Total
No.	1232	494	303	33	2,062

Source: Technical Education Foundation, MOHSR, 2004.3

In addition to the 2,062 teaching staff, 4,000 technician trainers belong to TEF, except the Kurdistan region.

4) Condition of buildings

Out of 27 technical institutes, 7 technical institutes in Mosul, Kirkuk, Najaf, Amarah, Babylon, Ramadi and Basrah were constructed by Japanese contractors.

Many buildings under TEF were damaged by the war and the looted after the war. Especially the Basrah Technical Institute was damaged heavily in the battle area. However they are now under reconstruction under the budget of CPA.

At the Zafaraniya complex in Baghdad, six (6) colleges and institutes existed before the war: namely, Baghdad Technical College, Administrative Technical College, Baghdad Electrical and Electronic Technical College, Baghdad Technicians Training Technical Institute, Baghdad Applied Arts Technical Institute and Baghdad Technical Institute. The Baghdad Technical College was also damaged heavily, and so it transferred to the newly constructed building of 6,000 m<sup>2</sup> in area site of 20,000 m<sup>2</sup> at Dorah. The Electrical and Computer courses have already opened.

### 5.1.5 Ministry of Labor and Social Affairs

(1) Employment and Vocational Training Center

1) Task of Employment and Vocational Training Center (EVTC)

The Ministry of Labor and Social Affairs (MLSA) has taken charge of the vocational training for the physically and spiritually handicapped youth. General vocational training for other people, on the other hand, is furnished by 6 Vocational Training Centers (VTC) throughout the country through 6-month to 9-month short courses. EVTC was established in 1972 and has

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been operating 12 Employment Centers as unemployment affairs and 8 Vocational Centers as vocational training in the country.

The vocational training center furnishes training in 8 fields: electricity, plumbing, motor winding, air-conditioners, home appliances, carpentry, welding, automobile electrical and automobile mechanical.

2) Reconstruction after the conflict

The Ministry of Labor and Social Affairs is projected to reconstruct the existing 12 employment centers and 6 training centers in Baghdad, Basrah, Mosul, Najaf, Kirkuk and Erbil and establish 16 new employment centers and 12 vocational centers at the capital of each Governorate under permission of CPA.

The existing training centers have had no budgetary support since the year 1990 under the former authority and the facilities and equipment have never been updated. Furthermore, they were devastated after looting. To date, 8 vocational centers were already rehabilitated or constructed through the assistance of United States. The current vocational training is conducted in the field of computers and English at Baghdad Vocational Training Center.

Out of projected 12 training centers, 6 centers will be exclusive training centers for women in the fields of computer, secretariat, communication and sewing.

The Employment Center has just started registration of an estimated one million unemployed people and 300,000 demobilized soldiers, and is planning the vocational training for them. However, no training is available in the existing centers without equipment. Moreover 6 facilities and 800 staff of former Iraq military of industry are to be absorbed to the Employment and Vocational Center. The training of these staff is also urgent. In Baghdad, three workshops exist.

3) CPA Plan

CPA is to provide US\$153 million for private sector development. An additional US\$31 million was re-allocated to this program from the emergency supplies of refined petroleum products. The program of the Employment and Vocational Training Center in the Ministry of Labor and Social Affairs is also covered by these funds.

The employment center aims to deploy 28 centers in the nation by the end of June, 2004 to provide employment services, counseling, and other services to 1.1 million people, including 300,000 demobilized soldiers.

Each employment center will have an average of 40 staff; the cost of staffing an average center is estimated at US\$57,000 per year, or about US\$1.6 million for 28 centers. The average capital expenditure, such as for computers, generators, and furniture, is estimated at US\$153,000 per center, US\$4.38 million in total for all centers. The operation costs to serve about 1.1 million people are estimated at US\$5 per client, or US\$5.5 million in total.

The project for Vocational Center is to establish 16 centers. US\$80 million is planned for 2004.

Each vocational center will be staffed with an average of 60 staff and the cost of staffing an average center is estimated at US\$86,400 per year, US\$1.5 million in total for all centers. The average capital expenditure, such as for vocational training equipment and furniture are estimated at US\$1.12 million per center, US\$19 million in total. The operation cost to serve the estimated 240,000 unemployed people, is estimated at US\$5 per client, or US\$1.7 million in total. The cost of OJT designed to serve 153,000 demobilized soldiers and other unemployed people is estimated at US\$250 per client, or US\$38.3 million in total. The cost of renovating five of the six existing sites and constructing 11 new centers is estimated to be nearly US\$20 million. The assistance will be funded by the Department of Defense and USAID.

4) Assistance by other donors and NGOs

USAID has been rehabilitating the existing five training centers since last year and will construct eleven new training centers in Sulaimaniya, Tikrit, Diyala, Hilla, Kerbara, Diwaniyah, Kut, Amarah, Samawah, Nassiriyah and Ramadi.

KOICA (Korean International Cooperation Agency) announced it will construct an Iraq-Korea vocational training center on the scale of 7,000 m2 and select the construction company before

the first half of 2004 in order to start the construction in July. After completion of the building, several experts will be dispatched for the training in the trades of computer, home appliance repair, automobile mechanical, welding and carpentry. The project period is set from 2003 to 2006 however actual operation will be from 2005.

Kirkuk vocational training center will be rehabilitated by RTI (Research Triangle Institute) and the necessary equipment and technical cooperation will be provided through the assistance of US\$0.5 million by VOCA (ACD/VOCA: Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance) and US\$150,000 by RTI.

5) Requested Trades

The request to Japan was for total 7 centers: two (2) for Baghdad and one each for Basurah, Kirkuk, Mosuru, Najaf, Erbil. This request was within this year (before December 2004), because the Vocational Training Center was an urgent project.

### 5.1.6 Ministry of House and Construction

(1) Main construction machinery training center

The main construction machinery training center located 40 km from Baghdad to the southeast had been the only institution which had been able to train construction machinery maintenance and repair and issue a driving license in Iraq until 17 years ago. After that time, the new establishment of construction machinery training center by each ministry was permitted by the authority. However all training systems were disrupted after the gulf war and the following economic sanctions.

All the past records of training centers were burned in the looting and arson after the war came to the Ministry of House and Construction. The training center was also damaged and lost the equipment for training, although several equipment were just provided in the Oil-for Food programme before the war.

Hence, the central government decided to reconstruct the main construction machinery training center in the Ministry of Housing and Construction and give it the right to issue the license for the construction machinery. The existing facility was damaged heavily so a new center was to be transferred to the existing facility in Hamourabi in Shaab City.

(2) Construction material inspection center

The Ministry of Housing and Construction lost almost of all equipment of the related facilities by the looting after the war. The construction material inspection center also lost all its equipment. So the MOHC planned to develop the Al Rashid Engineering Science College and train inspection staff as well as implement inspection work for construction materials. However, the Al Rashid Engineering Science College was heavily damaged and lost all its equipment by the looting. MOHE decided to transfer this college to the Baghdad Institute of Technology.

### 5.1.7 Other Donors and International Organizations

(1) USAID activities in Iraq Education

The assistance of USAID in Iraq is as follows:

1) Immediately After the Conflict

- Provided technical assistance for the resumption of the Ministry of Education functions.
- Provided assistance for resumption of Ministry salaries.
- Funded 5.5 million examinations for transitional grades, which ensured the smooth continuation of school.
- Rehabilitated 2,339 schools during the first term of school year 2003-04.

2) Facilities and Supplies

- Awarded 633 grants worth more than \$6.1 millions to rehabilitate schools and education Directorate General Offices countrywide.



- Provided materials, equipment and supplies:
  - Distributed 1,495,283 secondary school kits that include pens, pencils, paper, math equipment, and other supplies.
  - Distributed 159,005 student desks, 26,437 teacher desks, 59,940 teacher chairs, 26,050 metal cabinets, 61,500 chalkboards and 58,500 teacher kits.
  - Delivered 808,000 primary student kits.
  - Delivered 81,735 primary teacher kits.
  - In consultation with the Iraqi Ministry of Education, reviewed 48 math and science textbooks for grades 1-12.
  - Printed 5.6 million math and science textbooks which have been distributed to schools countrywide. Second phase printing has commenced.

### 3) Institutional Strengthening

- Trained 899 secondary school Master Trainers during September 2003-January 2004 nation wide.
- Trained approximately 32,632 secondary school teachers and administration staff.
- Conducted an accelerated learning program in Baghdad, Nasiriyah, Ad Diwaniyah, and Karbala'. An average of 600 students are participating in the program. In February, the students completed mid term exams.

### 4) Higher Education

- Returned the Fulbright Scholarship Program to Iraq after 14 years absence. The program awarded at least 25 scholarships for Iraqis to study in the United States in 2004. USAID participated in the bi-national review committee for Iraq.
- Launched Higher Education and Development (HEAD) Program. Awarded five grants worth an estimated \$20.5 million for U.S.-Iraqi university partnerships:
  - A consortium led by Research Foundation of the State University of New York at Stony Brook partnering with Baghdad University, Al Mustansiriyah University/Baghdad, and Mosul University in archeology and environmental research.
  - The University of Hawaii College of Agriculture and Human Resources partnering with the University of Mosul Hamam Al-Alil for strengthening academic, research, and extension programs.
  - The Human Rights Institute at DePaul University College of Law and the International Institute of Higher Studies in Criminal Sciences (Italy) partnering with University of Baghdad to reform legal education.
  - Jackson State University partnering with University of Mosul for public health and sanitation.
  - The University of Oklahoma partnering with Al Anbar University, Basrah University, and the University of Salah ad Din in higher education initiatives.

OHDACA also has been rehabilitating the primary schools in Southern area.

### (2) UNICEF activities in Iraq

UNICEF has been supporting humanitarian interventions, focusing on the areas of immunization, primary health care, nutrition, water and sanitation, education and child protection in the three northern governorates through the OFFP and in the south/center through its regular Country Programme of Co-operation since pre-war period.

In the last year, the advocacy through broadcasting system distributed "School in Box" to about 80,000 students, approx.1500 fans, and lighting for 200 schools; it also procured "Education kits" for all primary schools across Iraq, provided school level security especially for girls schools, supported terminal and non-terminal examinations for 5.5 million children, made damage assessment of all schools in Iraq, rehabilitated about 65 schools in south/center Iraq, supported recovery of school level

data, psychosocial care programme for children, training of master trainers, training of teaching staff, etc.

Currently the following activities are ongoing or planned: printing and distribution of textbooks, the distribution of "Education Kits" for approx., 3.6 million primary school children, strengthening EMS, the distribution of "Office in a Box" for MOE and 18 DOEs in the center/south of Iraq, the rehabilitation of the office building of damaged DOEs, the installation of E Mail System at the MOE, and the rehabilitation of 200 additional schools.

The future major areas of collaboration are to support to MOE to undertake the reform of the legal and education policy frameworks, to support the MOE to undertake various quality reform initiatives including curriculum, teacher training and education management system reforms, to conduct EMS reform and strengthening, to expand the accelerated learning programme for out of school children and youth, especially girls, and to support training and capacity building of educational functionaries and authorities.

### (3) UNESCO activities in Iraq

Much of UNESCO's recent work in Iraq has taken place under the umbrella of the Oil-for-Food Programme. In the Center/South, the role was limited to monitoring the distribution by the Iraqi authorities of supplies to secondary and tertiary education institutions, benefiting some one million students at secondary level, 62,000 students in vocational schools, 57,000 students enrolled in teacher training institutions and almost 300,000 students attending institutions of higher education. Together with UNICEF, UNESCO monitored the importation and use of some US\$251 million worth of educational supplies imported by the Ministry of Education.

In addition, UNESCO was responsible for monitoring all of the US\$309 million worth of educational supplies imported by the Ministry of Education. UNESCO also facilitated the in-service training of supervisors and secondary-school subject teachers, utilizing extra budgetary funding.

In Northern Iraq, UNESCO's work has been more substantive. It has been directly responsible for programme implementation at the secondary and tertiary levels on behalf of the Government of Iraq.

The education system caters to some 200,000 students at the secondary level, 4,000 in vocational schools, 7000 in teacher-training institutions and 22,000 in institutions of higher education. Under the management of UNESCO, programme outcomes include the following:

- Rehabilitation/construction of 157 secondary schools and 89 higher education facilities
- Transportation of approximately 20,000 rural students to schools and distribution of over 56 million worth of vehicles to educational institutions
- Training of 11,000 secondary-school teachers and 1,800 faculty members in higher education
- Distribution of 152,000 school desks
- Distribution of US\$1.5 million worth of textbooks for secondary schools and provision of materials to enable the printing of over 2 million textbooks
- Labor-market survey to establish current employment needs and trends
- School mapping project for secondary education
- Support for policy development and the elaboration of a three-year strategic plan
- Three multimedia resource centers providing documentation/material in the fields of education, science, culture and other areas of UNESCO's mandate.

## 5.1.8 Budget of Iraq Government

### (1) Budget Result of 2003

Income in 2003 was US\$3.89 billion and the income by oil export accounted for 89% of total income. The expenditure was US\$6.1 billions. On balance, the deficit was US\$2.2 billions. The balance including other items is shown in Table 5.1.16.

Key initiatives of this budget include: i) US\$294 million for electrical improvement, ii) subsidies to state owned enterprises reduced by US\$269 million, iii) US\$257 million for reconstruction, iv)

US\$233 million for security and justice improvement, v) US\$225 million for defense funding, US\$211 million for public health improvements, US\$150 million for communications improvements, and US\$73 million for water and sewerage improvements.

**Table 5.1.16 Budget Balance in 2003**

Resource	Amount (\$US million)
Vested Assets	1,700.0
Seized Assets	795.0
Development Fund for Ira	1,192.0
Iraq Relief (appropriated)	2,475.0
NRRRF(Natural Resource Risk Remediation Fund)	489.0
Less (Spending before July, 2003)	-1,248.0
Net position as at July 1, 2003	5,403.0
Less:	
Budget Deficit	-2,211.9
Central Bank Currency Support	-2,100.0
Net position as at December 31, 2003	1,091.1

Source: Budget Revenues and Expense 2003, July – December, Budget Summary, Ministry of Finance, Ministry of Planning and Coalition Provisional Authority

The total expenditure including other expenditure of US\$3.5 billion from United States was US\$6.1 billion.

The US assistance in 2003 was US\$2.5 billion of IRRF (Iraq Relief and Reconstruction Fund), US\$502 million of NRRRF (Natural Resources Risk Remediation Fund) and US\$101 million of Army Operation and Maintenance Funds for the New Iraqi Army Transferred from the Iraq Freedom Fund, US\$3.078 billion in total. In the budget of 2004, US Government Appropriated funds have been reclassified to being “off-budget” sources of finance.

## (2) Budget on and after 2004

The main income will be the oil export. The scale of budget for 2004 is US\$12.8 billion and for 2005 is expected to be US\$19.2 billion. It was estimated that the oil production might be recovered by the pre-war level of 2.5 million barrels per day after 2005 however the oil production of 2.5 million barrels per day was attained as of March 2004.

The balance in 2004 is estimated as deficit of US\$590 million and one in 2005 as surplus of US\$12.8 million.

## (3) Budget in Education

The Capital Budget US\$6.7 million in Ministry of Education is and US\$8.0 million in Ministry of Higher Education in 2004 and US\$20 million and US\$5.0 million respectively in 2005. In IRRF, the budget is US\$82.0 million in basic education and US\$8.0 million in higher education. The Oil-for-Food Program is also still under implementation.

The rehabilitation of high schools, vocational schools and teacher training institutes in Baghdad may be completed soon excluding the schools to be demolished and reconstructed and the rehabilitation of higher education is under implementation such as US\$275,000 for Baghdad Institute of Technology, US\$95,000 for Baghdad University, and US\$160,000 for Al Anbar University. The fund source is US assistance. In the meanwhile, the rehabilitation of local schools is still left untouched. As for the primary and intermediate schools, the rehabilitation has been implemented by United States, UNICEF and NGOs however the local schools shall be future target. In 2004, the assistance of United States will be continued.

The Ministry of Education explained that upper schools such as high, vocational, teacher training may be rehabilitated by the assistance of United States and its own budget, but the primary and intermediate schools are huge in the number, so any assistance will be appreciated. The rehabilitation was concentrated into the facilities so urgent assistance for equipment is needed. The request for vocational schools was the decision and policy after discussion in the Ministry.

The Technical Education Foundation (FET) of Ministry of Higher Education and Scientific Research under control of the technical institutes and technical colleges in the nation announced that the rehabilitation of facilities will be implemented by the assistance of United States and its own budget,

so no assistance will be needed for the construction. The reconstruction shall be promoted focusing the necessity and market needs, and it will be the first major construction after a period of two decades.

The urgent assistance for equipment will be required for Japan. At the same time, urgent assistance to fill the gaps in knowledge and technology for two decades will be needed. So the introduction of advanced Japanese educational system, educational program, curriculum, syllabus and technology will be appreciated very much. The FET estimates that the assistance of equipment is urgent this year, and then after a few years, the procurement of equipment may be done by its own budget.

(4) Vocational Training

The vocational centers of Employment and Vocational Center in Ministry of Labor and Social Affairs are to be assisted by US\$80 million from United States. This fund includes the operational budget such as salaries of staff and training cost so the capital budget is approx., US\$20 million for rehabilitation of existing vocational training centers and the construction of new vocational training centers. CPA advisor in charge of vocational schools requested the assistance of equipment since the facilities will be rehabilitated by United States. In case of no support from Japan, urgent contact will be needed with other donors to be invited for the assistance.

## 5.2 Selection of Candidate Projects

### 5.2.1 Selection Criteria of Project

(1) Education

The order of priority in the educational field from the aspect of emergency is primary school, intermediate school, high school, junior college and then university. The equipment project, where soonest impact is expected, will be the first priority; however, securing security after providing and installation of equipment is very important since the crime rate is still at a high level.

In the project of equipment supply, the target area shall be limited and imbalances among neighboring schools shall be avoided.

During the construction project, the following points will be important:

- The target will be building of primary and intermediate schools, which Japanese supervisor is not needed and local constructors have enough experience and skill of repairs and construction.
- One story buildings, where construction method is not complicated and where the soil survey is unnecessary due to the existing building, will be targeted.
- The school with simple demolishing work will be targeted.
- The construction period shall be maximum 8 months.
- The demolishing and rebuilding will be targeted to avoid the duplication with other donors.
- Samawah city shall be separately studied from the aspects of job creation and the stabilization of people's livelihood.

(2) Vocational Training

The fields closely related to the reconstruction of Iraq shall take priority. The priority project shall be equipment supply where soonest impact can be expected. Disparity of equipment level in the same school shall be carefully avoided. From the viewpoint of gender, the field and school which may accelerate women's rehabilitation into society or women's income generation, shall be prioritized. Also, securing security after providing and installation of equipment will be important.

The order of priority in the vocational level shall be vocational centers for training of jobless people, vocational schools for creating technicians, and then technical institutes for engineers i. However, the priority may be changed from the aspects of security and available space if the building and facility is damaged or undeveloped.

For operation capability, the level of trainers, and the management and operation capacity shall be highly considered. If the project includes some equipment with high operation cost, the past experience of self income generation will be considered.

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The equipment with low maintenance cost shall be selected as much as possible, and the equipment for which the Iraqi side has the sufficient technology for operation and maintenance shall be prioritized.

The duplicated project with other donors shall not be picked up and if another donor assists in another similar facility, the direction will be reported to JICA.

(3) Others

The socially and culturally important projects shall be discussed as to whether they should be included or not. The excluded projects will be transferred to the related survey for the assistance of Iraq reconstruction.

## 5.2.2 Assessment of Selected Projects

Out of eight (8) projects in the list proposed by Japanese company at the initial stage, three (3) projects are insufficient in details. Another eight (8) projects were requested to UN-Habitat in 2003 and 2004 but supported by any donor. Two (2) other projects with buildings were constructed by Japanese constructors in the past, but were not proposed by any Japanese company. Thus, the total number of projects is nineteen (19) including one (1) other project.

During the survey, the following eleven (11) projects were added: one (1) project requested to UN-Habitat, one (1) project requested by the Ministry of Education, one (1) project sourced from UNESCO, seven (7) projects requested by the higher institutes of MOHE and one (1) project requested by MOE of Erbil Governorate in Kurdistan region.

In the educational projects, no data on school was obtained for sixteen (16) projects: namely, EV-1, EV-3, EV-6, EV-7, EV-14, EV-17, EV-18, EV-21, EV-23, EV-24, EV-25, EV-26, EV-27, EV-28, EV-29 and EV-30. The remaining seven (7) projects are classified based on the criteria in 2.5 1. (2) as follows:

**Table 5.2.1 Classification of Educational Projects Based on the Criteria**

Item	Level	Equipment Project	Building Rehabilitation	Area	Disparity in the Area	Security	Others
EV-2	J. College			Limited	no		
EV-4	J. College		Needed	Limited	no		Revised request
EV-5	General			Limited	no	unknown	Small scale
EV-11	University			Limited	no		Abolished
EV-15	Primary & Intermediate			Limited	no	Teacher	
EV-16	Primary & Intermediate			Limited	no	Teacher	
EV-22	Primary & Intermediate			Limited	no	Teacher	

EV-15 and EV-16 are the construction projects of primary and intermediate schools, but the completion of damage assessment report was delayed until the end of March and it became impossible to obtain the detailed information. Thus five (5) primary schools in Samawah city were targeted since the available data was relatively reliable and sufficient for the plan.

In the vocational training field, three (3) projects, excluding three other projects (3) which no data is available, are classified based on the criteria 2.5.2 (2) as shown in Table 5.2.2.

Out of fourteen (14) projects for which no information is available, six (6) projects (namely, EV-1, EV-3, EV-8, EV-9, EV-13 and EV-14) seem to be duplicated with other listed projects. The remaining eight (8) projects under control of the Ministry of Higher Education and Scientific Research located in Baghdad or near Baghdad were damaged by the bombing, looting and arson. However, the buildings are under rehabilitation which will be continued until the end of 2004. Thus, their requests are almost only for equipment supplies, but the school data are not yet available. Their priorities, therefore, will be lower.

### 5.2.2 Classification of Vocational Projects Based on the Criteria

Item	Target	Field	Disparity in facility	Gender	Building	Operation	Skill	Security	Others
EV-10	Post-intermediate	25	Needed	Needed					
EV-12	Jobless people	8	Needed	Needed					Other donor
EV-19	General	Heavy Machiner							Damage assessment

Remark: EV-10 of the educational project is classified in vocational training from the contents of project and equipment.

The details of ten (10) projects mentioned above and one (1) project under the Ministry of Culture are as follows:

#### (1) EV-2 Equipment Rehabilitation of Technical School

The damage varies by school, although every school was damaged by bombing and or looting. The schools that had relatively minor damage were the institutes of Kirkuk, Najaf and Amarah. The Technical Institute Foundation surveyed the facilities and got the data with necessary equipment. However, the priority in Technical Education Foundation is not so high as emergency grant aid.

#### (2) EV-2-2 (EV-4) Equipment rehabilitation of Zafaraniya Complex

Although the facilities were damaged by the bombing and looting, the request is for the equipment for the facilities with minor or no damage in the Institute. Due to insufficient security information and partial data of the institute, the priority was low. However the rehabilitation of building was made and the revised request received for the priority areas of Mechanics, Electricity, Civil and Nursing.

#### (3) EV-5 Rehabilitation of Television Equipment of Open University of Education for Teacher Training.

In Iraq, the public broadcasting television system was destroyed and made unworkable so the project is planning to distribute video tapes after processing. The project can be implemented if the video cameras and personal computer with editing software will be available. The project scale is very small and the Iraqi authority may handle the project itself.

#### (4) EV-10 Equipment Rehabilitation of Vocational Schools

Based on the first list of requested equipment, the cost estimation was finalized and the list submitted in mid February. The project was divided into four (4) regions: Baghdad, North, Middle and South. The vocational schools can be classified as vocational training and the number of beneficiaries is huge as the selected schools are concentrated in high density population areas, so quick impact can be expected.

**Table 5.2.3 Trades and Equipment**

1.	Electricity	Trainers and measuring instrument
2.	Electronic	Trainers and measuring instrument
3.	Sewing	Sewing machine and sewing instrument
4.	Commercial	Personal computers etc.,
5.	Computer maintenance	Personal computers and measuring instrument
6.	Automobile	Car repairing machinery and tool etc.,
7.	Carpentry	Wood processing machinery and tool et.,
8.	Electronic communication	Trainers and measuring instrument
9.	Air-conditioning	Air-on trainers and tool etc.,
10.	Food industry	Measuring and laboratory equipment
11.	Construction	Construction material production equipment and tool etc.,
12.	Chemistry	Laboratory Equipment
13.	Welding	Welding equipment in variety and tool etc.,
14.	Catering	Cooking and measuring instrument
15.	Workshop	Machine tool and tool etc.,

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The availability of operation cost is superior to other types of schools and the staff level is sufficient since they graduated from technical institute or technical college. MOE will assure the security of the school, and the priority in MOE is high.

Fourteen (14) trades and workshops were requested by MOE as shown in Table 5.2.3 above. The number of trades per school is one (1) to five (5) or three (3) on average.

MOE regards the schools of priority A since the schools are in good condition or have been rehabilitated. However, it is necessary to confirm whether the rehabilitation made by USAID is sufficient or not. Thus the facility conditions of schools were inspected by the local consultant using sampling survey. By the survey, it was confirmed that the equipment could be introduced into the facilities.

Finally, 49 schools were selected and the equipment plan with cost estimation was prepared.

**Table 5.2.4 Selected Vocational Schools**

Area	City	School
North	Mosul	6
Capital	Baghdad	20
Middle	Hilla	2
South	Samawah	3
Total	10 cities	49

Remark: Prepared by preliminary survey team

(5) EV-11 Rehabilitation of Al Rashid College

Al Rashid Technical Science College was located at the edge of Baghdad and damaged heavily because of the location and the nature of school. MOHE closed down this college and absorbed it into the Baghdad Institute of Technology

(6) EV-12 Equipment Rehabilitation of Vocational Center in Employment and Vocational Training Center (EVTC)

EVTC has a plan to develop some equipment for its own use and thus prepared a needed equipment list for proposing to Japanese emergency grant aid. Employment and Vocational Training Center consists of Employment Center and Vocational Center. Korean International Cooperation Agency (KOICA) is scheduling to build a new vocational center in Baghdad and furnish the technical cooperation; also, some US NGOs are also scheduling to assist the existing Kirkuk vocational center with rehabilitation of building and equipment supply. EVTC requested Japanese Government to assist the existing five (5) vocational centers in Baghdad, Basrah, Najaf, Mosul and Erbil through equipment supply. The vocational centers are targeting the training of unemployed people in Iraq and the priority is high.

The request covers twelve (12) fields: Automobile electrical, Engineering drawing, Carpentry, Automobile mechanical, Welding, Motor winding, Home appliance repair, Electrical, Sewing, Air-conditioning, Commercial and Electronics.

(7) EV-15 Primary and Intermediate School Rehabilitation in Baghdad

In the telephone meeting with the Ministry of Foreign Affairs in Japan, it was noted that the extensive assistance for the schools should be implemented through international organizations. So the project survey narrowed to the classrooms to be demolished and reconstructed.

The assessment survey of the magnitude of damage to school buildings was conducted by MOE with technical assistance by UNICEF. The survey was completed on January 2004, results and inventory are now being computerized through the same funding source. The electronic data was scheduled to be made available by end of February, but delayed by the end of March, 2004.

By the needs verification of the schools to be demolished and reconstructed in Baghdad city using local consultant based on sampling survey, one (1) school which MOE and district authorities classified as a school to be demolished and reconstructed, was rehabilitated by NGOs. The survey

revealed that the damage assessment report was still reliable. The damage assessment report is not available up to end of March. Thus the project creation in Baghdad city was suspended.

(8) EV-16 Primary and Intermediate School rehabilitation in southern area

The damage assessment report was delayed, but the data of the schools to be demolished and reconstructed in Muthanna Governorate is available.

The data shows that the number of schools to be demolished and reconstructed in Muthanna Governorate is thirty-one (31) and six (6) schools out of this figure are located in Samawah City. The target is five (5) schools out of these six (6) schools.

Almost of areas in these schools are very narrow as they are between 1,500 and 2,500 m<sup>2</sup>. Some building in the sites may be used for the classrooms. Thus, they are planned as two (2) story buildings with a basic plan of five (5) classrooms, 1 principal's room, 1 teachers' room, pupil's toilets at the rate of 1 for 45 pupils and teachers' toilets separated by male and female as per the UNICEF methodology.. This project does not meet to the total needs in the school, but targets to rebuild the unused classrooms. Equipment includes desks and chairs for pupils, desks and chairs for teachers and air-conditioning, etc.

**Table 5.2.5 Needs for Demolishing and Reconstruction in Samawah City from Existing Building Data**

School	Location	Size	Area	Student			Teacher			Story	Room
				F	M	T	M	F	T		
Al Zahawi	Al Mutasher Village	50x50	2,500	42	41	83	3	5	8	1	
Ibn Al Nafis	Said Hady Village	60x40	2,400	58	87	145	2	11	13	1	6
Al Mithak	Hai Al Amal	35x70	2,450	0	381	381	1	18	19	2	
Al Mamlha	Al Mamlha	40x40	1,600	n.a	n.a	n.a	n.a	n.a	n.a	1	6
× Al Sinaa	Hal Al Resala	50x30	1,500	60	138	198	6	4	10	1	
Zubida	Al Kishla	35x70	2,450	0	447	447	1	11	12	1	

Source : MOE

Cost was estimated by two (2) methods of direct bidding to local contractor and bidding to Japanese contractor. In the school drawing obtained from MOE, the whole wall supports the building without columns. From the aspect of safety and durability, the columns should be included. Hence, it is reasonable to invite Japanese constructors to the bidding in order to avoid technical troubles.

The supervising should be considered to rely on the Japanese NGO.

(9) EV-19 Main Construction Machinery Training Center

This is a maintenance and operation training center needed for the reconstruction of Iraq and a request for the heavy equipment for construction without any rehabilitation of building. The priority may be high. Obtained equipment list is estimated. However the additional information did not arrive yet. The market information related to the construction machinery in Iraq is insufficient.

(10) EV-20 Equipment Rehabilitation of Iraqi Museum

The rehabilitation of Iraqi Museum reported by the international mass media has a high priority. For the assessment on possibility of the bilateral assistance of the emergency grant aid or the multi-lateral assistance through UNESCO, the contact with the UNESCO staff in Baghdad in charge of Baghdad Museum was done. However the Director of Baghdad Museum went to Tokyo, so detailed information was not obtained during the survey.

(11) EV-22 Equipment Rehabilitation of Secondary Schools

As per the selection criteria, this equipment project is prioritized highly from the point of view of a large number of beneficiaries, if the region will be selected properly.

The project targeted the secondary schools following the advice of UNICEF and UNESCO because secondary schools including intermediate schools and preparatory schools generally have several laboratories. As for the region, the southern part and northern part in Iraq were selected due to being relatively minor regions in terms of NGO activities.

The equipment includes the equipment for teacher rooms, OHP, and science equipment for intermediate level. The list of equipment was prepared and received; however the cost per school for



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equipment in the list is very high, so only a limited number of schools can be equipped under this Project. Consequently, similar equipment such as science kits which are usually distributed in the developing countries by other donors and international organizations, were adopted.

**Table 5.2.6 Shortlisted Projects**

Serial No.	Sector No.	Field	Name	Site	Implementation Agency	Details	Amount	Duration	Priority
1	EV-2-2	Higher Education	Equipment Rehabilitation of Technical Institute	Baghdad (Zafaraniya)	MOHE, TEF	The Technical Institute constructed during 1970 ~ 1980, could not maintain the facility and equipment due to economic restrictions after gulf war. At the Zafaraniya complex in Baghdad, 6 technical colleges and institutes under the control of Technical Education Foundation (FET). Almost of all the equipment were lost by looting after the war. The buildings of technical institutes in the nation has been rehabilitated by own budget. The technical institute in this Zafaraniya complex was prioritized by TEF to request the assistance from Japan.	119 millions yen	3 month	
2	EV-10	Vocational Education	Equipment Rehabilitation of Vocational schools	Nationwide	MOE	The vocational training in Iraq under control of MOE is after 9 years basic education. The schools damage by bombing and looting is now being rehabilitated by USAID etc., No equipment in the school exists. Equipment rehabilitation project for main cities in Iraq. No practice is currently available in the school so soonest assistance is needed. Based on the criteria prepared by MOE, 49 vocational schools were selected in Baghdad, Middle, South and North for equipment supply for 14 trades and workshop.	620 million yen in North 107.1 millions yen in Baghdad 106.4 million yen in middle 663 millions yen in South 341.8 millions yen in total	6 month	

Serial No.	Sector No.	Field	Name	Site	Implementation Agency	Details	Amount	Duration	Priority
3	EV-12	Vocational Training	Employment and Vocational Training Center (5 vocational training sites) Equipment Rehabilitation	Baghdad, Basrah, Mosul, Najaf, Erbil	Ministry of Labour and Social Affairs	In the six employment and training center established in 1972, the training for physically and spiritually handicapped youth and unemployed people have been done. The training period is short and the scale is small. For the stabilization of people's livelihood and the moderation of unemployment rate, the center is being strengthened to establish new centers in main cities in the nation. KOICA is scheduling to construct new training center in Baghdad but the operation will be after the next year. Kirkuk vocational center is scheduled to be assisted by the NGO of US with rehabilitation of building and equipment. so the assistance for other centers are requested to Japan. The fields are 10 of Electric, Motor winding, Air-conditioner, Home appliance repairing, Carpentry, Welding, Automobile mechanic, Automobile electrical, Computer and Communication. 11 new vocational centers will be constructed by USAID. This project is needed urgently so the equipment was designed to be installed by October.	Baghdad 268 millions yen Basrah 256 millions yen Mosul 275 millions yen Najaf 261 millions yen Erbil 275 millions yen Total 1,335 millions yen	3 month	
4	EV-16	Education	Primary School rehabilitation in Samawah city	Samawah	MOE/Local Government	The demolishing and rebuilding of damaged classrooms in the primary and intermediate schools is accelerating the chronic shortage of classroom. No attendant children is increasing and becoming serious social problem. The damage assessment report was delayed by end of March but the data in Muthanna governorate reached. This is the reconstruction project of 5 primary schools in Samawah City.	434 millions Yen through local constructor and 468 millions Yen through Japanese Constructor	5 month	

Serial No.	Sector No.	Field	Name	Site	Implementation Agency	Details	Amount	Duration	Priority
5	EV-22	Education	Equipment rehabilitation of secondary schools	South and North	MOE	The investment in Education was very small in the past two decades so the equipment level was also very low. By the bombing, looting and arson, remained equipment in the school was lost. This is the equipment supply for the intermediate schools in southern and northern area. Equipment includes the equipment for teachers' room, AV and Science equipment.	Basrah Governorate 344 millions yen, Muthanna Governorate 99 millions yen, Maisan Governorate 155 millions yen, Dhi Qar Governorate 304 millions yen, Taamin Governorate 226 millions yen and Ninevah Governorate 389 millions yen, 1,517 million yen in total.	3 month	

### 5.3 Project Profile

#### Project Profile (Project Summary)

<b>Sector</b>	Education and Vocational Training (Human Resources)
<b>Project Name</b>	<b>Equipment Rehabilitation of Zafaraniya Technical Complex</b>
<b>Background (current state, necessity of immediate action &amp; the needs)</b>	<p>Many buildings under Technical Education Foundation were damaged by the conflict and additionally looted after the conflict.</p> <p>At the Zafaraniya complex in Baghdad, six (6) colleges and institutes of Baghdad Technical College, Administrative Technical College, Baghdad Electrical and Electronic Technical College, Baghdad Technicians Training Technical Institute, Baghdad Applied Arts Technical Institute and Baghdad Technical Institute existed before the conflict. Besides these schools, the workshop under the Employment and Vocational Training Center of Ministry of Labor and Social Affairs, vocational school under the Ministry of Education and the workshop of the Ministry of Industry are located. So the Zafaraniya Technical Complex has been the center of technical and vocational education in Iraq.</p> <p>The Baghdad Technical College was also damaged heavily so transferred to the newly constructed building of 6,000m<sup>2</sup> in the area of 20,000m<sup>3</sup> at the Dorah. The Baghdad Technical Institute was also damaged heavily but the rehabilitation of buildings were almost completed. Almost equipment were lost due to the looting after the conflict so the practice and experiment can't be done in the institute. The Zafaraniya complex requested the equipment in the fields of mechanics, electric, civil and nursing of high priority area. In this project, measuring in civil and nursing practice and anatomy in nursing of high emergency area were picked up.</p>
<b>Counterpart and Executing Agencies</b>	Technical Education Foundation, Ministry of Higher Education and Scientific Research
<b>Description of the Assistance</b>	Equipment list (see attachment 1)
<b>Project Site</b>	Zafaraniya Complex in Baghdad
<b>Effectiveness/Benefit (beneficiary)</b>	<ol style="list-style-type: none"> <li>1) Beneficiary Teaching staff and student of Zafaraniya complex</li> <li>2) Indicator of Project Effect Graduation rate, attendance rate and test score</li> </ol>
<b>Presumed Project Period</b>	<p>Production period : 1 month after contract</p> <p>Transportation period: 1 month after shipment</p> <p>Installation period: 1 month after arrival</p>
<b>Presumed Contract Manner (competitive bid, nominated contract)</b>	Competitive bidding
<b>Expected Transit Method</b>	Marine ocean by containers and inland transportation up to Zafaraniya Complex
<b>Necessity of the Installation of Machinery</b>	Item with long production period and with difficult installation were excluded.
<b>Profile of Engineer responsible for the installation (nationality &amp; capability)</b>	Equipment need high technique for installation and new equipment for the complex was not included So required capability for installation is not high.
<b>Operation and Maintenance (O&amp;M) Structure</b>	The maintenance system has been established since the former regime. It is consisted of cleaning after use, dairy maintenance and regular maintenance depending on frequency of use. A trainer in charge of maintenance was allocated in each trade.
<b>Necessity of O&amp;M Training</b>	Technical Education Foundation explained every trainer know how to maintain equipment
<b>Involvement of Other Donors</b>	The rehabilitation of facilities were done by USAID. This project is urgent so CPA adviser claimed that they may request to other donors when the assistance from Japan was delayed. Final decision will be delayed, the project should be revised.
<b>Other Considerations (environment, gender, etc)</b>	The trainings are separated by male and female. The equipment layout considering this situation may be required.

### Location Map



Map No. 5833 Rev. 5 UNITED NATIONS  
December 2002

Department of Public Information  
Cartographic Section

### Rough Estimate of Project Cost

(Unit: 1,000Yen))

Classification		Cost
<b>Equipment Cost</b>		<b>98,450</b>
	1. Procurement cost	86,143
	2. Transport fee	3,797
	3. Installation cost	8,510
<b>Design and Supervision Cost</b>		<b>21,450</b>
<b>Total of Project Cost</b>		<b>119,900</b>

### Equipment List by laboratory

Equipment		No.
<b>Item 4. SURVEY TRAINING LAB.</b>		
4-1	Modern level with tripod	4
4-2	Modern theodolite with tripod 1" reading	4
4-4	Universal theodolite 1" reading with tripod	2
4-6	Citation (total station)	1
4-7	Plane table with tripod telescopic alidade	4
4-9	Planimeter (Digital)	2
4-10	Pantograph	2
4-12	Wild NIK2 Level (Swiss Made)	1
4-13	Jena-Zass Level NIO25	2
4-14	Jena-Zeiss 010A Theodolite	1
4-15	Wild T1 Theodolite	1
4-18	To-Compass Theodolite	1
4-19	Levelling Staff (4-m)	4
4-20	Prismoidal, Compass	2
4-21	Optical Square	6
4-23	Staff-Metal Base	4
4-25	Ranging Rod 2-m	6
4-26	Steel tape 30-m	4
4-27	Steel tape 20-m	4
4-28	Folding Leveling Staff (4-m)	4
4-29	Telescopic Levelling Staff (4-m)	2
<b>Item 5. CARTOGRAPHY LAB.</b>		
5-1	Cartography complete lab.	1
5-2	Digital planimeter	2
5-3	Automatic Level	10
5-4	Electronic Theodolite	12
5-5	Electronic Theodolite	12
5-6	Digital Level	4
5-7	Automatic Level	4
5-9	Total Station	4
5-10	Engineers Theodolite	4
5-11	Theodolite	4
5-12	Gyrotheodolite	1
<b>Item 1. NURSING LAB</b>		
1-1	Sphygmomanometer	4
1-2	Stethoscope	4
1-3	Fetoscope	2
1-4	Sucker System	4
1-6	ECG	2
1-7	D.C. Shouck	2
1-9	Drams	2
1-11	Boiling Syringe	4

1-12	Patient Bed	2
1-13	Fracture Patient Bed	2
1-14	Cardic Stress	2
1-15	O2 Therapy	1
1-16	Mask of O2	10
1-17	Oven	2
1-19	Clinical Examination Table	2
1-20	Baby Incubation	2
1-22	Baby Balance	3
1-23	Person Balance	5
1-25	Thermometer	6
Item 5. ANATOMY LAB.		
5-1	Blood Circulation chart	1
5-2	Chart on the Human Body	1
5-4	Skeleton (Posterior Aspect)	1
5-5	Muscles Anterior and Posterior	1
5-6	The Circulation System	1
5-8	Internal Organs	1
5-9	Ear and Hearing	1
5-10	Organ of Respiration	1
5-11	Digestive Organ	1
5-12	Lymphatic Vessels	1
5-13	Head & Throat	1
5-14	Skin & Tongue Feeling	1
5-15	Reproduction System	1
5-16	Organ of Chest and Abdomen	1
5-17	Endocrine Gland	1
5-18	Kidney & Urinary System	1
5-19	Cellular Tissue	1
5-20	Human Embryology	1
5-21	Spinal Cord	1
5-22	Embryonic Blood Circulation	1
5-23	Artificial Part of Organ	1
5-24	Plastic Human Skeleton	1
5-25	Plastic Skull	1
5-26	Plastic Human	1
5-27	Arm Bone, Leg Bone & Hand Bone .... Etc	1
5-28	Human Trunk	1
5-29	Male & Female Pelvis	1
5-30	Plastic Digestive System	1
5-31	Media Section Through Head	1
5-32	Plastic Human Brain Model	1
5-33	Plastic Eye Model	1
5-34	Plastic Skin Section Model	1
5-35	Dissecting Set	1
5-37	Light Microscope	1
5-38	Slide rheostat	1



### Implementation Schedule

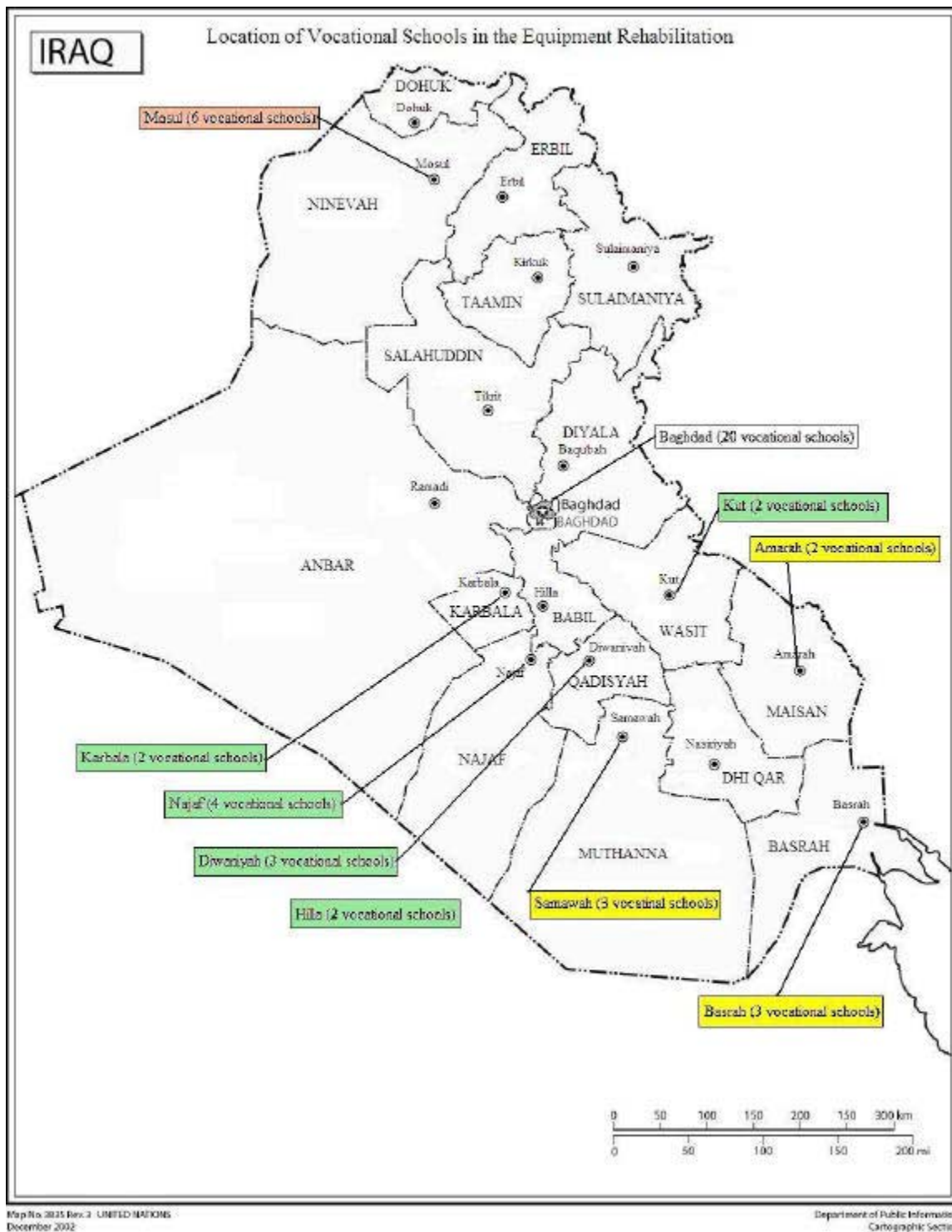
Item	1	2	3	4	5	6	7	8
E/N								
Consultancy Contract								
Preparation of Tender Document								
Approval of Tender Document								
Bid Announcement								
Distribution of Tender Document								
Tender								
Evaluation of Tender								
Procurement Contract								
(Verification by the MOF)								
Meeting with Supplier								
Production & Procurement of Equipment								
Inspection before the shipment								
Inspection by the third party								
Meeting with local agency								
Meeting with local consultant								
Confirmation of Site Preparation								
Transportation by marine								
Transportation by land								
Installation of Equipment								
Inspection of Installation								
Acceptance Inspection & Handing Over								

### Project Profile (Project Summary)

<b>Sector</b>	Education and Vocational Training (Human Resources)
<b>Project Name</b>	<b>Equipment Rehabilitation Project for Vocational Schools</b>
<b>Background (current state, necessity of immediate action &amp; the needs)</b>	<p>From the 1970s, Iraq established a small, but active network of technical and vocational education school offering educational programs in technical, commercial, agricultural, and domestic fields. Home Arts is a relatively new area introduced in the 1997/98 academic year. From these areas, students could pursue specialization from over twenty trades, most of which are in technical/industrial fields. Vocational education underwent a sharp decline from 147,942 students enrolled in 278 schools to only 65750 students enrolled in 263 schools in the approximate ten years between 1989/1990 to 2000/2001. Women made up less than 20% of student enrollment, with significant gender disparities across subject fields. Enrollment continued to decline in the provinces in the south and middle regions, in the north, trends were reversed after the assistance by the Oil for Food program conducted by UNESCO. This phenomenon was particularly affected by sanctions that stymied economic activities, drastically reduced employment opportunities, and limited access to modern teaching equipment, leading to the loss of qualified staff and programs that were not meeting market demands. Vocational schools in the south and middle regions experienced extensive damage during the latest conflict, 80% of which was attributed to looting and arson. The Ministry of Education estimated that over 80% of laboratory equipment was either looted or destroyed.</p> <p>Vocational schools opened from last September, however teaching is limited to lecturing and the practice is not available. If this situation will continue, the students may fail to find job and finally there is rising concern that it may connect to one factor of the social instability. In the meanwhile the enterprises are moving in from Arabian countries and the needs for technicians is increasing gradually. Vocational schools are not able to offer the educational education which comply with the market needs.</p> <p>The Ministry of Education, to break through this situation, reviewed the training program, employed the experienced teachers and allocated the security staff however the equipment rehabilitation, which is a important key for that, is not on the way. MOE anticipates the assistance from Japanese government.</p>
<b>Counterpart and Executing Agencies</b>	Directorate of Vocational Education, Ministry of Education
<b>Description of the Assistance</b>	Equipment List (see attachment 1)
<b>Project Site</b>	<p>i) South : 3 schools in Samawah city, 2 schools in Amarah city and 4 schools in Basrah city, total 9 schools.</p> <p>ii) Baghdad:20 schools</p> <p>iii) Middle : 2 schools in Hilla city, 2 schools in Karbala city, 3 schools in Diwaniyah city, 2 schools in Kut city and 4 schools in Najaf city, total 13 schools</p> <p>iv) North : 6 schools in Mosul city</p>
<b>Effectiveness/Benefit (beneficiary)</b>	<p>1) Beneficiary</p> <p>i) South : Direct Beneficiary : 6,000 students and teachers, Indirect Beneficiary : 3.4 million people in Muthanna, Maisan and Basrah governorates.</p> <p>ii) Baghdad : Direct Beneficiary : 8,500 students and teachers, Indirect Beneficiary : 6.6 million people in Baghdad.</p> <p>iii) Middle : Direct Beneficiary : 6,000 students and teachers, Indirect Beneficiary : 5.5 million people in Babil, Karbala, Quadisiyah, Wasit and Najaf governorates.</p> <p>iv) North : Direct Beneficiary : 2,600 students and teachers, Indirect Beneficiary : 2.5 million people in Ninevah governorate</p>

	2) Indicator of Project Effect Improvement of educational quality(increase of practice hours and up grade of intelligibility) and Job prospects(employment rate and employers)
<b>Presumed Project Period</b>	Production period : 3 month after contract Installation period : 1 month after opening package
<b>Presumed Contract Manner (competitive bid, nominated contract)</b>	Competitive bidding
<b>Expected Transit Method</b>	Marine ocean by containers and inland transportation up to designated warehouse in each city. Distribution from the warehouse to each school.
<b>Necessity of the Installation of Machinery</b>	MOE explained each school can install himself equipment as teachers have the experience of operation of all most equipment.
<b>Profile of Engineer responsible for the installation (nationality &amp; capability )</b>	Required qualification for teachers in vocational schools are post-technical college or technical institute so the technical level will be high. When supplier will conduct the installation, Iraqi staff should be trained in Amman.
<b>Operation and Maintenance (O&amp;M) Structure</b>	The maintenance system has been established since the former regime. It is consisted of cleaning after use, dairy maintenance and regular maintenance depending on frequency of use. A teacher in charge of maintenance was allocated in each trade. 80% to 90% of budget is manpower cost so the maintenance cost will be covered by income of the activity in the private sector.
<b>Necessity of O&amp;M Training</b>	MOE explained every teacher know how to maintain equipment however O & M training on some specific items will be needed
<b>Contents of Training</b>	Up grade of operation skill and training for O&M
<b>Involvement of Other Donors</b>	The rehabilitation of facilities are done by USAID at the level of emergency repairing.
<b>Other Considerations (environment, gender, etc )</b>	The schools or classrooms are separated by male and female. The equipment layout considering this situation may be required.

### Location Map



### Rough Estimate of Project Cost

(Unit: 1,000Yen))

Classification		Cost			
Region		Baghdad 20 schools	South area 9 schools	Central area 14 schools	North area 6 schools
Equipment Cost		1,040,565	632,979	1,033,564	589,768
	1.Procurement cost	956,305	586,479	943,423	530,298
	2.Transport fee	66,872	31,935	74,346	48,700
	3.Installation cost	17,388	14,565	15,795	10,770
Design and Supervision		29,783	29,839	29,783	29,839
Total of Project Cost		1,070,348	662,818	1,063,347	619,607

### Equipment List

No.		Equipment	Q'ty
Electric			
EL-	1	Experimental Training System	1
EL-	2	Demonstration of a Complete Generation System	1
EL-	3	AC/DC Power Supply	3
EL-	4	Three-phase Extra-low Voltage Transformer	3
EL-	5	Variable Low Voltage Transformer	3
EL-	6	AV Meter	20
EL-	7	Digital Multimeter	25
EL-	8	Wattmeter	20
EL-	9	Alternating Current Meter	3
EL-	10	Rheostats	5
EL-	11	Demonstration Bridge	5
EL-	12	Components for Practical Exercise	5
EL-	13	Tools	30
EL-	14	Tool kit	250
Electronic			
ER-	1	Experimental TV Trainers	1
ER-	2	Experimental Radio Trainers	1
ER-	3	AC/DC Power Supply	10
ER-	4	Function Generator	5
ER-	5	Digital Multimeter	15
ER-	6	Digital Multimeter	1
ER-	7	Oscilloscope	5
ER-	8	Components for Practical Exercise	10
ER-	9	Tools	30
ER-	10	Tool kit	250
Computer Maintenance			
CP-	1	Personal computer	5
CP-	2	Color Scanner, A3	3
CP-	3	Laser Printer, A3	3
CP-	4	Inkjet Printer, A4	3
CP-	5	Computer Projector	1
CP-	6	AC/DC Power Supply	10
CP-	7	Function Generator	5
CP-	8	Digital multimeter	5
CP-	9	Digital Multimeter	1
CP-	10	Oscilloscope	5

CP-	11	Components for Practical Exercise	5
CP-	12	Tools	30
CP-	13	Tool kit	250
Communication			
CM-	1	Electronic Training Exchange	1
CM-	2	Transmitting and Receiving Signal and Equipment	1
CM-	3	Training Telephone (both type)	1
CM-	4	Power Supply full stabilized and protection	5
CM-	5	Function Generator	5
CM-	6	Digital Multimeter, desktop	15
CM-	7	Digital Multimeter, hand-held	30
CM-	8	Oscilloscope	5
CM-	9	Electronic Component Experimental training Kit	5
CM-	10	Tool kit	250
Chemical			
CH-	1	Analytical Balance	2
CH-	2	Steam Generator	1
CH-	3	Digital Microscope	1
CH-	4	OHP	1
CH-	5	Refrigerator with Freezer	2
CH-	6	Aspirator	10
CH-	7	Viscometer Bath	1
CH-	8	Pensky-Martens Flash Point Tester	1
CH-	9	Bomb Calorimeter	1
CH-	10	Water Determination Apparatus	1
CH-	11	Portable Calorimeter	1
CH-	12	Distillation Tester	1
CH-	13	UV-VIS Spectrophotometer	1
CH-	14	Digital pH-Meter	2
CH-	15	Water & Oil Bath	5
CH-	16	Beckmann's Molecular Weight Apparatus	2
CH-	17	Hand-held Refractometer	1
CH-	18	Electrostatic Experimental Apparatus	1
CH-	19	Water Purifier	1
CH-	20	Oven	1
CH-	21	Stand Mixer	1
CH-	22	Centrifuge	1
CH-	23	Sieve Shaker	1
CH-	24	Jaw Crusher	1
CH-	25	Cross Beater Mill	1
CH-	26	Glass Wares Kit	1
CH-	27	Diaphragm Vacuum Pump	1
CH-	28	Flowmeter	1
CH-	29	Muffle Furnace	1
CH-	30	Assmann Psychrometer	5
CH-	31	Joule's Calorimeter	5
CH-	32	Electrothermal Melting Point Apparatus	1
CH-	33	Thermal & Linear Expansion Apparatus	3
CH-	34	Mercury Thermometer (-10 to +110 °C, 1/1)	10
CH-	35	Mercury Thermometer (-10 to +250 °C, 1/1)	10
CH-	36	Alcohol Thermometer (-50 to 30 °C)	5
CH-	37	Clinical Thermometers (+35 to 42 °C)	5
CH-	38	Hygrothermometer	1
CH-	39	Peltier thermostat	1
CH-	40	Crucible Furnace	1
CH-	41	Relative Density Hydrometers (19pcs/set)	1
CH-	42	Moisture Balance	1
CH-	43	Du-Nouy's Tensionmeter	1

CH-	44	Balance Table	2
CH-	45	Glass Wares	1
Food Industry			
FI-	1	Steam Generator	2
FI-	2	Analytical Balance	1
FI-	3	Triple Beam Balance with Weight Set	3
FI-	4	Magnetic Stirrer	1
FI-	5	Magnetic Stirrer with hot plate	1
FI-	6	Vacuum and Pressure Pump	1
FI-	7	Muffle Furnace	1
FI-	8	Oven	1
FI-	9	Incubator	1
FI-	10	Laboratory Centrifuge	1
FI-	11	Water Bath	2
FI-	12	Refrigerator with Freezer	1
FI-	13	Hydrometer	30
FI-	14	Falling Ball Viscometer	1
FI-	15	Biological Microscope	6
FI-	16	Digital pH-meter	1
FI-	17	Flame Photometer	1
FI-	18	Polarimeter	1
FI-	19	Automatic Water Distillation Apparatus	1
FI-	20	Gerber Centrifuge	1
FI-	21-1	Cream Separator	1
FI-	21-2	Autoclave	1
FI-	21-3	Seaming Machine, manual operation	1
FI-	21-4	Cheese Vat	1
FI-	21-5	Chest Freezer	1
FI-	21-6	Homogenizer	1
FI-	21-7	Centrifuge	1
FI-	22	Glass Wares	1
Commercial			
CO-	1	Personal Computer, with UPS/AVR	30
CO-	2	Color Scanner, A3	1
CO-	3	Laser Printer, A3	5
CO-	4	Server	1
CO-	5	Computer Projector	1
CO-	6	LAN System with Materials	1
Sewing			
SW-	1	Automatic Home Sewing Machine	10
SW-	2	Industrial Sewing Machine	30
SW-	3	Electrical Scissors	2
SW-	4	Steam Electrical Iron, with table and	2
SW-	5	Hand-operated Puch Card Knitter	2
SW-	6	Home Embroidery Machine	2
SW-	7	Embroidery and Sewing Machine	2
SW-	8	Human Troso Body, lady's	2
SW-	9	Human Torso Body, men's	2
SW-	10	Human Torso Body, chile	2
SW-	11	Apparel Design Table	10
SW-	12	Table	8
SW-	13	Tool kit	250
Carpentry			
CR-	1	Bench Holdfast	10
CR-	2	Bench Hook	10
CR-	3	Miter Block	10
CR-	4	Bow Saw	8
CR-	5	Woodwork Bench, dual position	15

CR-	6	Hand Saw, silver seal	10
CR-	7	Hand Saw, Tornado	1
CR-	8	Tenon Saw	10
CR-	9	Dovetail Saw	10
CR-	10	Gents Backsaw	10
CR-	11	Compass Saw	10
CR-	12	Wood Chisels	10
CR-	13	Chisels, Bevel Edge	10
CR-	14	Chisels, Firmer	10
CR-	15	Chisels, Mortise	10
CR-	16	Gauges, Firmer-out Cannel	10
CR-	17	Carpenters Ratchet Brace	10
CR-	18	Auger Bit	5
CR-	19	Expansive Bit, firmgrip	5
CR-	20	Woodbit	5
CR-	21	Countersink set	5
CR-	22	Carpenter's Brace Rosehead Countersink Bit	5
CR-	23	Double-ended Screwdriver Bit	5
CR-	24	Trysquare	5
CR-	25	Mitre Square	5
CR-	26	Sliding Bevel	5
CR-	27	Marking Gauge	5
CR-	28	Mortise Gauge	5
CR-	29	Carpenters Folding Rule	5
CR-	30	Hammers	10
CR-	31	Sawtooth Setter	10
CR-	32	Saw Sharpener	5
CR-	33	Bench Planes	10
CR-	34	Spare for bench planes	5
CR-	35	Plough Plane	10
CR-	36	Bullnose Rebate Plane	10
CR-	37	Spokeshaves	10
CR-	38	Marking Knife	10
CR-	39	Bradawl	10
CR-	40	Cabinet Scraper	10
CR-	41	Oil Stone	10
CR-	42	Sash Cramps	15
CR-	43	Gimlet	5
CR-	44	Woodturning Lathe	1
CR-	45	Table saw tilt type	1
CR-	46	Universal Radial Cross Cut Saw	1
CR-	47	Vertical Band Saw	1
CR-	48	Band Saw	1
CR-	49	Surface Planer and Thicknesser	1
CR-	50	Chisel, mortise	1
CR-	51	Bench Grinder	1
CR-	52	Combined Disc and Belt Sander	2
CR-	53	Spindle Moulder	1
CR-	54	Surface Planer	1
CR-	55	Sliding Table Panel Saw	1
CR-	56	Universal Woodworker	1
CR-	57	Tool kit	250
Automobile			
AU-	1	Visual Aids, software section	0
AU-	2	Demonstration Engine Model, set	1
AU-	3	Automotive Engineering Models and Parts, wide range of models	1
AU-	4	Automobile Electrical Systems Simulator	1
AU-	5	Ignition Electrical Systems Simulator	1



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AU-	6	Engine Starting and Running Problems Simulator	1
AU-	7	Hydraulic System Simulator	1
AU-	8	Automotive Air Conditioner Simulator	1
AU-	9	General Metric Mechanics Tool Kit	5
AU-	10	Maintenance Tool Kit, metric	5
AU-	11	Universal Service Set, metric	1
AU-	21	Coil Spring Compressors	4
AU-	13	Universal Stud Extractor	4
AU-	14	Valve Spring Compressor	7
AU-	15	Swivel-handled Plug Spanners, double ended	1
AU-	16	Valve Spring Compressor, overhead type	6
AU-	17	Valve Reseating Set	5
AU-	18	Precision Valve Refacer	1
AU-	19	Valve Seat Grinding Kit	1
AU-	20	Connecting Rod Aligner	1
AU-	21	Coil Spring Compressors	4
AU-	22	Piston Ring Compressors	1
AU-	23	Front Coil Spring Compressors	2
AU-	24	Portable Oil Dispenser	2
AU-	25	Oil Drain Trolley	2
AU-	26	Hydraulic Puller	4
AU-	27	Universal Hub Puller	2
AU-	28	Gear Puller Sets	10
AU-	29	Bearing puller	2
AU-	30	Bearing Separators small	2
AU-	31	Ball Joint Separator	2
AU-	32	Extractor Set, internal and external	2
AU-	33	Slide Hammer, Puller Set	2
AU-	34	Air Compressor, two stage, twin cylinder	1
AU-	35	Hand Held Drill	3
AU-	36	Pneumatic Impact Wrench	4
AU-	37	Sockets for impact wrench, set	4
AU-	38	Pneumatic Orbital Sander	3
AU-	39	Polisher	3
AU-	40	Spark-plug Tester and Cleaner	2
AU-	41	Bottle Jack, 2 tones	4
AU-	42	Bottle Jack, 5 tones	4
AU-	43	Troll Jack, 3 tones long reach	4
AU-	44	Troll Jack, 5 tones long reach	2
AU-	45	Transmission Jack, 800 kg	2
AU-	46	Miniature Hoist, 500kg	2
AU-	47	Chain Hoist, 1000 kg	2
AU-	48	Hydraulic Floor Crane, 1 tone	1
AU-	49	Hydraulic Press, 35 tones	1
AU-	50	Hydraulic Press, 60 tones	1
AU-	51	Two Post Lift, 3000 kg	1
AU-	52	Four Post Lift, 3 tones, universal	1
AU-	53	On-car Wheel Balancer	1
AU-	54	Off-car Wheel Balancer	1
AU-	55	Tyre Changer	1
AU-	56	Polishing Machine	1
AU-	57	Bore Gauge	2
AU-	58	Battery Charger and Engine Starter	1
AU-	59	Battery Tester	2
AU-	60	Multimeter, electronic	2
AU-	61	Timing Light	3
AU-	62	Carburetor Balancer	2
AU-	63	Vacuum/Fuel Pump Pressure Gauge	2

AU-	64	Compression Tester	2
AU-	65	Cylinder Leakage Tester	1
AU-	66	Electrical Tester	1
AU-	67	Engine Analyser	1
AU-	68	Diesel Timing Tester	2
AU-	69	Fuel Injection Pressure Tester	2
AU-	70	Injection Test Kit	1
AU-	71	Optical Digital Tachometer	1
AU-	72	Smoke Density Tester	1
AU-	73	Compression tester	1
AU-	74	Clamp	1
AU-	75	Probe Light	1
AU-	76	Working Bench	3
AU-	77	Tool kit	250
Catering			
CT-	1	Compact Electric Cooker	2
CT-	2	Hot Plate Cooker	2
CT-	3	Stockpot Stove, gas	2
CT-	4	Gas Cooker	2
CT-	5	Two Ring Boiling Table	2
CT-	6	Table Top Cooker	2
CT-	7	Cooking Thermometer	2
CT-	8	Oven Thermometer	2
CT-	9	Roasting Thermometer	2
CT-	10	Oven Gloves, pair	2
CT-	11	Refrigerators, electric	2
CT-	12	Freezer, 108 liters	2
CT-	13	Freezer Thermometer	2
CT-	14	Blender	2
CT-	15	Chef Mixer	2
CT-	16	Boilers	2
CT-	17	Stainless Steel Sink Unit	5
CT-	18	Cooking Table	5
CT-	19	Trolley	5
CT-	20	Electric Kettle	5
CT-	21	Pressure Cooker	5
CT-	22	Boiling Pots	5
CT-	23	Stew Pan	5
CT-	24	Milk Pan	5
CT-	25	Frying Pan	5
CT-	26	Omelet Pan	3
CT-	27	Egg Poacher	3
CT-	28	Colander	3
CT-	29	Scoop	5
CT-	30	Funnel	5
CT-	31	Knives	31
CT-	32	Hardwood Chopping Board	10
CT-	33	Cutting Board	10
CT-	34	Can Opener	5
CT-	35	Mincing Machine	4
CT-	36	Grater	4
CT-	37	Potato Peeler	4
CT-	38	Skewers	5
CT-	39	Cooking Scale	5
CT-	40	Rolling Pin	5
CT-	41	Pastry Board	5
CT-	42	Measuring Jug, glass	5
CT-	43	Baking Sheets	10

CT-	44	Brushes, set	5
CT-	45	Cleaning Materials, set	1
CT-	46	Safety Equipment	5
Building			
BD-	1	Trowel, brick	5
BD-	2	Trowel, pointing	5
BD-	3	Brick Jointer	10
BD-	4	Trowel, finishing	5
BD-	5	Float, straight grained	10
BD-	6	Float, lightweight plastic	10
BD-	7	Hawk, aluminum	10
BD-	8	Trowel, internal corner	10
BD-	9	Trowel, external corner	10
BD-	10	Brick Bolster	10
BD-	11	Chisel, plugging	10
BD-	12	Lamp Hammer	10
BD-	13	Hammer, brick	10
BD-	14	Hammer, one-slot scutch	10
BD-	15	Hammer, scutch	10
BD-	16	Pick, mortar	10
BD-	17	Bricklayer's Line Pins	10
BD-	18	Bricklayer's Line Pins	5
BD-	19	Builders Plumb Level	10
BD-	20	Steel Square	10
BD-	21	Plumb Bob and Line	10
BD-	22	Putty Knife	10
BD-	23	Stripping Knife, 75mm wide	10
BD-	24	Filling Knife, 65mm wide	10
BD-	25	Shave Hooks	10
BD-	26	Square Mouth Shovel	10
BD-	27	Round Mouth Shovel	10
BD-	28	Pick	10
BD-	29	Cement Mixer, petrol	2
BD-	30	Cement Mixer, electric	2
BD-	31	Masonry Saw	2
BD-	32	Drilling Hammer	2
BD-	33	Simple Construction Level	3
BD-	34	Automatic Construction Level	10
BD-	35	Tripod	13
BD-	36	Brookeades Leveling Staff	10
BD-	37	Plane Table	4
BD-	38	Tripod for plane table	3
BD-	39	Clinometer	19
BD-	40	Wire Rope	10
BD-	41	Tape Measure	10
BD-	42	Ranging Poles	10
BD-	43	Concrete Vibrator	3
BD-	44	Manual Drill	5
BD-	45	Tool kit	250
Air Conditioning			
AC-	1	Visual and CD movies Aids	0
AC-	2	Refrigeration and Air Conditioning Trainer	1
AC-	3	Vacuum Pump	3
AC-	4	Charging Cylinder, Gauge, Manifold	3
AC-	5	Welding Torch Set	3
AC-	6	Tool	3
AC-	7	Tool kit	250
Welding			

WD-	1	Arc Welder	5
WD-	2	Safety and Protective Equipment	10
WD-	3	Gas Welding and Cutting Equipment	5
WD-	4	Multi-purpose Welding Bench	5
WD-	6	Gas Welding Bench	5
WD-	7	Welding and Cutting Outfit	5
WD-	8	Pipe and Beveling	2
WD-	9	Auto Pipe Cutting Machine	2
WD-	10	Spot Welders	2
WD-	11	Pedal Operated Spot Welding Machine	1
WD-	12	Blacksmiths Equipment	1
WD-	13	Foundry Equipment	2
WD-	14	Gas Fired Ceramic Chip Forge	2
WD-	15	Blowtorch, Dual Thimble Wheel Control	2
WD-	16	Natural Draught Tilt Furnace	1
WD-	17	CrucibleFurnace	1
WD-	18	Sand Tray	4
WD-	19	Metal Casting Kit	2
WD-	20	Fume Extraction Unit	2
WD-	21	Molding Bench	2
WD-	23	Tool kit	250
Automobile(2)			
AU2-	1	Cylinder Boring Machine	1
AU2-	2	Horing Machine	1
AU2-	3	Electrical Test Bench	1
AU2-	4	Diesel Fuel Pump Test Stand	1
Workshop			
WS-	1	CNC Lathe	1
WS-	2	CNC Machining Center	1
WS-	3	Center Lathe	1
WS-	4	Universal Milling Machine	1
WS-	5	Shaping Machine	1
WS-	6	Surface Grinding Machine	1
WS-	7	Cylindrical Grinder, medium size	1
WS-	8	Tool and Cutter Grinder	1
WS-	9	Drilling Machine	2
WS-	10	Double Ended Grinding Machine	2
WS-	11	Power Hacksaw	1
WS-	12	Cutting Off Machine	2
WS-	13	Hand Lever Shears	2
WS-	14	Drill Sets	2
WS-	15	Hand Hammer	10
WS-	16	Combination Plier	10
WS-	17	Bench Vice	10
WS-	18	Metric Die Set	2
WS-	19	Metallic Ruler (150, 300mm)	10
WS-	20	Metallic Tape, 3m	5
WS-	21	Vernier Calliper	10
WS-	22	Micrometer	10
WS-	23	Digital Micrometer	10
WS-	24	Protractor	10
WS-	25	Universal Bevel Protector	10
WS-	26	Feeler Gauges	10
WS-	27	Screw Pitch Gauges	10
WS-	28	Angle Finaler level	10
WS-	29	Files Set	15
WS-	30	Die Maker Steel Square Set	2
WS-	31	Taps and Dies Set	2

WS-	32	Screw Extractors Set	2
WS-	33	Hacksaws	15
WS-	34	Punches, set	10
WS-	35	Punch & Chisel Set	2
WS-	36	G-clamps	15
WS-	37	500cc Oil Suction Gun	15
WS-	38	Hand Hammer Drill	2
WS-	39	Angle Grinder	2
WS-	40	Tool kit	10

### Implementation Schedule

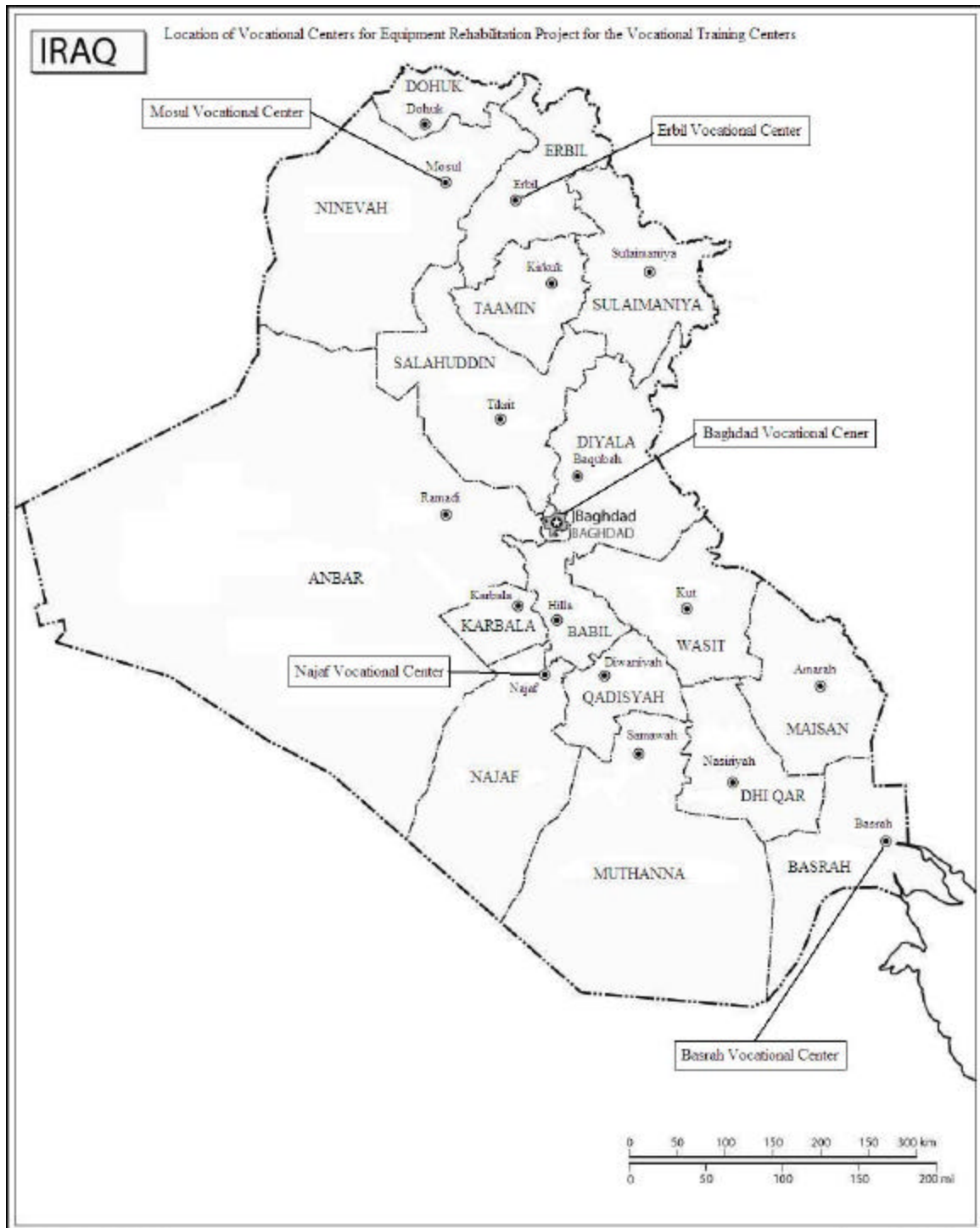
Item	1	2	3	4	5	6	7	8	9	10	11	12
E/N												
Consultancy Contract												
Detailed Design												
Preparation of Tender Document												
Approval of Tender Document												
Bid Announcement												
Distribution of Tender Document												
Tender												
Evaluation of Tender												
Procurement Contract												
(Verification by the MOF)												
Approval of Equipment Drawing												
Meeting with Supplier												
Production of Equipment												
Inspection before the shipment												
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Meeting with local agency												
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Confirmation of Site Preparation												
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Transportation by land												
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Installation of Equipment												
Inspection of Installation												
Acceptance Inspection & Handing Over												

### Project Profile (Project Summary)

<b>Sector</b>	Education and Vocational Training (Human Resources)
<b>Project Name</b>	<b>Equipment Rehabilitation in the vocational training center in Iraq</b>
<b>Background (current state, necessity of immediate action &amp; the needs)</b>	<p>The Ministry of Labor and Social Affairs (MLSA) has taken charge of the vocational training for the physically and spiritually handicapped youth. General vocational training for people on the other hand is furnished by 6 Vocational Training Centers (VTC) throughout the country through the 6-months to 9-months short courses. EVTC was established in 1972 and has been operating 12 Employment Centers and 8 Vocational Centers in the country. The vocational training center has been furnishing the training of 8 fields of electric plumbing, motor winding, air-conditioner, home appliance, carpentry, welding, automobile electrical and automobile mechanical.</p> <p>The Ministry of Labor and Social Affairs projected to reconstruct the existing 12 employment centers and 6 training centers in Baghdad, Basrah, Mosul, Najaf, Kirkuk and Erbil and establish 16 new employment centers and 12 vocational centers at the capital of each Governorate under the permission of CPA. The existing training centers have had no budgetary support since the year 1990 by the former authority and the facilities and equipment have never been updated. Furthermore they were devastated after looting of this time. To date 8 vocational centers were already rehabilitated or constructed through the assistance of United States. The current vocational training is conducted in the field of computers and English at Baghdad Vocational Training Center.</p> <p>The Employment Center has just started the registration of the estimated one million unemployed people and 300,000 demobilized soldiers and is planning the vocational training for them. However no training is available in the existing centers without equipment. Moreover 6 facilities and 600 to 800 staff of the Ministry of Industry are to be absorbed to the Employment and Vocational Center. The training of these staff is also urgent. In Baghdad, three workshops exist.</p> <p>USAID has been rehabilitating the existing five training centers since last year and will construct eleven (11) new training centers in Sulaimaniya, Tikrit, Diyala, Hilla, Kerbara, Diwaniyah, Kut, Amarah, Samawah, Nassiriya and Ramadi amounted to 20 million dollars in 2004.</p> <p>KOICA (Korean International Cooperation Agency) announced to construct a Iraq-Korea vocational training center in the scale of 7,000M2 for the fields of computer, home appliance repair, automobile mechanical, welding and carpentry.</p> <p>Kirkuk vocational training center will be rehabilitated by RTI (Research Triangle Institute) and the necessary equipment and technical cooperation will be provided through the assistance of US\$0.5 million by VOCA (ACD/VOCA: Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance) and US\$150,000 by RTI. The requested trades are Automobile electrical, Engineering drawing, Carpentry, Automobile mechanical, Welding, Motor winding, Home appliance, Electrical, Sewing, Computer and secretarial, Trainer training, Air-conditioner, Communication and Electronics. Out of 14, important 8 fields are targeted on this project. The rehabilitation of vocational training center is urgent so Employment and Vocational Center is expecting the procurement of equipment within this year. In this project, the long production items are excluded and the quantity is decreased by minimum quantity. Finally the equipment can be delivered within 4 month after the bidding.</p>
<b>Counterpart and Executing Agencies</b>	Employment and Vocational Training Center, Ministry of Labor and Social Affairs
<b>Description of the Assistance</b>	Equipment list (see attachment 1)
<b>Project Site</b>	18 primary schools in Muthanna Governorate

<b>Effectiveness/Benefit (beneficiary)</b>	1) Beneficiary One million enemployed including 300,000 demobilized soldiers. 2) Indicator of Project Effect Annual trained number, employment rate and beginning salary
<b>Presumed Project Period</b>	Production period : 1 month after contract Transportation period:1 month after shipment Installation period: 1 month after arrival
<b>Presumed Contract Manner (competitive bid, nominated contract)</b>	Competitive bidding
<b>Expected Transit Method</b>	Marine ocean by containers and inland transportation up to each vocational training center.
<b>Necessity of the Installation of Machinery</b>	Item with long production period and with difficult installation were excluded.
<b>Profile of Engineer responsible for the installation (nationality &amp; capability)</b>	Equipment need high technique for installation and new equipment for the center was not included. So required capability for installation is not high.
<b>Operation and Maintenance (O&amp;M) Structure</b>	The maintenance system has been established since the former regime. It is consisted of cleaning after use, dairy maintenance and regular maintenance depending on frequency of use. A trainer in charge of maintenance was allocated in each trade.
<b>Necessity of O&amp;M Training</b>	Vocational center explained every trainer know how to maintain equipment
<b>Contents of Training</b>	Up grade of operation skill and training for O&M
<b>Involvement of Other Donors</b>	The rehabilitation of facilities were done by USAID. This project is urgent so CPA adviser claimed that they may request to other donors when the assistance from Japan was delayed. Final decision will be delayed, the project should be revised.
<b>Other Considerations (environment, gender, etc )</b>	The trainings are separated by male and female. The equipment layout considering this situation may be required.

### Location Map



Map No. 5815 Rev. 3 UNITED NATIONS  
December 2002

Department of Public Information  
Cartographic Section



### Rough Estimate of Project Cost

(Unit: 1,000Yen)

Classification		Cost				
City		Baghdad	Basrah	Mosul	Najaf	Erbil
Equipment Cost		236,137	224,373	242,976	228,515	242,976
	1.Procurement cost	180,487	180,566	180,649	180,668	180,648
	2.Transport fee	43,805	31,923	50,416	35,957	50,417
	3.Installation cost	11,845	11,884	11,911	11,890	11,911
Design and Supervision		31,895	31,895	31,895	31,895	31,895
Total of Project Cost		268,032	256,268	274,871	260,410	274,871

### Equipment List

No.		Q'ty
	Automobile Electrical Workshop	
1	Battery Charger	5
2	Multi Scope Analyzer	1
3	Generator Starter Test Bench	-
4	Battery Coolant Checker	31
5	Volt Ampere Meter	31
6	Digital Multimeter	31
7	Ignition Electrical Systems Simulator Set	3
8	Head Light Tester	1
9	Electric Soldering Iron	31
10	Analog Multi-Circuit Tester	31
11	Digital Multimeter	31
12	Liquid Batteries	2
13	Tool Set	31
16	Fuel Pressure measurement in the system	1
14	White Board	2
15	OHP	1
	Engineer Drawing Workshop	0
1	Engineering Drawing Board	31
2	Engineering Tools Set	31
3	Mechanical Pencil	31
4	OHP	2
5	Traiangles 30 & 40	31
6	T-square Ruler	31
7	Computer	1
8	French Curves Set	31
	Carpentry Workshop	
1	Circular Saw	5
2	Band Saw	5
3	Smoothing Roller	5
5	Wood Lathe	-
6	Screwdriver Set	31
7	Universal Wood Worker	-
8	Tilted Saw Bench	-
9	Chip Saw Grinder	5
10	Compressor	5
13	Scroll Saw	5
14	Electric Planer	5
15	Screwdriver	31
16	Blower	5
17	Spray Gun	5

18	OHP	1
19	Tool Kit	31
20	White Board	2
	Automobile Mechanical Workshop	
1	Vehicle System Analysis	0
3	Engine Oil Pressure Gauge	5
4	Fuel Pressure Gauge	5
5	Radiator Cap Tester	5
6	Dwell Tacho Tester	5
7	Carbrator Balancer	5
9	Engine Analyzer	5
10	Fuel Injection Pump Test Bench	-
11	Nozzle Tester	5
13	Computerized Wheel Balancer	-
16	Brake Master Tester	-
18	Hand-poperated Lubricator	5
19	Brake-speed Combination Tester	-
22	Wheel Alignment System & Lift	-
24	Demonstration Engine Model Set & Automotive Engineering Models and Parts	-
25	Brake Tester	-
26	Air Compressor	5
27	Auto Parts Washer	-
28	Angle Grinder	5
29	Electrical Screwdriver	31
30	Center Lathe	-
31	Arc Welder	5
32	Gas Welder Set	5
33	Brake Drum Gauge	5
34	Twin Pole Ligt	-
35	Folding Crane	5
36	High Pressure Hot Water Washing Machine	-
37	Gear Oil Despenser	5
38	Mechanic Desk Set	30
39	Mechanic Set	31
40	Mechanic Set	-
41	Thickness Gauges	31
42	Electric Chain Hoist	5
45	Engine cylinders pressure check equipment "crane jack"	1
46	Smoke D	1
47	Press check equipment "30 Tons"	1
48	Spark plugs checking & cleaning equipments	1
43	OHP	1
44	White Board	2
	Welding Workshop	
1	Arc Welder	5
2	Mobile Welder/Generator	5
4	Arc Welder	-
5	Spot Welder	5
6	TIG Welder	-
7	Screw Driver	31
8	Screw Driver	31
9	Screw Driver	31
10	Circular Sawing Machine	-
11	Cutting Machine (large)	5
12	Cutting Machine (small)	5
13	Hack Saw	2
14	Band Saw (small)	2
15	Hydraulic Press	2

16	Aviation Snip	31
17	Bending Machine	-
18	Arc Activated Headshield	31
19	Headshield Replacement Lenses	5
20	Welding Hammers	31
21	Wire Brush	31
23	Welding Glasses	31
24	Hi-Fine Pen	31
25	Sleeve Cutter	31
26	Metal File Set	100
29	Tool Set	31
34	Oxygen-Estellite welding set "15"	1
30	OHP	1
31	White Board	2
32	Welding Gloves	100
33	Leather Apron	50
	Winding of Motors Workshop	
1	Hand Winder	10
2	Bench Growler	10
3	Analog Clampmeter	31
4	Digital Multimeter	31
5	Dwell Tacho Tester	31
6	Frequency Counter	31
7	Cmap-on Power Meter	31
8	Squirrel Cage 3-Phase Asynchronous Motor (cut-away)	31
9	Split-Phase Motor (cut-away)	1
10	Direct Current Motor Compound Excitation (cut-away)	1
11	Electric Soldering Iron	31
12	Electric Soldering Iron	-
13	Drying Oven	-
17	Hydraulic Press	1
18	Blower	5
19	Tool Set	31
20	OHP	1
21	White Board	2
	Municipal Appliances Workshop	
1	Washing machine (2 pools)	5
2	Washing machine (1 pool) children	-
3	Small size laundry	-
4	Electrical sweeper	5
5	Electrical grinner squeeze	-
6	Electrical mill	-
7	Electrical meat grinder	5
8	Electrical shaving machine	5
9	Hair drier	5
11	Electrical mixer	5
12	Sewing machine engine with accelerator	5
13	Steam iron	5
14	Normal iron	-
15	Oil heater	5
16	3 candles electrical heater	5
17	Water heating device	5
18	Frequency Counter	5
19	Cmap-on Power Meter	5
20	Tachometer	5
21	Digital Multimeter	31
22	Analog Clampmeter	31
23	Computer	-

24	Laser Printer	-
25	OHP	1
26	White Board	2
27	Tool Set	31
	Electrical Workshop	
1	Digital Multimeter	31
3	Voltmeter (DC & AC)	31
4	Multi Range Ohmmeter	31
5	Ammeter (DC & AC)	31
6	Triple Range Galvanometer	31
7	Wattmeter	31
8	Analog Clampmeter	31
9	Power Factor Meter	31
10	Insulation Resistance Tester	31
11	Electrical Screwdriver	-
13	3-in-1 Pipe Bender	31
14	Blower	31
15	Electric Soldering Iron	31
16	Tacho HiTester	31
17	OHP	1
18	White Board	2
19	Tool Set	31
	Sewing Workshop	
1	Industrial sewing machine	30
2	Domestic sewing machine	30
3	Overlock sewing machine	3
4	Button hole sewing machine	3
5	Button fixing sewing machine	3
6	Electrical scissors	5
7	Electrical iron or steam iron	5
9	Manual scissors	30
10	Embroidery machine	15
11	Designers desk	5
12	OHP	1
13	White Board	2
	A/C Workshop	
1	Digital Thermometer	-
2	Anemometer	-
3	Fluorocarbon Leak Tester	-
4	Split Air-condition	2
5	Digital Mutlimeter	31
6	Analog Clampmeter	31
7	Micrometer	31
8	Vernier Caliper	31
9	Charging System Kit	5
10	Ammeter (DC & AC)	31
11	Voltmeter (DC & AC)	31
12	Clmap-on Power Meter	31
14	Welding & Melting Machine	5
15	Tools	5
16	Air-conditioner 2 ton window type	2
17	Refrigerator	2
18	Freezer	2
19	Hand Drill	31
20	1/4 Angle Head Die Grinder Kit	31
21	S. unit air-conditioner 2 ton	2
22	Electric Soldering Iron	31
23	Blower	31

24	Tool Set	31
26	Laboratory Air-conditioning & cooling equipment	1
25	Heavy Duty Mini Die Grinder	2
	Communication Workshop	
1	Desk telephone	30
2	Desk telephone wireless	15
3	Analog Communications System	5
4	Completer Engineers Tools Set	31
5	Frequency Test Device	31
6	Satellite + receiver + dish + positional + Tv	2
	Electronic Workshop	
1	Experimental TV Trainer	5
2	Color TV 25"	2
3	Color TV 20"	-
4	Color TV14"	-
5	Oscilloscope	5
6	Function Generator	5
7	Power Supply Module, FM Transmitter & Receiver	5
8	Digital Raido Trainer	5
9	Auto-recorder Trainer	5
10	DVD Player	2
11	Receiver satellite	15
12	Radio	15
13	Hand Drill	31
14	Blower	31
17	Electric Soldering Iron	-
18	Electric Soldering Iron	31
19	Arc Welder	31
20	OHP	1
21	White Board	1
22	Hanging Magnetic Board	1
23	Tool Set	31

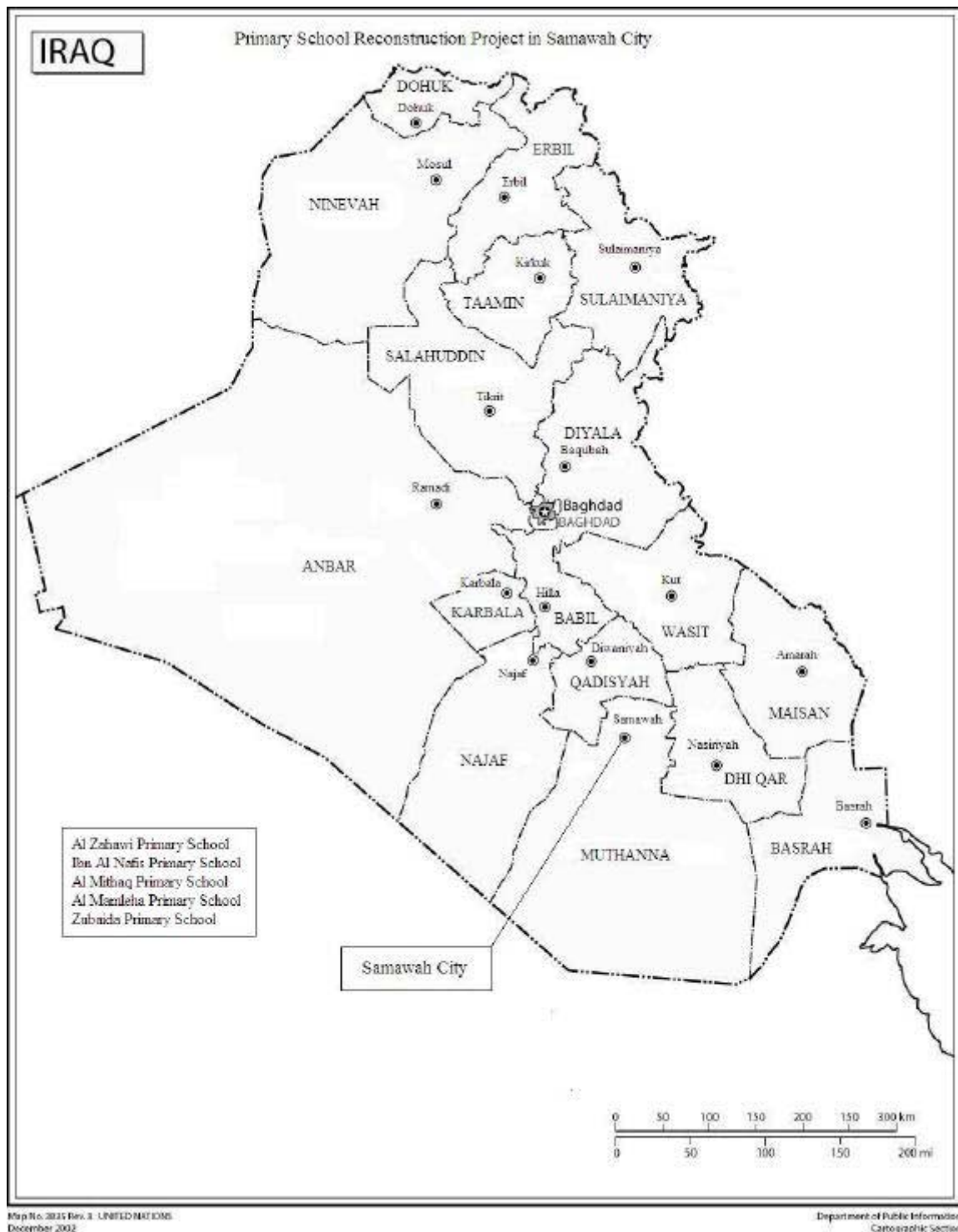
### Implementation Schedule

Item	1	2	3	4	5	6	7	8
E/N								
Consultancy Contract								
Preparation of Tender Document								
Approval of Tender Document								
Bid Announcement								
Distribution of Tender Document								
Tender								
Evaluation of Tender								
Procurement Contract								
(Verification by the MOF)								
Meeting with Supplier								
Procution & Procurement of Equipment								
Inspection before the shipment								
Inspection by the third party								
Meeting with local agency								
Meeting with local consultant								
Confirmation of Site Preparation								
Transportation by marine								
Transportation by land								
Installation of Equipment								
Inspection of Installation								
Acceptance Inspection & Handing Over								

### Project Profile (Project Summary)

<b>Sector</b>	Education and Vocational Training (Human Resources)
<b>Project Name</b>	<b>Demolition and Reconstruction of Primary Schools in Muthanna Governorate</b>
<b>Background (current state, necessity of immediate action &amp; the needs)</b>	<p>The education system in Iraq was widely regarded as one of the best in the Middle East until the 1980s. In the preceding years, the country had made great progress at all levels of education and had achieved nearly universal primary enrollment by 1980. Thereafter, the system went into a steady decline driven by a combination of: i) lack of resources, as public funds were siphoned off for military expenditures and other priorities of the ruling regime; and (ii) the politicization of the education system, which influenced everything from curriculum, to teaching staff, to admissions policies. In 1989, the education budget was US\$2.5 billion (some 6 percent of GDP) with a per student expenditure of US\$620. Over the period 1993-2002, expenditure per student dropped to only US\$47, most of which was provided through the OFF Program.</p> <p>In addition to the decrease of expenditure for education after the Gulf war, looting of this time covered ceiling fans, lighting, furniture, school desks, fences, doors, glass, blackboards, cabinets, electric cables, school radio stations, telephones, refrigerators, air coolers and conditioners. Almost no investment in the building for basic education has continued for the past 15 years. USAID and UNICEF etc., are acting for the rehabilitation of schools in Iraq however 1,300 schools to be demolished and reconstructed in the nation are untouched. In Baghdad area, many NGOs are playing an active role in rehabilitation of schools and the needs of reconstruction is not so high. In local area the needs of reconstruction is high. This project aims to meet the reconstruction needs in Muthanna Governorate. Out of 31 primary schools listed by MOE for the reconstruction in Muthanna Governorate, 10 schools will be targeted. MOE plan to open the seminar for school rehabilitation in March and the damage assessment report is under preparation to use in it. In the seminar MOE will call for the assistance for reconstruction of schools to other donors, international organizations and NGOs.</p>
<b>Counterpart and Executing Agencies</b>	Directorate of General Education, Ministry of Education
<b>Description of the Assistance</b>	Current situation of targeted schools(see attachment 1)
<b>Project Site</b>	5 primary schools in Samawah City
<b>Effectiveness/Benefit (beneficiary)</b>	1) Beneficiary 1,500 pupils and teachers in the school and 120,000 Samawah citizen 2) Indicator of Project Effect Attendance rate, completion rate and cohort survival rate
<b>Presumed Project Period</b>	Construction period : 8 month
<b>Presumed Contract Manner (competitive bid, nominated contract)</b>	Cost estimations were divided into local contractor bidding and Japanese constructor bidding. The supervising will be undertaken by Japanese consultant at Amman or Kuwait through remote control of local consultants. Local consultants expected to be selected from Japanese NGOs.
<b>Expected Transit Method</b>	Equipment and furniture to be transported from Amman.
<b>Necessity of the Installation of Machinery</b>	Item with difficult installation is not included such as desk, chair, window type air-con and heater.
<b>Profile of Engineer responsible for the installation (nationality &amp; capability)</b>	Not necessary
<b>Necessity of O&amp;M Training</b>	Not necessary
<b>Contents of Training</b>	
<b>Other remarks regarding O&amp;M</b>	
<b>Involvement of Other Donors</b>	The rehabilitation of facilities are done by USAID at the level of emergency repairing.
<b>Other Considerations (environment, gender, etc)</b>	The schools or classrooms are separated by male and female. The equipment layout considering this situation may be required.

## Location Map



### Rough Estimate of Project Cost

(Unit: 1,000Yen)

Classification		Costs	
		Case of Iraqi Contractor	Case of Japanese Contractor
Equipment Cost		395,123	429,482
	1. Procurement cost	395,123	429,482
	2. Transport fee	0	0
	3. Installation	0	0
Design and Supervision		39,512	39,512
Total of Project Cost		434,635	468,994

### Implementation Schedule

Item	1	2	3	4	5	6	7	8	9	10	11	12	13
E/N													
Consultancy Contract													
Preparation of Tender Document													
Approval of Tender Document													
Bid Announcement													
Distribution of Tender Document													
Tender													
Evaluation of Tender													
Contractor Contract													
(Verification by MOF)													
Preparation of Procurement													
Temporary Work													
Foundation Work													
Building Frame Work													
Exterior Work													
Interior Work													
Connection of Infrastructure													
Electric Installation													
Water Supply, Drainage, Sanitation Work													
Surrounding Work													
Acceptance Inspection & Handing Over													

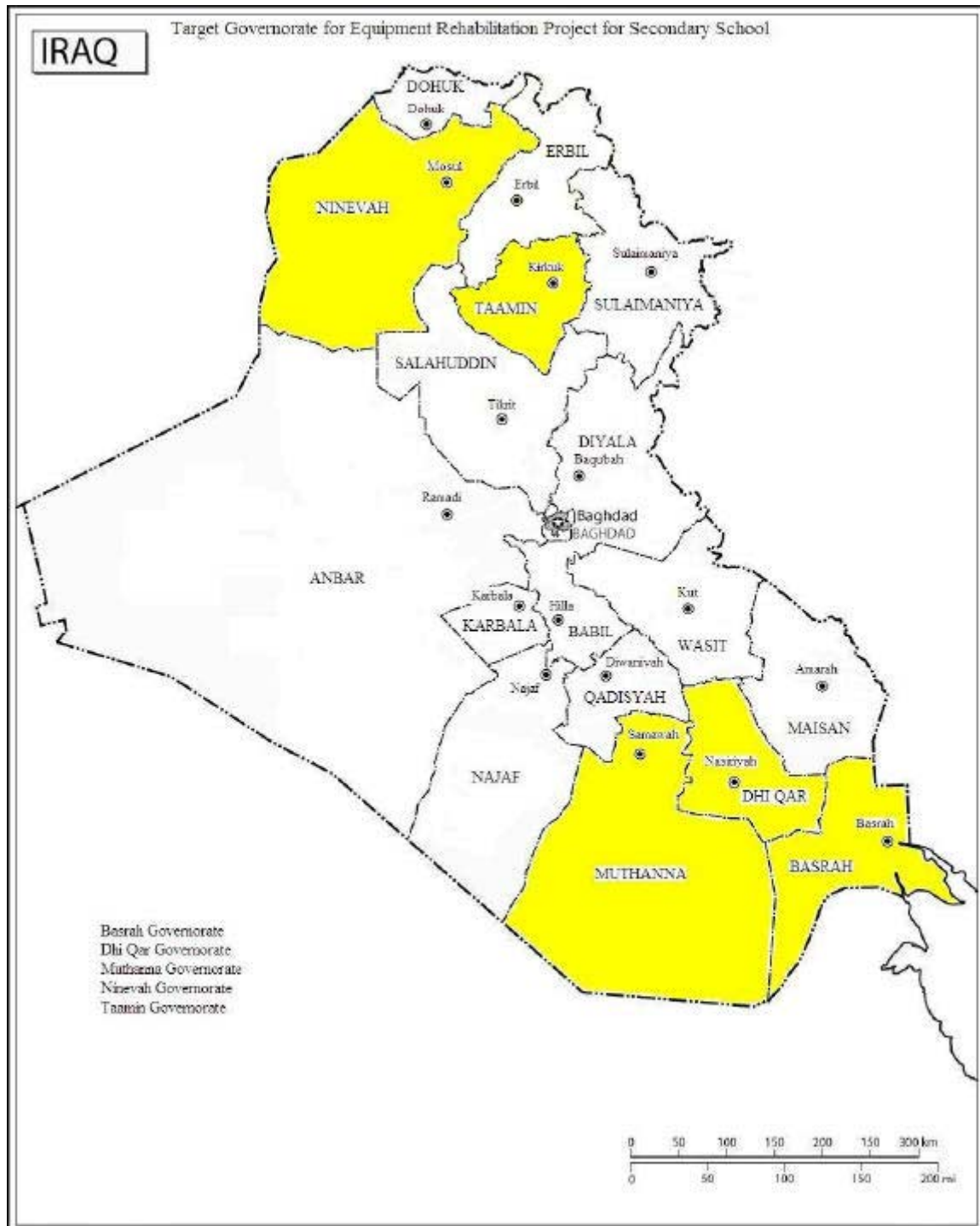


### Project Profile (Project Summary)

<b>Sector</b>	Education and Vocational Training (Human Resources)
<b>Project Name</b>	<b>Equipment Rehabilitation in the secondary school in Iraq</b>
<b>Background (current state, necessity of immediate action &amp; the needs)</b>	<p>The education system in Iraq was widely regarded as one of the best in the Middle East until the 1980s. In the preceding years, the country had made great progress at all levels of education and had achieved nearly universal primary enrollment by 1980. Thereafter, the system went into a steady decline driven by a combination of: i) lack of resources, as public funds were siphoned off for military expenditures and other priorities of the ruling regime; and (ii) the politicization of the education system, which influenced everything from curriculum, to teaching staff, to admissions policies. In 1989, the education budget was US\$2.5 billion (some 6 percent of GDP) with a per student expenditure of US\$620. Over the period 1993-2002, expenditure per student dropped to only US\$47, most of which was provided through the OFF Program. The quality of education has deteriorated.</p> <p>Factors responsible for the decline in quality include low level of education financing, deteriorating infrastructure, lack of minimum standards in the form of teaching-learning materials, outdated curricula, and overcrowding. Unmotivated, demoralized, and poorly trained staffs were deployed in many schools. Teaching methods continue to be based on lecture and recall with no emphasis on analysis, synthesis or other forms of knowledge application. Innovation and initiatives to improve quality have been neglected.</p> <p>In addition to the decrease of expenditure for education after the Gulf war, looting of this time covered ceiling fans, lighting, furniture, school desks, fences, doors, glass, blackboards, cabinets, electric cables, school radio stations, telephones, refrigerators, air coolers and conditioners. The Project aims to rehabilitate the teachers' room's equipment and science kits in the secondary schools in Iraq.</p> <p>In the selected Governorates, the assistance from other donors and NGO is relatively minor such as Southern and Northern area.</p>
<b>Counterpart and Executing Agencies</b>	Directorate of General Education, Ministry of Education
<b>Description of the Assistance</b>	Equipment List (see attachment 1)
<b>Project Site</b>	Each governorate of Iraq, Muthanna, Maisan, Dhi Qar, Taamin and Ninevah
<b>Effectiveness/Benefit (beneficiary)</b>	<p>1) Beneficiary</p> <p>i) Basrah Governorate (120,000 students, 2 million people)</p> <p>ii) Muthanna Governorate (10,000 students, 0.5 million people)</p> <p>iii) Maisan Governorate (25,000 students, 0.85 million people)</p> <p>iv) Dhi Qar Governorate (60,000 students, 1.5 million people)</p> <p>v) Taamin Governorate (40,000 students, 0.85 million people)</p> <p>vi) Ninevah Governorate (85,000 students, 2.5 million people)</p> <p>2) Indicator of Project Effect</p> <p>Improvement of educational quality (increase of practice hours and up grade of intelligibility) and Job prospects (employment rate and employers)</p>
<b>Presumed Project Period</b>	<p>Production period : two month after the contract.</p> <p>Transportation period : two month after shipment.</p> <p>Installation period: 1 month after arrival.</p>
<b>Presumed Contract Manner (competitive bid, nominated contract)</b>	Competitive bid by Japanese trading companies.
<b>Expected Transit Method</b>	Marine ocean by containers and inland transportation up to designated warehouse in each main city in each governorate. Distribution from the warehouse to each school will be assisted by MOE, governorate, city, UNICEF etc.,

<b>Necessity of the Installation of Machinery</b>	No equipment, which needs the installation, included
<b>Profile of Engineer responsible for the installation (nationality &amp; capability)</b>	The operation and handling guide of equipment will be required rather than the installation capacity of equipment. The training for this purpose was included.
<b>Operation and Maintenance (O&amp;M) Structure</b>	No equipment, which need the maintenance, was included, but the instruction for cleaning after use will be included.
<b>Necessity of O&amp;M Training</b>	No need.
<b>Involvement of Other Donors</b>	This project was requested as urgent needs. If the decision will be delayed, the project should be revised.
<b>Other Considerations (environment, gender, etc )</b>	The schools or classrooms are separated by male and female. The equipment layout considering this situation may be required.

## Location Map



Map No. 2025 Rev. 2 UNITED NATIONS  
December 2022

Department of Public Information  
Cartographic Section

### Rough Estimate of Project Cost

(Unit: 1,000Yen)

Classification	Costs					
Governorate	Basrah	Muthanna	Maisan	Dhi Qar	Taamin	Ninevah
Equipment Cost	311,885	71,180	125,387	271,436	194,803	357,261
1.Procurement cost	274,936	60,047	107,837	239,499	167,899	310,837
2.Transport fee	21,220	5,835	9,285	19,214	15,953	30,307
3.Installation cost	15,729	5,298	8,265	12,723	10,951	16,117
Design and Supervision	32,037	27,266	29,292	32,094	30,885	32,094
Total of Project Cost	343,922	98,446	154,679	303,530	225,688	389,355

### Equipment List

No.	Equipment	Q'ty
Teachers' room		
1	Airconditioner	2
2	Heater	2
3	Digital Printing machine	1
4	OHP	1
Chemistry		
1	Electrolysis Apparatus	1
2	Metal Acid Reaction Apparatus	1
3	Law of Conservation of Mass	1
4	Osmotic Pressure Demonstrator	1
5	Molecular Model, Inorganic/organic	3
6	Kipp's Gas Generator	1
7	Simple Polarimeter	1
8	Hoffmann's Voltmeter	1
9	Periodic Chart	1
10	Measuring Cylinder, 100ml, PP	5
11	Measuring Cylinder, 250ml, PP	5
12	Beaker, 100ml, PP, pack of 12	1
13	Beaker, 250ml, PP, pack of 12	1
14	Pipette, dropping bottle, 100cc	5
15	Washing Bottle, 250ml, PE	5
16	Burettes, 10ml, class B	3
17	Burettes, 25ml, class B	3
18	Crucible, porcelain, 15ml, with lid	3
19	Conical flask, 100ml, pack of 12	1
20	Conical Flask, 250ml, pack of 12	1
21	Flask, flat bottom, 250ml	5
22	Filter Funnel, 64mm, PE, pack of 10	1
23	Evaporating Basin, 50ml, porcelain	5
24	Test Tube, 125x16mm, pack of 100	1
25	Petri Dish, 90mm, pack of 10	2
26	Bottle with cap, 125ml, clear	5
27	Bottle with cap, 100ml, amber	5
28	Burette Stand	1
29	Triod Stand	5
30	Iron Gauze, ceramic center	5
31	Crucible Tong	2
32	Burner, methylated spirit, 100ml	5
33	Dropping Pipette, with rubber teat	5
34	Pipette, 5ml	3

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35	Pipette, 10ml	3
36	Pipette Pump Bulb	3
37	Spoon with spatula	3
38	Iron Retort Stand with clamp	5
39	Cork Borer	1
40	Test Tube Holder, steel	5
41	Test Tube Stand, plastic	3
42	pH Indication Paper, book	3
43	Recommended Common Chemicals	1
Biology		
1	Biological Microscope	3
2	Microslide Set, Plant, with booklet	3
3	Microslide Set, Animal, with booklet	3
4	Dissecting Set	3
5	Dissecting Pan	3
6	Human Skelton	1
7	Chart, Cell	1
8	Chart, Mitosis/Meiosis	1
9	Chart, Classfying Plant	1
10	Chart, Classfying Animal	1
11	Chart, Heart	1
12	Chart, Lung	1
13	Chart, Digestive System	1
14	Sprinal cord chart	1
15	Eye chart	1
16	Teeth chart	1
17	Skin chart	1
18	Torso chart	1
19	Roots chart	1
20	Leaves chart	1
21	Stems chart	1
22	Flowers chart	1
Physics		
1	Digital Vernir Caliper	3
2	Measuring Tape, steel	3
3	Spring Balance, set of 5 kinds	1
4	Portable Electronic Balance	1
5	Digital Stopwatch	3
6	Lever & Balance	1
7	Water Pressure/Depth Relation	1
8	Heat Extension Demonstrator	1
9	Water Calorimeter	1
10	Boyle's Law Apparatus	1
11	Heron's Steam Turbine Model	1
12	Optical Fiber Experiment	1
13	Newton's Ring	1
14	Recommended Common Chemicals	1
15	Air Column Resonance	1
16	Magnet Set	3
17	Electromagnet Experiment	1
18	Electrostatic Experiment Set	1
19	Daniel Cell	3
20	Primary & Secondary Coils	1
21	Electric Swing	1
22	Electrnonic Circuit Experiment Set	1

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### Implementation Schedule

Item	1	2	3	4	5	6	7	8	9
E/N									
Consultancy Contract									
Preparation of Tender Document									
Approval of Tender Document									
Bid Announcement									
Distribution of Tender Document									
Tender									
Evaluation of Tender									
Procurement Contract									
(Verification by the MOF)									
Meeting with Supplier									
Production of Equipment									
Inspection before the shipment									
Inspection by the third party									
Meeting with local agency									
Meeting with local consultant									
Confirmation of Site Preparation									
Transportation by marine									
Transportation by land									
Distribution of Equipment									
Installation of Equipment									
Inspection of Installation									
Acceptance Inspection & Handing Over									

## **6. Logistics**

## 6. Logistics

### 6.1 Outline of Logistics Survey Results

The logistics survey was conducted with a focus on the particular situation surrounding Iraq. The study identified risks regarding cargo transport, examined associated risk mitigation measures and estimated costs for cargo transport and risk management.

Following an initial domestic study in Japan, the logistics site survey was undertaken in Jordan, Kuwait and Dubai, the latter in the United Arab Emirates. Due to the unstable security situation in Iraq, subcontracted local consultants conducted surveys. In addition, the Study Team collected logistics information via e-mail, telephone and websites of relevant agencies in Japan and other countries.

Figure 6.1.1 shows the major cargo transport routes into Iraq. Numerous private and government forwarders exist, many who transported cargo into Iraq during and following the 'Oil for Food' program. Furthermore, due to the unstable security situation in Iraq, security services including security escorts for cargo transport, are well developed. Cargo insurance for Iraqi domestic transport is therefore generally tailored on a project basis. Transport risks and the applicability of insurance and its associated premium are also evaluated for each project. Recently there has been an increase in the number of insurance companies providing cargo insurance. However, much cargo still remains uninsured due to the high insurance premiums and recent lengthy periods when insurance was unavailable.

Despite the many transport routes into the country and present low accident rate when compared to the huge volume of cargo transported, transport to Iraq still involves risks. To reduce these risks, security escorts and insurance are recommended even though this involves additional costs. Nonetheless, the risks due to these limitations have resulted in higher ocean freight and inland transport costs for forwarders to Iraq than for other 'ordinary' destinations.

This chapter explains transport routes, forwarders, risks and risk mitigation measures relevant to cargo transport, the associated cost estimation method and bidding conditions. Cargo transport costs by project are presented in each project profile (project summary) in Chapters 2 to 5.

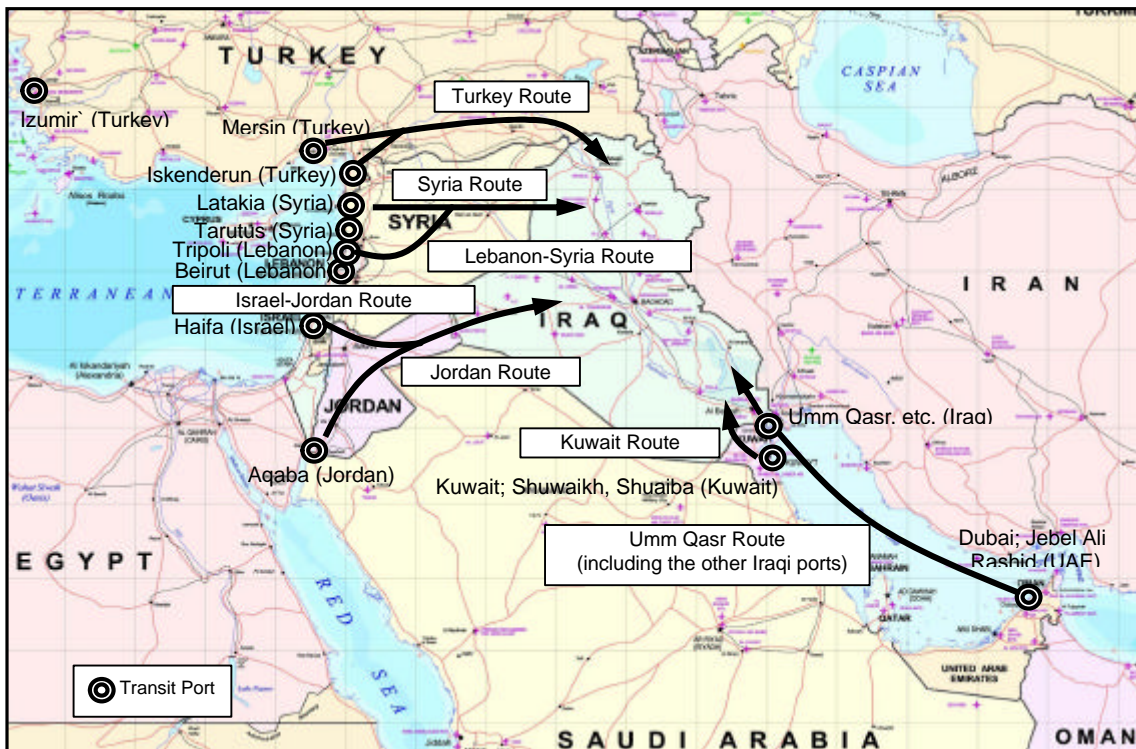


Figure 6.1.1 Cargo Transport Routes into Iraq



## 6.2 Transport Routes

### 6.2.1 Ocean Transport Routes

The survey of the transport routes was undertaken based on site visits to Iraqi borders and interviews with forwarders, shipping companies, port authorities, and so on. In addition, extensive information relevant to Iraqi logistics was obtained from the website of the United Nations Joint Logistic Center (UNJLC; <http://www.unjlc.org/content/index.phtml/itemId/5585>).

The standard transit time from Japan to Iraq is 35 to 40 days. Nonetheless, a transit time of two months was assumed when planning estimates for each project schedule because of expected delays due to, for example, congestion at ports and borders, inspection of cargo, waiting time for cargo handling, etc. Table 6.2.1 outlines inland transport distance from major transit ports to major cities in Iraq.

**Table 6.2.1 Inland Transport Distance from Major Transit Ports to Major Cities in Iraq**

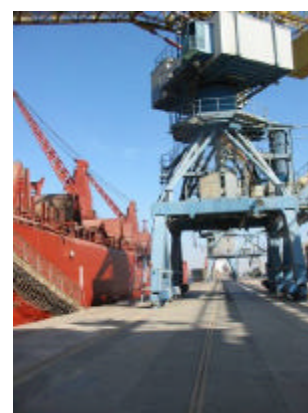
Destination City Names	Inland Transport Distance from Major Transit Ports (km)				
	Umm Qasr	Aqaba	Tarutus	Latakia	Iskenderun
Mosul	1,080	1,588	1,345	1,220	930
Erbil	971	1,542	1,300	1,390	1,010
Kirkuk	876	1,447	1,225	980	1,210
Sulaimaniya	952	1,523	1,280	1,370	1,210
Tikrit	796	1,367	1,140	1,230	1,210
Samarrah	770	1,463	1,240	1,330	1,460
Baqubah	677	1,258	1,035	1,125	1,380
Ramadi	730	1,082	825	915	1,510
Baghdad	620	1,192	950	1,040	1,330
Karbala	596	1,300	1,075	1,165	1,410
Hilla	555	1,292	1,060	1,150	1,450
Kut	450	1,364	1,100	1,190	1,680
Najaf	540	1,353	1,130	1,220	1,510
Diwaniyah	470	1,373	1,150	1,240	1,460
Amarah	230	1,558	1,295	1,385	1,730
Nasiriyah	280	1,567	1,300	1,390	1,580
Basrah	70	1,741	1,480	1,570	1,830

Source: UNJLC Dubai Office

The characteristics of each cargo transport route are explained in more detail below.

#### (1) Jordan Route

This route is used to transport cargo into Iraq via the Aqaba Port (Photo 6.2.1). Aqaba has been one of the most utilized ports to transport cargo into Iraq during the ‘Oil for Food’ program. However, the increase in container handling has caused congestion at the port, such as long waiting times for vessels entering the port, unloading containers from vessels and transshipment to trailers. According to the Aqaba Port Corporation, the level of container handling in 2003 increased by 53% from that recorded in 2002. As Aqaba Port is the only import/export port in Jordan, this congestion has become a serious issue as it is reflecting negatively on the national distribution system. His Majesty King Abdullah inspected the Aqaba Port in January 2004 and instructed that the port operation be improved. The Aqaba Port Corporation, Aqaba Special Economic Zone Authority (ASEZA; <http://www.aqabazone>).



**Photo 6.2.1 General cargo berth in the Aqaba Port. The berths are not as congested as container berths. (Photo by the Study Team, January 2004)**

com/), and Aqaba Development Company (ADC) are making efforts to eliminate congestion. According to the Aqaba Port Corporation, the budget for 2004 was increased by 40% in comparison to 2003, and the average waiting time for vessels entering the port had been shortened by up to three to five days as of January 2004. However, according to local forwarders in Jordan, two weeks waiting time is still required once custom clearance and other handling procedures are included. It is aimed to eliminate congestion by June 2004 by improving port operation and expansion of port facilities. In March 2004, the A.P. Moller-Maersk Group signed a two-year operation agreement at the Aqaba Port Terminal.

The distance from Aqaba to Baghdad is about 1,200 km. The Jordan route requires longer land transportation compared to the Umm Qasr and Kuwait routes, apart from transport to the western desert areas of Iraq. However, road conditions are good and the transit of the border between Jordan and Iraq (Al Kawamah-Trebil) does not involve any particular difficulties. The Jordan route has been used significantly for cargo transportation into Iraq including transportation of super heavy equipment.

When the Study Team visited the border in February 2004, truck queues about 1 km in length were waiting for customs clearance on the Jordanian side. There was no congestion at the border on the Iraqi side. According to staff in the Jordanian customs office, the security situation in the border area is stable and customs clearance is smooth. Offices of major forwarders are established near customs facilities to support customs clearance of cargo into Iraq.

## (2) Umm Qasr Route (including the other Iraqi ports)

Iraq has two major international ports that handle general cargo, namely Umm Qasr Port and Kohr Zubair Port (Photo 6.2.4). These were constructed by a Japanese contractor. The ports had well-established facilities. However, insufficient maintenance during the Saddam Hussein regime has resulted in a deterioration of port facilities and accelerated severe sedimentation in the ports and along navigation routes. The sediment is primarily coming from the Satt al-Arab River. Present frequent cuts in electricity supplies in southern Iraq result in operational limitations in the ports. The ports are also prioritized for military use and congestion is sometimes reported for vessels sailing into the port and unloading cargo.

The United Nations Development Programme (UNDP) implemented dredging works of Umm Qasr Port under Japanese grant aid finance. As a result, the Umm Qasr Port has a 13.5 m depth at high tide. UNDP plans to implement additional dredging works to ensure a 13.5 m water depth regardless of the tidal level. Cargo from Japan can be transported by feeder vessels from Dubai, in the United Arab Emirates, to the Umm Qasr Port. Many private shipping companies handle cargo and passenger transport from Dubai (Photo 6.2.5). SSA, an American port operation company, has been managing the Umm Qasr Port since May 2003. The management contract will be completed within the first half of 2004 and it



**Photo 6.2.2** Road from Amman to Baghdad (10 km to the Jordan-Iraq border on Jordan side). Jordan side has two lanes and Iraqi side (Route 1) has six lanes. (Photo by the Study Team, February 2004)



**Photo 6.2.3** Trucks waiting for customs clearance at the Jordan-Iraq border (Al Karameh). There are many used vehicles. (Photo by the Study Team, February 2004)



**Photo 6.2.4** Kohr Zubair Port (A.P. Mollar Terminal) (Photo by Maersk Sealand)



**Photo 6.2.5** Vehicles waiting for loading to a vessel from Dubai (Port Rashid) to the Umm Qasr Port (Photo by the Study Team, February 2004)

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remains unclear whether the contract will be further extended.

The Kohr Zubair Port, which is located about 8 km inland from the Umm Qasr Port, became one of the transit ports for delivering Japanese grant aid cargo. Maersk Sealand commenced regular services to the Kohr Zubair Port in March 2004 as an alternative to the Umm Qasr Port where congestion occurs and port charges are relatively high. The port management was subcontracted to the Maersk Sealand Group. CPA called a tender in February 2004 for dredging works in several berths in the Kohr Zubair Port. However, dredging of the remaining port locations and navigation canal from Umm Qasr Port to Kohr Zubair Port and rehabilitation and installation of new port facilities are still required to allow full operation of the port.

Under current conditions, the majority of cargo to Iraq is transported via ports in surrounding countries rather than those in Iraq. With an increase in cargo to Iraq, these deficiencies in operation of the domestic ports have therefore resulted in an overall increase in ocean freight and port charges to Iraq. The inadequacies in port operation are a bottleneck to cargo distribution in Iraq. Moreover, cargo coming into Iraq from foreign countries is handled by forwarders in surrounding countries as well as within Iraq, further constraining the development of a transport industry within the country. There are strong demands for Japanese assistance to develop Iraqi domestic ports, not only from governmental agencies in Iraq, but also from international donor agencies including the United Nations, shipping companies and forwarders.

The waterway to Iraq is now controlled by the US Navy Marine Liaison Office (MARLO), located in Bahrain.

### (3) Kuwait Route

The main ports for international trade in Kuwait are the Shuwaikh Port (Photo 6.2.6), which is located in the center of Kuwait City, and the Shuaiba Port, which is located in the southern area of Kuwait City. The Shuwaikh Port mainly handles general cargo. The Shuaiba Port handles both military and general cargo. The U.S. and British military and Japanese self-defence forces utilize the Shuaiba Port. It is therefore strictly guarded for security purposes. The water depth of the Shuwaikh Port is 9.6 m at high tide. The Shuaiba Port provides a water depth of at least 13 m throughout the day and, as a consequence, large vessels can sail into the port. Both ports can handle super heavy cargo including generators.

The Kuwaiti ports were the main transit locations for cargo into Iraq during the Iran-Iraq War in the 1980s, since utilization of the Umm Qasr and Basra Ports in Iraq were limited due to the Iranian military invasion. A 90-day waiting time occurs for vessels sailing into the Shuwaikh Port because of the increase in cargo handling for Iraq. However, indiscriminate Iranian attacks on vessels caused a drastic decrease in the number of vessels sailing into Kuwait. Ports in surrounding countries including Aqaba became main transit ports for cargo into Iraq. The position of the Kuwaiti ports as a main entrance to Iraq has not been restored subsequent to the Iran-Iraq War. Moreover, the Iraqi invasion of Kuwait in 1990 terminated communication between Iraq and Kuwait. When the war between Iraq and the coalition forces started in March 2003, cargo transport (mostly military) between Iraq and Kuwait was resumed (Photo 6.2.7). However, the Kuwaiti government still limits the issue of visas for Iraqi people and Iraqi trucks cannot enter Kuwait. Kuwaiti forwarders handling cargo transport into Iraq must procure Kuwaiti and Saudi Arabian trucks.



**Photo 6.2.6 Shuwaikh Port, Kuwait**  
(Photo by the Study Team, February 2004)



**Photo 6.2.7 A coalition forces convoy returned from Iraq** (Photo by the Study Team, February 2004)

The Kuwaiti customs offered privileges to Japanese aid cargo for Iraq when the Study Team visited the customs office. The privileges include simplification of customs clearance procedures and transit tax exemptions. The road connections between Kuwait and Iraq are well developed (Photo 6.2.8). Congestion at the Kuwait-Iraq border (Abdaly-Safwan) is not significant. The Kuwait route is one of the practical options given the well-established port facilities and the short inland transport distance to Iraq.

#### (4) Dubai Route

Dubai handles the largest amount of cargo in the Middle East and the seventh largest in the world. It has two main international trade ports, namely the Jebel Ali Port (Photo 6.2.9) and Port Rashid. Most cargo for Iraq and Kuwait are transshipped at Dubai from mother vessels to feeder vessels. The Dubai Airport also acts as a hub airport in the Middle East. Dubai Port Authority (DPA), a government agency, claims that the required transshipment times from vessel to vessel and from vessel to aircraft are the shortest in the world.

Due to the large number of cargo vessels, passenger vessels, and cargo flights to Iraq commencing in Dubai, it is a major transit point for general and aid cargo into Iraq. Since the recent increase in ocean freight charges to Iraq, inland transport from Dubai to Iraq via Saudi Arabia, Jordan and Kuwait is increasing.

The Dubai government established the Dubai Aid City (<http://www.dubaiaidcity.ae/>) to strengthen the position of Dubai as the transit location of aid cargo to developing countries, including Iraq. Dubai offers privileges for aid cargo handled by donor agencies including the United Nations, the World Bank and bilateral donor agencies. DPA offers preferential port charges for Japanese aid cargo to Iraq, as mentioned in Table 6.2.2. The privileges are applied when a bill of lading (B/L) of aid cargo includes an indication of "Japanese Aid Cargo for Iraq".



**Photo 6.2.8** A truck transporting container from Kuwait to Iraq (Photo by the Study Team, February 2004)



**Photo 6.2.9** Container berth in the Jebel Ali Port (Photo by the Study Team, February 2004)

**Table 6.2.2 Preferential Port Charges at Dubai for Japanese Aid Cargo for Iraq**

Item	20' Container	40' Container
Shifting of full containers from container yard to storage shed, when quoted in m <sup>3</sup> and based on an average of 25 m <sup>3</sup> /20' and 55 m <sup>3</sup> /40'	US\$0.82 per m <sup>3</sup>	US\$0.50 per m <sup>3</sup>
Grounding of containers at storage shed (CFS)	Nil	Nil
Shifting of empty containers from storage shed (CFS) to container yard	Nil	Nil
Unloading of containers at storage shed (CFS)	US\$2.18/m <sup>3</sup>	US\$1.98/m <sup>3</sup>
Loading of goods into container	US\$2.18/m <sup>3</sup>	US\$1.98/m <sup>3</sup>
Packing palletization and wrapping of pallets when cargo shipped out	US\$16.28/m <sup>3</sup>	
Sticking labels	Nil	Nil
Sorting of goods	US\$3.53/m <sup>3</sup>	
Overtime work after normal working hours	US\$5.43 per man per hr	
Monthly inventory control / reporting charges	Nil	Nil
Forklift charges for any services provided in addition to above	US\$13.57 per hr or part thereof	
Labor hire charges for any services provided in addition to above	US\$5.43 per man per hour	
<b>Storage (covered + open)</b>	Free	
1st 60 days		
Thereafter	US\$0.06850 per mt per day	
<b>Port handling charges</b>		
General cargo	US\$4.66 per metric ton	
Iron and steel	US\$5.62 per metric ton	
Plywood	US\$4.66 per metric ton	
Timber & logs	US\$3.57 per metric ton	
Bagged cargo (non-hazardous & bags over 25 kg)	US\$3.57 per metric ton	
Heavy lifts (20 m <sup>3</sup> /MT or over)	US\$5.76 per metric ton	

Source: Offer from the Dubai Port Authority, US\$1=AED3.685



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(5) Turkey Route

The Turkey route is one of the main routes for cargo transported from European and American countries. The ocean transit time from Japan is about one week longer than compared to the transit time to the gulf countries. The main port to Iraq is the Mersin Port followed by the Iskenderun and Izmir Ports. The route is effective when transporting cargo to the northern part of Iraq, for example to Dohuk, Erbil, Sulaimaniya, Mosul, Kirukuk, and Tikrit, as the transport distance in Iraq is less in areas where security is unstable.

Cargo for Iraq from Turkey is usually transshipped at the border because of a lack of trucks passing into Iraq. Theft and damage of cargo during transshipment are often reported. Moreover, long loading times are required because of a shortage of storage and loading facilities. Queues of trucks kilometers in length are reported waiting for customs clearance at the Turkey-Iraq border (Habur/Silopi-Zakho/Inrahim), mainly due to the increase in fuel trucks to Iraq and crude oil trucks to Turkey. The number of trucks detouring to Syria and Jordan to avoid the congestion at the Turkey-Iraq border has increased.

(6) Syria Route

The Syria route is also one of the main routes for cargo transported from European and American countries. The Latakia and Tarutut Ports handle cargo to Iraq. However, this route does not suit the transportation of super heavy cargo due to a lack of hydraulic low-bed trailers in Syria.

(7) Lebanon-Syria Route

This route is becoming more widely used to transport cargo to Iraq to supplement the Syria route. The Beirut and Tripoli Ports are the gate ports. Based on the sub-contracted survey for the JICA Basic Study for Reconstruction and Rehabilitation of Infrastructure in Iraq, cargo handling at the Beirut Port comprises 11% to Iraq and 60% to Jordan. The Beirut Port still has enough capacity to handle additional cargo.

(8) Israel-Jordan Route

This route is utilized to avoid the congestion at the Aqaba Port in Jordan. Cargo can be loaded at the Haifa Port and transported into Jordan via the Sheikh Hussein Bridge, which was constructed by Japanese grant aid. There are numerous liners traveling from major American, European and Asian ports to the Haifa Port.

(9) Other Routes

Iran and Saudi Arabia can also be used as transit routes to transport cargo into Iraq. However, communications among the countries are limited at a regional level and, as a consequence the amount of cargo handled is also limited.

## 6.2.2 Air Cargo Transport

Air cargo transport to Iraq via Dubai and Bahrain is increasing. Private companies including DHL and EGL have regular and charter cargo flights from Dubai and Bahrain to Baghdad and Mosul (Photo 6.2.10). Basra is also a destination of charter cargo flights. Moreover, surrounding countries of Iraq including Turkey and Jordan have plans to open new cargo flight routes into Iraq. If the volume of cargo is relatively low and its value high, air cargo transport and multi-modal transport including air are practical options to reduce transit time and the risks involved in land transport. Table 6.2.3 presents air cargo charges from Dubai to Baghdad, while Table 6.2.4 lists cargo delivery charges from Baghdad Airport to major cities in Iraq.

According to the Minister of Transportation, the civilian section of Baghdad Airport has been turned over to the Iraqi government from CPA and the airport had 125 take offs and landings per day in February 2004.

**Table 6.2.3 Air Cargo Charges from Dubai to Baghdad (US\$/kg)**

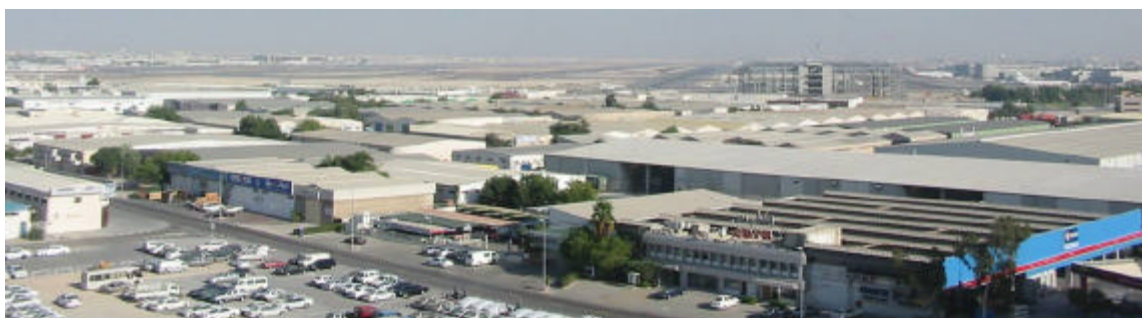
Base rate (<400 kg)	<1,000 kg	<5,000 kg	<10,000 kg	10,000 kg and above
US\$ 1,400	US\$ 3.50	US\$ 2.75	US\$ 2.25	US\$ 1.95

Source: Eagle Global Logistics Tariff, 25% additional charges for perishable cargo

**Table 6.2.4 Cargo Delivery Charges from Baghdad Airport to Major Cities in Iraq**

Destination	Base (<45 kg)	< 100 kg	< 300 kg	< 500 kg	< 1,000 kg	< 2,000 kg	< 3,000 kg	< 7000 kg	7,000 kg and above
Baghdad	300	1.50	1.25	0.90	0.60	0.55	0.40	0.35	0.165
Tikrit	350	1.65	1.15	0.95	0.65	0.65	0.55	0.50	0.175
Kirkuk	375	1.65	1.15	0.95	0.65	0.65	0.55	0.50	0.175
Mosul	400	1.85	1.35	1.15	0.85	0.75	0.70	0.70	0.185
Samarrah	400	1.85	1.35	1.15	0.85	0.75	0.70	0.70	0.185
Basrah	350	1.65	1.15	0.95	0.65	0.65	0.55	0.50	0.175

Source: Eagle Global Logistics Tariff, 15% additional charges for perishable cargo, the above rates do not include insurance and security escort



**Photo 6.2.10 Dubai Airport and Storages for Transshipment in the Dubai Airport Free Zone**  
 (Photo by the Study Team, February 2004)

### 6.3 Forwarders

At present European and American forwarders have much more experience than their Japanese counterparts in transporting cargo into Iraq. Some experienced forwarders have their local corporations, joint companies, and offices in Japan. These experienced forwarders have up-to-date information relevant to cargo transport to Iraq, including security escorts and affiliated local forwarders. Many experienced forwarders also have branch offices in Iraq. Moreover, some have their own security escorts, which are authorized by the coalition forces or CPA. In contrast, Iraqi domestic forwarders are mostly small and middle class family enterprises. It was rather difficult for the Study Team to obtain reliable information from these Iraqi forwarders, even through the sub-contracted study by local consultants. This reflected the constraints of accessibility to information and time limitations. Joint companies of Iraqi domestic forwarders and international forwarders exist that provide seamless services for transporting cargo to Iraq. Table 6.3.1 lists forwarders in Japan that handle cargo into Iraq. Table 6.3.2 lists forwarders in surrounding countries of Iraq while Table 6.3.3 tabulates Iraqi forwarders.

**Table 6.3.1 Forwarders in Japan that Handle Cargo to Iraq**

Company Name	Remarks
Nippon Express	Handling cargo for the Japanese self-defence forces.
Seino-Schenker	HQ of Schenker is in Germany. Branches and partners are in Iraq and surrounding countries.
Eagle Global Logistics (EGL)	HQ of EGL is in the US. EGL operates cargo flights from Dubai to Iraq.
Saga Japan	HQ of Saga is in France. Partners are in Dubai and surrounding countries.
Yusen Logistics	Partners are in the Middle East.
Maersk Logistics Japan	A parent shipping company, Maersk-Sealand from Denmark, has regular vessels to Iraq.

Source: JICA Study Team. Only includes companies that could provide information relevant to cargo transport into Iraq and have door-to-door cargo transport services to Iraq.

**Table 6.3.2 Forwarders in Neighboring Countries of Iraq**

Country	City	Company Name
Jordan	Amman	Modern Trade Link Est.
	Amman	Allied Shipping Agencies
	Amman	KN Orient Transport Co. W.I.I.*
	Amman	Bax Global*
	Amman	Jordan Global Shipping Agencies Co., Ltd.*
	Amman	Naber & Company International Forwarders*
	Amman	M.G. International Transport GmbH*
	Amman	Orient Shipping Co. Ltd.*
	Amman	The Jordanian Syrian Land Transport Co.*
	Amman	Iraqi Jordanian Land Transport Company*
	Aqaba	Amin Kawar & Sons Co.
U.A.E.	Dubai	Othmel Shipping & Transport*
	Dubai	MC Trade Middle East FZE*
	Dubai	Enkay Express Emirates*
Kuwait	Kuwait	Kuwait & Gulf Link Transport CO. K.S.C.*
	Kuwait	Al-Naqeeb & Khattar Co. WLL*
	Kuwait	The Kuwait Nippon Associates Ltd.*
	Kuwait	Kuwait Transcontinental Shipping Co. WLL
	Kuwait	Universal Express Co.
	Kuwait	GAC Kuwait
	Kuwait	Public Warehousing Company
	Kuwait	The Transport and Warehousing Group
	Kuwait	Al-Rashed International Shipping
Turkey	Istanbul	UNSPED Global Logistics Trade Co. Inc.*
Syria	Damascus	Gezairi Transport s.a.l.
Lebanon	Beirut	Gezairi Transport s.a.l

Source: JICA Study Team and the UNJLC web site (<http://www.unjlc.org/content/index.phtml/itemId/13165>), etc.  
Companies with asterisk (\*) provided information to the Study Team relevant to cargo transport to Iraq.

**Table 6.3.3 Forwarders in Iraq**

City	Company Name
Basrah	Al Ata'a General Transport Company
Basrah	Al Hufoof General Transport Company
Basrah	Al Saad General Transport Company
Baghdad	Dhifaf Al-Nahrain Transport Company
Baghdad	Ahil Al-Waffa Transport Company
Baghdad	Ibn Batoota Transport Company
Baghdad	Al-Anwar Transport Company
Baghdad	Al-Ajial Transport Company
Baghdad	Asad Babil Transport Company
Baghdad	Al-Barij Transport Company
Baghdad	Al-Badir Transport Company
Baghdad	Bani Saad Transport Company
Baghdad	Al-Bar Al-Arabi Transport Company
Baghdad	Al-Bassam Transport company
Baghdad	Al-Basma Transport Company
Baghdad	Al-Jazeera Al-Arabia Transport Company
Baghdad	Al-Jamal Transport Company
Baghdad	Al-Khaboor Transport Company
Baghdad	Al-Daleel Transport Company
Baghdad	Al-Diwan Transport Company
Baghdad	Al Thuwaib Transport Company
Baghdad	Al-Rimah Transport Company
Baghdad	Zarqaa' Al-Yamamh Transport Company
Baghdad	Al-Zaman Transport Company
Baghdad	Al-Sarmad Transport Company
Baghdad	Al-Salwan Transport Company
Baghdad	Al-Saqiah Transport Company
Baghdad	Al-Sakha' Transport Company
Baghdad	Al-Sami Transport Company
Baghdad	Sinaa' Transport Company
Baghdad	Al-Salah Transport Company
Baghdad	Al-Dhamin Transport Company
Baghdad	Al-Tareeq Transport Company
Baghdad	Al-Tawq Transport Company
Baghdad	Al-Areesh Transport Company
Baghdad	Al-Ghanim Transport Company
Baghdad	Al-Muhanad Company
Erbil	Karkuk Transport Company
Mosul	Al-Shahbaa Transport Company
Mosul	Al Saad General Transport Company
Mosul	Al Reem General Transport Company
Mosul	AL Farooq General Transport Company

Source: The Study Team selected companies from the UNJLC web site (<http://www.unjlc.org/content/index.phtml/itemId/13165>) based on the following criteria: 1. Contact information, e.g. address and telephone number are available, 2. Sufficient numbers of equipment (e.g. more than 50 trucks with more than 25 ton capacity in Baghdad) are available. The results of the sub-contracted survey by local consultants were then added.



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## 6.4 Risks and Risk Management Measures for Cargo Transport

The risks relevant to cargo transport to Iraq are as follows:

- Attacks by looting or terrorists
- Unstable situation relevant to cargo transport
- Unstable ocean and inland transport costs to Iraq that depend on the situation in Iraq
- Undeveloped and unclear regulations relevant to cargo transport in Iraq
- Limitation of validity of cargo insurances

To mitigate the above-mentioned risks, the following measures should be examined for actual project implementation:

- Safe transport route and method
- Cargo insurance for both ocean and inland transport
- Security escort for inland transport in Iraq

During the actual project implementation, comprehensive risk management measures have to be examined case by case for both cargo transport and project implementation based on the latest situation. International security companies deployed in Iraq provide up-to-date security information services, e.g., safe transport routes and the latest security information. Aspects on cargo insurance and transport security service are outlined below. Risk management measures are also discussed based on suggestions by experienced forwarders and international donor agencies.

### 6.4.1 Cargo Insurance

The Study Team inquired on the availability of cargo insurance for Iraq, warranty, insurance premiums, and so on with major insurance companies in Japan and other countries. For ocean transport, ordinary marine cargo insurance can be applied. However, many insurance companies do not sell cargo insurance for inland cargo transportation in Iraq. The reasons for this are the difficulty of inspection when accidents are reported in Iraq and procurement of reinsurance for inland cargo transport in Iraq. When cargo insurance for inland transport in Iraq is available, a supplementary contract for War & SRCC (Strikes, Riots and Civil Commotions) risks has to be added. The supplementary contract is normally effective for looting and terrorism. The insurance premium is determined based on the London War Schedule advised by the War Risks Rating Committee in London. The applicability of insurance is judged on a case-by-case basis depending on the value of cargo, security situation along the transport route, packing method, quality of security escort, and so on. In general, the insurance premium is lowered when armed guards authorized by the coalition force protect the cargo transport. The War & SRCC insurance premium rate varies from about 0.5% (with armed guards authorized by the coalition force) to 7.0% (without security escort). The following is a sample of the insurance warranty:

**WARRANTY:**

*Applicable to all sailings and/or flights and/or sendings:*

*Warranted UN / Coalition force / Coalition Provisional Authority (CPA) approval.*

*Compliance requires the client having:*

- *National export license.*
- *UN / Coalition force / Coalition Provisional Authority (CPA) permit.*
- *Commercial invoice.*
- *Packing list.*

- UN / Coalition force / Coalition Provisional Authority (CPA) packing list.
- Certificate of origin.
- Insurance policy.
- Other documentation as per letter of credit requirements.

*The above apply to shipments that have armed guard protection or travel in convoy in respect of land transits. Definition of approved armed guards: Any organization that is licensed and permitted, by the Coalition forces in Iraq, to carry arms for the purpose of protecting the insurable interest.*

The insurance premium is always reviewed based on the latest situation. The cargo insurance can be prepared as marine cargo insurance with the War & SRCC contract (including inland transportation), or marine cargo insurance and an inland transport cargo insurance separately. Table 6.4.1 lists insurance companies in Japan that handle cargo insurance to Iraq. The Study Team obtained relevant information from three such insurance companies in Japan, namely Tokio Marine, Mitsui Sumitomo Insurance and Sompo Japan. The Study Team also confirmed via a forwarder that AIU and Nipponkoa Insurance also provide cargo insurance for Iraq.

#### **6.4.2 Transport Security Services**

Most forwarders provide package cargo transport services to Iraq that include security guards. The Study Team collected information from security companies with activities in Iraq. Companies with offices in Japan and those listed in the U.S. Department of State website ([http://travel.state.gov/iraq\\_securitycompanies.html](http://travel.state.gov/iraq_securitycompanies.html)) were selected.

Some forwarders mentioned that utilizing armed security escorts may spotlight the cargo transport and increase the likelihood of an attack. In contrast, there is an opinion that security escorts may deter such attacks and prevent lootings. The Study Team could not obtain reliable data showing the difference in accident rates between with and without security escorts. However, the cargo insurance premium differs greatly depending on whether the cargo is escorted by armed security or not, and the quality of the security escorts. Therefore, it is recommended that armed security guards authorized by the coalition force or those following instructions from insurance companies be employed. Security escorts of international security companies, the majority of which are British companies, cost about three to five times the rate of security escorts usually hired by forwarders. However, these international companies are reputable in terms of information management and overall arrangements. The quality of the transport security service has to be determined based on the value of the cargo, latest security information, conditions of insurance, etc.

The Study Team obtained relevant information from three companies in Japan that provide security services in Iraq, namely Kroll, Control Risks Group, and Hill and Associates Japan. Security companies with activities in Iraq and also listed in the U.S. Department of State website included AD Consultancy, AKE Limited, Armor Group, Control Risks Group, Custer Battles, Diligence Middle East, Erinys Iraq Limited, Genric, Global Risk Strategies, Group 4 Falck A/S, Hill and Associates Ltd, ICP Group Ltd, ISI, Meteoric Tactical Solutions, Meyer & Associates, Olive Security (UK) Limited, Optimal Solutions Services, Overseas Security & Strategic Information Inc/Safenet-Iraq, RamOPS Risk Management Group, Sumer International Security, Triple Canopy Inc., and Wade-Boyd and Associates LLC.

#### **6.4.3 Risk Management for Cargo Transport**

The Study Team undertook interviews regarding risk management measures relevant to international donor agencies and forwarders with substantial experience in cargo transport into Iraq. The following are the suggested measures:

- Large volumes of cargo should not be transported at once. The storage time in Iraq should be minimized and if cargo storage is required during transportation, the cargo should be

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stored in safe locations, e.g. Dubai, Kuwait and Aqaba, rather than in Iraq, e.g. Umm Qasr and Baghdad.

- Transport cargo in convoy.
- Avoid night transport.
- Avoid standing out, e.g. utilize Iraqi trucks with Iraqi number plates and do not utilize new trucks. Also remove number plate in Iraq when utilizing trucks from surrounding countries.
- Use reliable forwarders familiar with the latest Iraqi situation. A further option is that transport contracts include a statement that forwarders take full responsibility for any accident during cargo transport.
- Hire reliable truck drivers with a clean history. Pay the drivers only after trucks safely return to the designated location.
- Utilize appropriate security escorts. There are two opinions on security personnel, namely: (1) Iraqi people are preferable since they know the site condition well, and (2) other Arabic people including Jordanians are preferable because of difficulties in obtaining reliable histories for Iraqis.
- There are two opinions on security escorts, namely: (1) Avoid noticeable cargo transport (mainly opinion of local forwarders), and (2) Security escorts should be sufficiently armed, e.g. utilization of armored cars, to have a deterrent effect and prevent looting (mainly opinion of international security companies).
- Examine the best security method, including distribution and number of security personnel, type of arms, program of security escort, latest security situation and value and form of cargo.
- Select the safest transport route based on latest security information.
- Carry cargo insurance.
- Air cargo transport is an option to avoid risks involved in land transport, if the value of cargo is high and the volume is reasonable.
- Formulate measures against each expected risk during cargo transport. For example, measures: 1) if transport convoy is attacked and separated, 2) in case of equipment failure, fueling, meals, night transport, 3) for preparation of spare trucks, 4) for preparation of workshops along a transport route to assist in repairs, 5) to bring spare truck parts, etc.

Large amounts of cargo are transported to Iraq on a daily basis. For example, according to the United Nations Joint Logistic Center (UNJLC) the United Nations transported aid cargo using 20,000 trucks and experienced only two or three accidents. Therefore, the accident rate due to theft or terrorism could not be very high. However, the transport risk is still recognized as being higher than in countries with stable security. Aid for Iraq that includes cargo transport into Iraq definitely involves risks and although donor countries cannot completely avoid these, sufficient measures should be established to mitigate them.

## **6.5 Estimates of Cargo Transport Costs**

This section outlines procedures to estimate cargo transport costs. These are shown in the project profile (project summary) of each sector in Chapters 2 to 5. The estimation was prepared by the Study Team following inquiries to forwarders, insurance companies, security companies and shipping companies. The Iraqi reconstruction levy is also discussed although the procedures for its implementation remain unclear.

### **6.5.1 Estimate of the CIF On-site Prices**

The Study Team defined the CIF on-site prices using the following formula:

*CIF on-site =*

*FOB + Ocean transport + Inland transport + Cargo insurance + Security escort*

The cost is estimated assuming the cargo is transported from Japan or third countries to project sites in Iraq via Kuwait. This was because cost information via Kuwait could be obtained more readily than for other routes. Moreover, since the Kuwait route is one of the most major routes to transport cargo into Iraq, the cost estimate method is considered effective. Given the cargo transport cost of other major routes from Japan to Iraq, namely the Jordan, Umm Qasr and Kuwait routes, are also not significantly different at present and each route has its own advantages and disadvantages, selection of the appropriate route is difficult. Table 6.5.1 outlines the characteristics of the major routes in terms of cargo transport cost.

**Table 6.5.1 Characteristics of Major Routes from Japan in Terms of Cargo Transport Cost**

Route	Characteristics
Jordan Route (Via Aqaba)	<ul style="list-style-type: none"> <li>• Congestion fee for miscellaneous costs for vessel waiting, cargo storage, truck waiting, etc. is expected because of congestion of the Aqaba Port. The congestion fee would be eliminated following on-going efforts to improve port operation.</li> <li>• Because of the long land transport distance, transport and security costs are higher than the Umm Qasr and Kuwait routes, especially if the destination is southern part of Iraq.</li> </ul>
Umm Qasr Route	<ul style="list-style-type: none"> <li>• Port charges in the Umm Qasr Port are high. These could be reduced when the port operation is handed over from SSA to the Iraqi government.</li> <li>• The inspection charge of about US\$300 per 40' container could be reduced if the cargo inspection by the U.S. military is abolished.</li> <li>• The ocean freight charges from Dubai to Umm Qasr are high compared to the distance. The charges could be reduced following the progress of port development and increases in cargo transport capacity.</li> <li>• Inland transport cost from the Umm Qasr Port is lower than for the other routes.</li> </ul>
Kuwait Route	<ul style="list-style-type: none"> <li>• The port charges and ocean freight charges are lower than the Umm Qasr route.</li> <li>• Land transport cost is considerably higher than for the Umm Qasr route.</li> </ul>

## 6.5.2 FOB Prices

The FOB price of each project was obtained from experts in the Study Team, who are in charge of project formulation in each sector.

## 6.5.3 Ocean Transport Costs

The ocean transport costs we estimated by the following procedure:

*Ocean transport costs = Ocean freight charges + Port charges*

Ocean freight charges from Japan to Kuwait are estimated as US\$3,500 per 40' container and US\$200 per freight ton for general cargo, which includes accompanied charges, e.g. Yen Appreciation Surcharges (YAS), Fuel Adjustment Factor (FAF), and so on. Ocean freight charges for cargo procured in the U.S. and European countries (applicable only for projects in education sector) are estimated case-by-case. On the basis of quotations from various forwarders, an estimate of US\$50 per freight ton was assumed for port charges, which include loading, unloading, storage, certificate of measurement and weight, and customs clearance. Necessary handling charges were added for super heavy cargo other than containers.

## 6.5.4 Inland Transport Costs

The inland transport costs were estimated as follows:

*Inland Transport Costs = Actual Transport Costs + Miscellaneous Charges*

The Study Team set standard transport costs from Kuwait to destinations in Iraq based on quotations from forwarders. Table 6.5.2 shows transport costs per 40' container and expected

transit time.

**Table 6.5.2 Standard Transport Cost and Transit Time from Kuwait to Iraq for the Cost Estimates**

No.	Governorate	City	Transport Cost per 40' Container (US\$)	Transit Time from Kuwait (day)
1	Dohuk	Dohuk	3,500	8
2	Erbil	Erbil	3,500	8
3	Sulaimaniya	Sulaimaniya	3,500	8
4	Ninevah	Mosul	3,500	8
5	Taamin	Kirkuk	3,500	7
6	Salahuddin	Tikrit	3,000	7
7		Samarrah	1,800	2
8	Diyala	Baqubah	1,900	4
9	Anbar	Ramadi	3,200	4
10		Falluja	3,200	4
11	Baghdad	Baghdad	3,200	4
12	Babil	Hilla	1,800	3
13	Karbala	Karbala	1,800	3
14	Wasit	Kut	3,000	4
15	Najaf	Najaf	1,800	2
16	Qadisiyah	Diwaniyah	1,600	3
17	Dhi Qar	Nasiriyah	1,800	4
18	Maisan	Amarah	1,800	3
19	Muthanna	Samawah	1,800	3
20	Basrah	Basrah	1,000	1

Source: Estimated by the Study Team based on quotations from forwarders.

The transit time was estimated based on the following assumptions:

- Cargo transport is limited only during daylight to avoid night transport (considering security)
- Delays due to various waiting times are expected, e.g. inspections at checkpoints, etc.

Required costs were estimated and added for special cargo transport, e.g., required size of trailers. The miscellaneous charges include loading, unloading, charges for heavy equipment, customs clearance charges, and extra charges particularly for container transport to Iraq, etc. For the miscellaneous charges, US\$50 was estimated per freight ton.

### 6.5.5 Cargo Insurance

The premium and the insured amount for the cargo insurance were estimated as follows:

$$Premium = \frac{(C + F)1.1R}{1 - 1.1R}$$

$$Insured Amount = \frac{1.1(C + F)}{1 - 1.1R}$$

Where: *C* = FOB Price, *F* = Transport cost including ocean and inland freight charges and cost for security escort, *R* = Insurance premium rate

The premium includes inland cargo insurance to each project site. The premium rates adopted the following rates (standard rate as at end of January 2004) when armed security guards,

authorized by the coalition force, escort cargo transport:

*Marine Rate = 0.6%*

*War & SRCC Rate = 0.525%*

### 6.5.6 Security Escort Costs

The security escort costs were estimated from standardized charges per day multiplied by the required transit time. The Study Team estimated the base rate of US\$1,500 (up to five trucks) per day based on quotations from security companies. The estimated costs were adjusted by transport amount and form of transportation.

### 6.5.7 Assumptions for Container Transport

Table 6.5.3 outlines dimension, floorage, inside cubic and maximum payload of a normal dry container:

**Table 6.5.3 Dimension, Floorage, Inside Cubic and Maximum Payload of Standard Dry Container**

	Dimension	Floorage	Inside Cubic	Maximum Payload
20 feet container	8' x 8' x 20' (2.44 m x 2.44 m x 6.10 m)	14 m <sup>3</sup>	31.4 m <sup>3</sup>	18,570 kg
40 feet container	8' x 8' x 40' (2.44 m x 2.44 m x 12.20 m)	28 m <sup>3</sup>	67.9 m <sup>3</sup>	20,410 kg

Source: Boeki Yougo Jiten (Dictionary for Trading Terms), Hakto-Shobo

Considering smooth devanning and to avoid damages during transportation, the Study Team assumed cargo was not piled inside containers. Therefore, 30 m<sup>3</sup> of maximum cargo volume per 40' container was assumed.

### 6.5.8 Reconstruction Levy in Iraq

After the declaration of the war was terminated in May 2003 and in accordance with the policy on promoting free trade by CPA, no customs duty is imposed in Iraq. CPA Order No.38, declared in September 2003, stipulated that a 5% reconstruction levy on imported commodities be imposed from January 1st, 2004. However, due to delays in its establishment the enforcement of the reconstruction levy was postponed until March 1st, 2004 by CPA Order No.47. The reconstruction levy had not been imposed when the Study Team was in Amman in the middle of March 2004. Its future therefore remains unclear although it would not be imposed on daily essentials including foods, clothes, and books, goods procured by CPA, and aid cargo.

## 6.6 Bidding Conditions Relevant to Cargo Transport

Options of bidding conditions including cargo transport for uncertain matters, which are expected for future Japanese aid projects for Iraq, are described in Chapter 7. It is recommended that the following conditions be added during bidding procedures to mitigate risks relevant to cargo transport:

- Limit transit time to avoid negative impacts on project schedules
- Stipulate quality of security escorts for cargo transport for safe and certain delivery
- Follow instructions from professional security information services, e.g. route, timing, and method of cargo transport
- Acquire proof of delivery (POD) based on reliable cargo inspection when cargo arrives at final destination

It is recommended that proposals for cargo transport should be evaluated in detail by specialists in terms of safety and certainty. If security in Iraq deteriorates drastically, it may become more

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difficult for bidders to take transport risks. In this case, cargo transport, cargo insurance and security escorts could be procured separately from the main contract or financial proposal as the costs of these items may change drastically depending on the security situation.

## **7. Procurement**



## **7. Procurement**

The study and analysis of the following areas were carried out during past 10 weeks since the beginning of mobilization to Amman, Jordan on 11th January 2004:

- Investigation of Consultants and Contractors who are active in Iraq.
- Present construction works related cost data in Iraq.
- Current general situation of Construction industry in Iraq
- Study on Procurement method
- Cost comparison between the construction works under the normal circumstances and Iraq Reconstruction Projects

Based on the above information, comprehensive study was made in order to achieve smooth procurement and implementation of the project under the present Iraq situation and restrictions on installation of works and supervision set forth by the Japanese Government.

### **7.1 Collection of Information on the Consultants and Contractors**

#### **7.1.1 List of Consultants and Contractor**

##### **(1) Consultants**

Information of the Iraq consultants or Iraq neighboring countries consultants who are currently active in Iraq or having offices in Iraq was obtained through the following routes:

- Through the Iraq Contractors who have office in Jordan
- List of Consultants obtained from sub-consultants
- Through internet Websites
- Introduction by the contractors obtained through the above routes.
- Self introduction by the consultants to the Team during the above process.

##### **(2) Contractors**

Information of the Iraq contractors or Iraq neighboring countries contractors who are currently active in Iraq or having offices in Iraq were obtained through the following routes:

- Through the Iraq Contractors who have office in Jordan
- List of Contractors obtained from CPA South
- List of Contractors obtained from sub-consultants
- Through internet Websites
- Introduction by the commercial section of the Embassy of Iraq neighboring countries in Jordan.
- Introduction by the Consultants obtained through the above routes.
- Self introduction by the Contractors to the Team during the above process.

Although update of the addresses and contact persons on the list of Consultants and Contractors have been conducted by telephone and E-mail, contacts were not made to those Consultants and Contractors without Websites or e-mail addresses.

Direct contact was made with 62 consultants/contractors in Amman and it was ascertained that CPA could mobilize 284 companies in accordance with list obtained from CPA. Currently contractors are categorized into 15 Grades in Iraq, and 25 consultants were found to be active in Iraq at present based on the investigation by the Sub-Consultants.

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50 Contractors in Grade-1 and Grade-2 will be the possible candidates for installation contractor for the Iraq Reconstruction Project.

### **7.1.2 Capability of the Local Consultants and Contractors**

The investigation of the Local Consultants and Contractors was conducted through direct interview and e-mail without visiting and inspecting the actual project sites designed or constructed by those Consultants or Contractors.

It is essential to select capable Consultants or installation sub-contractors as sub-consultant or sub-contractor in order to achieve smooth project implementation and completion of the Iraq Reconstruction Projects under the condition that no Japanese personnel should enter into Iraq for the supervision of the works.

The details of the Pre-qualification of the Installation Works Sub-contractor is described in clause 7.5.1, 2) hereinafter.

## **7.2 Cost Data**

The following construction related cost data in Iraq were obtained from the Iraqi contractors having their offices in Jordan:

- Wages in Iraq
- Hourly lease rates of construction equipment
- Cost data of construction materials
- Cost data of major construction work items
- Cost estimation of project security services based on the assumed project type, magnitude and construction period.

### **7.2.1 Analysis of the Obtained Cost Data**

As can be seen from the obtained cost data attached herewith, that there is a great difference between Contractor costs information given on the same items.

No written cost estimation of security services could be obtained from the security companies due to the reason that the security plan and security service cost will be depend on the project location and type of project, and also the security services cost information given to us from varies greatly between CPA registered foreign security companies and the Local Iraqi contractors.

As a result of analysis based on the interview with some security companies and the Iraqi contractors for the essential security measures during implementation of the project, security services costs can be categorized into two cases as follows:

- 1) Security team is organized by the local Contractor himself or sub-contract with the Local security companies

The local Contractor is well acquainted with current day to day Iraq security situation in each particular area. Therefore, security services costs estimation is relatively low. (Assumed project security services cost is US\$20,000- to US\$30,000-).

- 2) Project Security by the Foreign Security Company

Normally, the Foreign Security Companies will conduct site investigation and provide security plans prior to submission of security services costs estimation. Their verbal indication of security services costs varies and is high, as much as five to ten times the local security services costs.

It is obvious that there is a great difference between the costs information on the same materials and work items given by the Contractors. It is therefore decided to use the cost data of wages

only for the computation of the Preliminary Project Cost Estimation.

It is most realistic to carry out the Remote Control Design Supervision and Remote Control Construction Supervision from Amman, Jordan from the accessibility point of view to and from Iraq and security as observed during the Study period.

It is therefore decided to utilize the present cost data in Amman for establishment of the Remote Control Design and Construction Supervision assuming that the Remote Control Design and Construction Supervision office will be established in Amman during the project implementation period.

### **7.2.2 Fluctuation of the Exchange rate between Iraq Dinar (ID) and US Dollar**

The exchange rate between Iraq Dinar (ID) and US\$ has been fluctuating considerably recently. The ID exchange rate was ID 1,400- to 1,500- against US\$1- at the early stage of the Iraq Reconstruction Projects Study, around 10<sup>th</sup> January 2004, but became 1,000- ID at the end of the Study. It is believed that this trend will continue for some time based on the anticipation of the Iraq contractors. Also, it is very difficult to forecast future currency fluctuation. It is therefore important that cost fluctuation of the local purchased construction materials and labor costs should be reconsidered at the time of implementation of the Iraq Reconstruction Projects.

The cost fluctuation is not considered on the Preliminary Project Cost Estimation due to the above mentioned reasons, but the following currency exchange rates were used for computation of the Preliminary Project Cost Estimation:

- 1) 1US\$ = ID 1,400
- 2) 1US\$ = ¥133.15

### **7.3 Current Situation of Iraq Construction Industry in General**

The following information was obtained at the same time of obtaining of the Cost Data:

- Copy of actual Contract for equipment supply executed in Iraq recently
- Copy of the Construction Contract with the other International Donors.
- The Contractor's All Risks Insurance and its conditions for the project executed in Iraq recently.
- The latest mandatory Taxes and Duties in Iraq

#### **7.3.1 Construction Contract**

The Standard Conditions of Contract (1987 Edition), which are FIDC based, are used for large-scale projects even now except where particular Conditions of Contract needs to be applied for the individual project based on the feedback from the several Iraqi Contractors

Copies of the small Rehabilitation Construction Contract with the other International Donors and the Red Cross were obtained, but it may not suit for the Iraq Reconstruction Projects

Obtained and studied the CPA related Instructions to Bidders and Conditions of Contract etc. downloaded from CPA Website ([www.cpa-iraq.org](http://www.cpa-iraq.org)).

#### **7.3.2 The Contractor's All Risks Insurance**

Having examined the above copies of Conditions of Contract, no details of the Contractor's All Risks Insurance are provided except Labors' compensation clauses. Generally it is the Contractor's responsibilities to bear the All Risks during the project implementation.

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## **7.4 Preliminary Project Cost Estimation**

### **7.4.1 Project Cost Estimation Method**

The Preliminary Project Cost Estimation for the Iraq Reconstruction Projects is made based on the method of cost estimates from several Contractor/Suppliers for the Power and Water/Environmental Sector Projects and Cost build-up method for the Medical and Education Sector Projects.

### **7.4.2 Additional Cost Factors to the Preliminary Project Cost Estimation**

A distinguishing characteristic of the Iraq Reconstruction Projects is that no Japanese Consultant's and Contractor's personnel are permitted to enter into Iraq to carry out their duties such as supervision, progress and quality control on the Project Site during implementation of the Projects due to the current security situation in Iraq. Projects will therefore incur allowable additional expenses and costs for design and design supervision services, equipment transportation, equipment installation works etc. and remote control of the project from the outside of Iraq as compared to the same type and magnitude of project implemented under the normal circumstances.

## **7.5 Iraq Reconstruction Projects Implementation**

In consideration of perceptibly of the Iraq Reconstruction Projects, it is important to commence at earliest possible time and have smooth implementation of the projects through fair and competitive bidding processes. The study was made to identify the most suitable procurement procedure for each type of project with consideration of those factors.

### **7.5.1 Selection of the Suppliers / Contractors / Trade Houses / Manufacturers**

#### **(1) Bidding Method**

Generally all the Suppliers / Contractors / Trade Houses / Manufacturers (herein after referred to as the Contractor) for the Iraq Reconstruction Projects will be selected through Competitive Bid method. The presumed Bidding Methods for the Iraq Reconstruction Projects are described hereunder.

##### **1) Nominated Contract**

The Nominated Contract is for the work recognized by the consultants that would be clearly harmful for the function of existing equipment if the work would be conducted without the same contractor which has close connection for the utilities established in the past for the facility project including equipment.

##### **2) Competitive Bidding**

All other projects except mentioned above.

#### **(2) Prequalification of the Local Contractors**

As mentioned in Clause 7.1.2 above, it is essential to select capable local installation Contractors since all installation works shall be carried out by the local Contractors without Japanese personnel entering into Iraq for supervision of the works. It is recommended to carry out prequalification for the local Contractors.

The prequalification of the local sub-contractor shall be conducted during bid preparation by the Bidders and the results of the prequalification of local sub-contractor notified to the Bidders prior to their bid submission. In the event of disqualification of the local sub-contractor proposed by the Bidder, the Bidder shall then be required to re-submit prequalification of other local sub-contractor for re-prequalification evaluation prior to bid submission.

(3) Transportation Plan

The detailed transportation plan of the equipment shall be submitted by the Bidders and evaluated by the Client since timely delivery of equipment in good condition to the Site is one of the most important parts of the Iraq Reconstruction Projects.

(4) Security Plan

Considering the present security situation in Iraq, it is important to evaluate the proposed security plan during installation works since security measures are of utmost importance for the project as well as requiring high cost in the project budget. The Client is also required to appoint a security specialist for the evaluation of the adequacy of the Bidder's proposed security plan.

Particular attention on the security plans should be made for those projects which are implemented simultaneously at the different locations such as following Projects:

1) Health Sector

- 13 City General Hospital Rehabilitation Plan, Phase I
- 13 City General Hospital Rehabilitation Plan, Phase II
- 13 City General Hospital Rehabilitation Plan, Phase III

2) Energy/Electricity Sector

- Urgent Installation of Mobile Substations

3) Water Supply and Sanitation Sector

- Installation of Compact Water Treatment Units (Compact Units) in Baghdad.
- Installation of Compact Water Treatment Units (Compact Units) and RO Units for Four States in Southern Iraq.
- Rehabilitation of Existing Soil Water Pumping Station

(5) Training Plan for the local installation Engineers and counterpart operation and maintenance Engineers.

Training of the local installation Engineers and counterpart operation & maintenance Engineers should be carried out either in Japan or third countries for the Iraq Reconstruction Projects instead of training at job site for the normal circumstances.

It is necessary to evaluate the Bidder's proposed training plan for the local installation Engineers and counterpart operation and maintenance Engineers during the bidding stage.

(6) Remote Control Supervision Plan

It is necessary to evaluate the Bidder's proposed remote control supervision plan in his strategy on how to control the technical issues, progress and quality etc. from Iraq neighboring countries without Japanese supervision personnel entering into Iraq.

(7) Program

The integrated program indicating all activities of the project such as equipment approval process, manufacturing, transportation, installation works, training of counterpart operation and maintenance engineers and test/commissioning etc. shall be evaluated during the bidding stage.

(8) Bid Price

It is anticipated that there may not be a big difference in the bid price of the equipment between the Bidders, but the bid price of those items affected by the Special Conditions due to uncertainty of the present Iraq situation will vary greatly depending on the Bidder's opinion and company policies.

Those uncertain factors are as follows:

- 
- Price of transportation insurance will be differed for the different transportation routes.
  - Price for Security/protection during inland transport
  - Price for Security/protection of the job site during installation works.

It is therefore recommended to breakdown the bid price categories into the following elements:

- Equipment costs
- Marine transport cost
- Inland transport cost with transportation insurance and security cost
- Installation cost with cost for security / protection of the job site.
- Cost for remote control supervision
- Cost for training of the local installation Engineers and counterpart operation & maintenance Engineers

(9) Study on procurement method for early commencement of the project

1) Contract with Provisional Sum

It is recommended to utilize the Provisional Sum under the budgetary amount of uncertain site work items; then the estimated amount of the Named Supplier can be specified in the Bill of Quantities as a Provisional Sum in order to minimize the period for uncertain site works design and to expedite the manufacturing of the equipment. The Provisional Sum will be settled when design of uncertain site work items and/or contract amount of the Named Supplier is finalized at later stage.

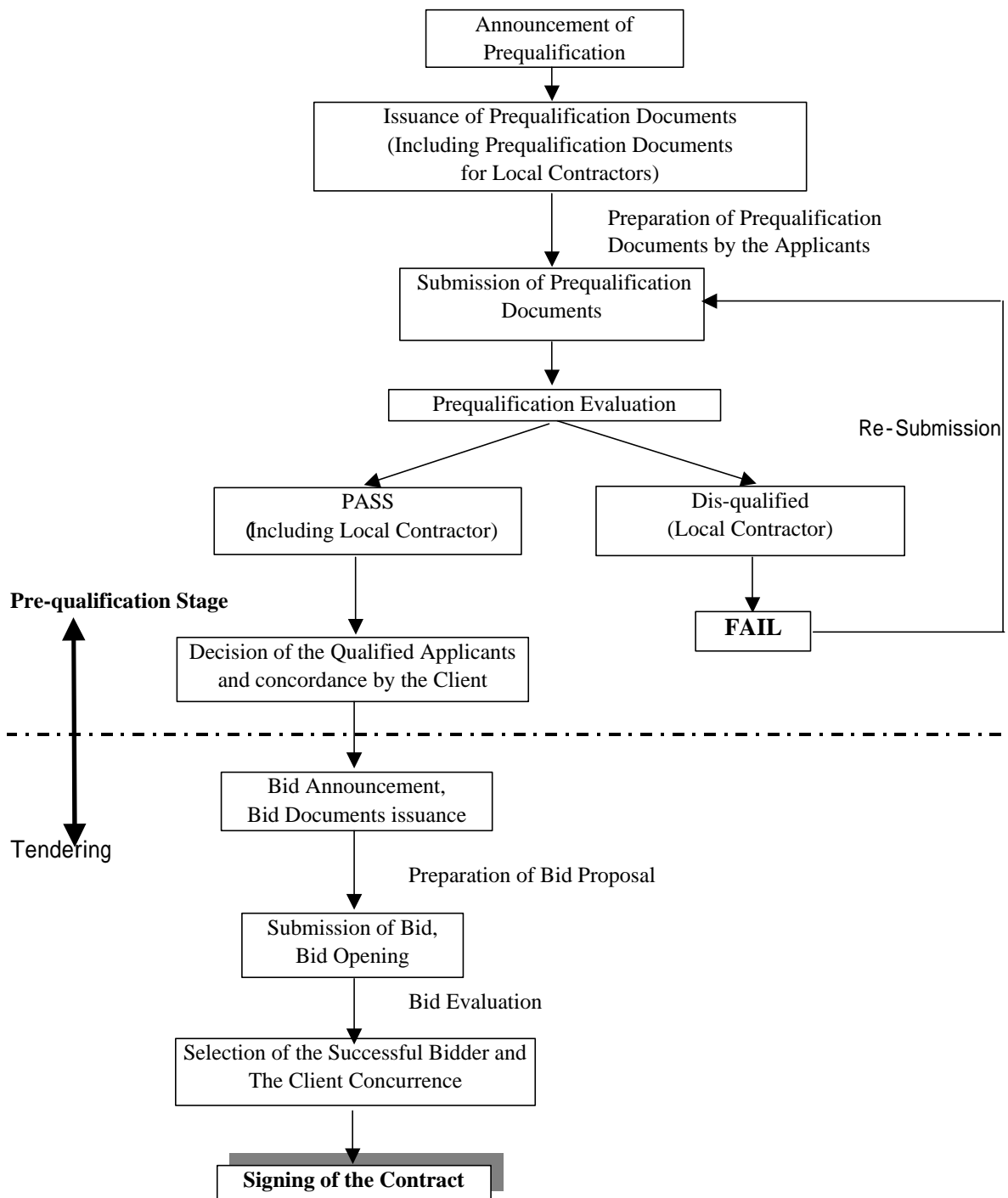
2) Fixed Lump Sum Contract with partially re-measurable

The method of Fixed Lump Sum Contract with partially re-measurable will be beneficial to minimize the bid period and early commencement of the work for the projects with long lead time required for supply of equipment and including demolition of the existing facilities. This method is also suitable for the project which may change in shape and weight from the original designed equipment as a result of the bid, and may thus be required to be re-designed. This method can be adopted for the project of Hartha Gas Turbine Expansion Plan and Urgent Rehabilitation of Taji Gas Turbine Power Plant (Phase 1), etc.

(10) Procurement Process Chart and Alternate Proposal

1) Procurement Process Chart

The following conceptual chart shows the procurement procedure described above.



Note: Flow is based on the Japanese Bidder and JV or sub-contract with Iraq or Iraq neighboring countries contractors

**Figure 7.5.1 Prequalification and Bidding Flow**

## 2) Alternative Proposal

The bid documents shall be prepared with incorporation of the above factors 2) to 8) with consideration of the time constraints and conditions of the Iraq Reconstruction Projects, and issued instructions to the Bidders.

However, a request for bidders to submit an alternate proposal may be beneficial so that

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bidders could propose their bid in conformity with the following conditions:

- An alternate proposal that meets all conditions and requirements stated in the bid documents.
- Total project implementation period is less than Client's anticipated period.
- The alternate proposal is better than those conditions and requirements set forth in the bid documents by utilizing bidder's knowledge and resources.
- The alternate proposal bid price is lower than the original bid price.

### **7.5.2 Bid Evaluation**

It is recommended to apply the Two Stage Bid Evaluation method considering the above factors. The successful Bidder shall be selected through the following process and conditions:

- 1) Stage -1: Evaluate all technical and contractual proposals such as equipment specifications, transportation plan, security plan, installation plan, training plan, program and remote control supervision plan to comply with the bid requirements.
- 2) Stage - 2: Open the bids, which are considered to be qualified technically, and carry out detail price evaluation of each cost component. Then select the lowest bid which fully satisfies all the requirements.



**8.**  
**Notes on Implementation of**  
**the Projects**

## **8. Notes on Implementation of the Projects**

### **8.1 Formulation of Projects**

- 1) For the implementation of the projects, the scopes of rehabilitation can be adjusted, although the situation of the existing conditions of equipment and machineries are already understood for the rehabilitation of projects.
- 2) The information and data from other information sources can be collected directly and indirectly to avoid duplication. It is possible to clear the duplication of the projects during the procedures of the project implementation.
- 3) The scope of works are fluid and the alteration of the cost and period cannot be predicted although shipping and transportation, and procurement are the essential conditions. Thus, it is necessary to re-examine them.

### **8.2 Detailed Design and Tendering**

- 1) This study is the intermediate step of project formulation and basic design stage. And thus it is necessary to proceed to detailed design for concept of the completion of facilities because many installation works are complex projects for equipment and materials. Therefore, the detailed design stage is definitely necessary including the alteration of the project contents.
- 2) Since it is significant to shorten the design and tender period for the implementation of projects in the early stage, the consultants who have full detailed knowledge about grant aid in JICA is required.
- 3) For some sectors, especially for Electricity, the installation will definitely be completed by the summer of 2005. Therefore, these projects should have priority and there should be rapid implementation to simplify the procedures as much as possible.
- 4) Candidate projects were formulated by the sector. Since the Japanese consultants are not to allowed into Iraq, contact with the organizations and project bodies in Iraq is also limited. Therefore, it is necessary to introduce the project management system (PMS) to unify the management for effective and smooth implementation.

### **8.3 Procurement and Installation**

- 1) It is possible that the implementation period will become longer due to security problems, alteration for the shipping and inland transportation, delay of the installation work, etc.
- 2) Even though these projects are grant aid, they will proceed with different procedure from the normal ones due to the various restrictions and uncertain conditions. It is necessary to have supervision of the work by Japanese consultants who have experience with JICA grant aid projects, since it is an important element to supervise the Japanese contractors smoothly although many difficulties are expected.
- 3) For many of projects, it is a premise that the consultants in Iraq or in the 3rd countries will do the detailed design and supervision by remote-control of the Japanese consultants. Therefore, pre-qualification of the consultants is needed to judge the capability of sub-consultants for the detailed design and site supervision.
- 4) It is premise that the contractor in Iraq or in a 3rd country will perform remote-controlled installation from the Japanese contractor. Therefore, pre-qualification of the contractor is needed to judge the capability of sub-contractor who will be working on the installation of equipment.

## **Appendix-1**

# **LongList of the Proposed Projects**

**Propose Projects in Japan and Amman (Long-list)**

Serial No.	Sector No.	Sector	Project Name	Project Site	Executing Agency	Project Profile	Project Costs (x mil. Yen)	Implementation Period
<b>Electricity</b>								
1	E-1	Electricity (Rehabilit. of Generation)	Urgent Rehabilitation of Taji Gas Turbine Power Plant	Taji	MOE	<ul style="list-style-type: none"> <li>Existing gas turbine generator unit of No. 5 will be replaced with new unit.</li> <li>Existing gas turbine generator units of No. 6 &amp; No. 7 will be rehabilitated.</li> </ul>	48	18 months
2	E-2	Electricity (Rehabilit. of Generation)	Urgent Rehabilitation of Mosul Gas Turbine Power Plant	Mosul	MOE	Gas turbine generator units of No. 1 to No. 4 will be replaced with new units.	84	6 to 10 months
3	E-3	Electricity (Rehabilit. of Generation)	Urgent Rehabilitation Plan of Mosul Hydraulic No.1 Power Plant	Mosul	MOE	Replacement of spare parts for water turbines and generators (187.5MW x 4), such as bearings, exlitors, governors, stator coils, turbine runner, etc.	50	24-39 months for turbine runner 6 months (FOB) for Generator Coil 6 month
4	E-4	Electricity (Rehabilit. of Generation)	Urgent Rehabilitation of No. 2 unit of Almusabb Thermal Power Plant	Almusabb	MOE	<ul style="list-style-type: none"> <li>Upgrade the No.2 unit output (100MW to 200MW)</li> <li>Overhaul the boiler, plant control, auxiliary equipment and supply of the spare part</li> </ul>	51	
5	E-5	Electricity (Rehabilit. of Generation)	Urgent Supply of Spare Parts for Pumping System at Almusabb Thermal Power Plant	Almusabb	MOE	Provision of spare parts for pumping system for circulating water system	20	8 months (FOB)
6	E-6	Electricity (Rehabilit. of Generation)	Urgent Supply of Spare Parts for Steam Turbine Units No.1 and No.4 at Halitha Thermal Power Plant	Halitha	MOE	Provision of spare parts for No.1 and No.4 units	21	8 months (FOB)
7	E-7	Electricity (New Generation)	Urgent Installation of Barge Mounted Power Plant(s)	Port in South Iraq (Installation sites: Khor Al-Zubair/Umm Qasr)	MOE	<ul style="list-style-type: none"> <li>Barge power plant : 60MW x 3 unit(s)</li> <li>132KV transmission line between the barge power plant and 132 substation</li> </ul>	110-120 (1 unit)	18 months
8	E-8	Electricity (New Generation)	Urgent Installation of Barge Mounted Power Plant(s)	Not decided.	MOE	Types of proposed Barge Power Plant: <ul style="list-style-type: none"> <li>20, 60, 150MW by MHI</li> <li>40, 45, 80MW by IHI</li> </ul>	36, 75, 150 (MHI) 25, 30, 40 (IHI)	14, 17, 20 months (MHI) 15-18months (IHI)
9	E-9	Electricity (New Generation)	Urgent Supply of Container Type Mobile Power Plants	Whole Iraq	MOE	<ul style="list-style-type: none"> <li>1000KW diesel generators 108units (New ones 82 units and new ones as used 26 units)</li> <li>1250KW diesel generators 105units (new ones 79 units and new ones as used 26 units)</li> <li>1000KW gas generators 6 units(new ones as used)</li> <li>22800KW dual type generators 9</li> </ul>	438	under study
10	E-10	Electricity (New Generation)	Urgent Supply of Mobile Generator Unit	Whole Country	MOE	<ul style="list-style-type: none"> <li>120 - 750KVA Truck Mounted Type Diesel Engine Generator Set</li> <li>60 - 250KVA Truck Mounted Type Diesel Engine Generator Set</li> </ul>	256	6 month: first shipment 14 month: final shipment
11	E-11	Electricity (New Generation)	Urgent Supply of Mobile Gas Turbine Power Plants and Substations	Whole Iraq	MOE	Mobile type 15-25MW gas turbine generators and 132KV substation facilities 8 to 10 units	200	10 months (FOB)
12	E-12	Electricity (New Generation)	Urgent Supply of Mobile Generator Units	Bagdad/Mosul/Basra	Ministry of Electricity (MOE)	Mobile generators for Bagdad: 20 units, *Mobile generators for Mosul: 7 units, *Mobile generators for Basra: 6 units (Output : 500KW to 4000KW each)	128	11 months
13	E-13	Electricity (New Generation)	Extension of Gas Turbine Generator Unit in Hartha Power Plant and Rehabilitation of Grid Substations	Hartha	MOE	<ul style="list-style-type: none"> <li>A new gas turbine generator as unit #5 (Output 135MW)</li> <li>Rehabilitation of substation - Hamar Tank Fram 132KV S/S and Tuba Tank Fram 132KV S/S Stations )</li> </ul>	148	19 months

14	E-14	Electricity (New Generation)	Construction of Diesel Engine Power Plant in North Iraq	Erbil, Dohuk and Sulaimaniya	MOE	29MW Diesel Power Plant x 3 Places	90	10 months (FOB)
15	E-15	Electricity (New Generation)	Supply of Small (30-50kVA) Diesel Generators in North Iraq	Erbil and Dohuk	MOE	5small diesel power plants will be supplied to 200 villages not-electrified.	20	6-12 months
16	E-16	Electricity (New Generation)	Construction of Micro Hydro Power Plants in non-electrified villages in North Iraq	Non electrified villages in Erbil, Dohuk and Sulaimaniya	MOE	Construction of several micro hydro power plants in no electrified villages in north Iraq	30	6-12 months
17	E-17	Electricity (New Generation)	Construction of Erbil Gas Turbine Power Plant	Erbil	MOE	Construction of Erbil new Gas Turbine 50MW Power Plant (under study)	55	20 months
18	E-18	Electricity (New Generation)	Construction of Dohuk Gas Turbine Power Plant	Dohuk	MOE	Construction of Dohuk new Gas Turbine 50MW Power Plant (under study)	55	20 months
19	E-19	Electricity (New Generation)	Construction of Diesel Power Plants	Samawa, Diala	MOE	Construction of new two 60MW Diesel Power Plants	120	24 months
20	E-20	Electricity (Transmission/ Substation)	Urgent Installation of Mobile Substations in the North and Middle of Iraq	North and Middle Iraq	MOE	North Iraq :132/33KV 25MVA 10 units Middle Iraq :132/11KV 25MVA 20 units and 33/11KV 5MVA 30 units	98	10 months (FOB)
21	E-21	Electricity (Transmission/ Substation)	Urgent Installation of Mobile Substations in the South of Iraq	South Iraq	MOE	+132/33KV 15MVA 5 units +132/11KV 25MVA 5 units	20	8 months (FOB)
22	E-22	Electricity (Transmission/ Substation)	Urgent Rehabilitation of Distribution Substations in the South of Iraq	North and Middle Iraq	MOE	Distribution substations -33/11KV 10MVA x 2units 5 stations, -33/11KV 25MVA x 2units 5 stations	53	24 months
23	E-23	Electricity (Transmission/ Substation)	Urgent Rehabilitation of Distribution Substations in the North and Middle of Iraq	Musayab	MOE	1280MW (320MW x 4 unit) Thermal Power Plant upgrade the No.2 unit output (100MW to 200MW) Overhaul the boiler, plant control, auxiliary equipment and supply of the spare part	51	6 months
24	E-24	Electricity (Transmission/ Substation)	Urgent Rehabilitation for Substations in Kirkuk Region	Kirkuk	MOE	Replace Stationary Substation with 132/33/11KV and 33/11KV mobile substation: -132/33/11KV, 25MVA x 3 (3-place) Kirkuk North, Kirkuk South and Kirkuk Industrial, -33/11KV, 15MVA x 4 (3-place) Al Naser, Al Qaddesia and Al Rasheed, -33/11KV, 15MVA x 2 (9-plac	89	8 months
25	E-25	Electricity (Transmission/ Substation)	Urgent Rehabilitation for Substations in Basrah	Basrah	MOE	Outline of the Substation 9-132/6.3KV, 16MVA Substation -10-132/33KV, 63MVA Substation	30	-
26	E-26	Electricity (Transmission/ Substation)	Supply of Sectional Steel Poles	Whole Iraq	MOE	Provision of right weight type steel poles for distribution line	1.8 (for 11KV, 500km )	10 months (for 11KV, 500km )
27	E-27	Electricity (Transmission/ Substation)	Supply of Distribution Line Materials in North Iraq	Erbil, Dohuk and Sulaimaniya	MOE	Provision of distribution materials for construction of distribution lines in the length of 100km medium voltage and 400 km low voltage	30	6-12 months (FOB)
28	E-28	Electricity (Others)	Rehabilitation of Telecommunication System in Iraq	Whole Iraq	MOE	Provision of OPGW (24 cores) in length of 3700km Equipment for microwave telecommunication system	65	24-36 months
29	E-29	Electricity (Others)	Provision of Vehicles for Ministry of Electricity	Main power station in whole country	MOE	-Supply of the Passenger and Construction Vehicles 40- Mini Bus (15 Seater), 40- Mini Bus (25 Seater), 100- Station Wagon (4x4), 200- Pick up (4x4, DC), 100- Pick up (4x2, DC), 30- Forklift (3 ton), 30- Forklift (10 ton), 10- Crane (80 ton), 40- Crane (20 ton)	58	2-4 month
30	E-30	Electricity (Others)	Rehabilitation of Central Workshop at Taji	Taji	MOE		10	12 months

31	E-31	Electricity (Others)	Urgent Rehabilitation Plan for Transformer Production Line of Dila Transformer Factory	Dila	Ministry of Industry and Minerals (MOIM)	Rehabilitate the Power and Distribution Transformer Production Machine	130	24 month
32	E-32	Electricity (Others)	Rehabilitation of Crude Oil Production Facilities in East Baghdad	East Baghdad	MOE and Ministry of Oil	Rehabilitation of Crude Oil Production Facilities in East Baghdad Oilfield for stable oil supply to power plants, including Taji.	48	12 months
<b>Water/Sanitation</b>								
33	W/S-1	Water Supply/Sanitation	Emergency Supply of Water Supply Equipment in Baghdad	Baghdad Metropolitan Area ( 2-Area of Karkh/Rusafa ) and Neighboring Area	Baghdad Mayorality (BM)	Containerized Water Purifier Unit(300m3/d)×10 sets and (100m3/d)×20sets + Water Tanker(15m3)×100cars and (8m3)×120cars	41.9	Not mentioned
34	W/S-2	Water Supply/Sanitation	Supply of Compact Water Supply Units for Rasafa and Karkh Areas in Baghdad	Baghdad Metropolitan Area	BM	Compact Unit ( Mixing, Flocculation, Sedimentation, Filtration and Chlorination ) 180Units 1 Unit:4.500m3/d, Total810.000m3/d, ( Saba Nissan:50Units, Sadr City:25Units, Wabba:15Units, Jaderia:15Units, Tanuz:15Units, Al-Kadhima:50Units, Other Suburbs Area:10Units)	287 ( Excluding costs for Piping, Installation, Chemicals, etc. )	Not mentioned (3 ~ 8months by hearing)
35	W/S-3	Water Supply/Sanitation	Supply of Compact Water Supply Units and RO Units for three States in Southern Iraq, Missan, Thiqr and Basrah	Basrah, Thiqr and Missan	Ministry of Municipalities and Public Works and Public Works (MMPW), Each Governorate of Basrah, Thiqr and Missan Application form from the Ministry and Governorates was submitted	Replacement of existing facilities and additional new facilities : Compact Units 72units ( 200m3/hr : Mixing, Flocculation, Sedimentation, Filtration and Chlorination ) , RO Units ( 29units ( 50m3/hr ) x 4units ( 5m3/hr ) ) , intake Pumps 44sets,Booster Pumps 50sets, Transmission Pumps 1,160sets	270.6(Excluding piping from intake pumps to reservoir, installation, civil & architectural Costs.)	Not mentioned (3 ~ 8months by hearing)
36	W/S-4	Water Supply/Sanitation	Supply of Emergency Water Purifier Unit for Ministry of Water Resource	Not specified	Not Specified, (Implementation Agency will be vary depend on the location of the each installation site.)	Containerized Water Purifier Unit(300m3/d) x 30Sets Water Purifier Unit(48 ~ 58m3/d) x 250Sets	19.5 ( Cost of generator, intake pump, chemicals, spar parts is unidentified. )	3 ~ 4 months (FOB)
37	W/S-5	Water Supply/Sanitation	Emergency Supply of Water Treatment Equipment	Each area in Baghdad, Basrah, Nasiriyah, Samawah, Najaf, Kut, Hillia, Anaaarah, Karbala, Baqubah, Balji, Kirkuk,	Ministry of Interior and Public Works (MOIPW) and Ministry of Science and Technology (MOST)	Containerized RO Water Treatment Unit (1,200m3/d) x 25Sets	40 ( Cost of generator, intake pump, chemicals, spar parts is unidentified. )	Not mentioned
38	W/S-6	Water Supply/Sanitation	Project for Emergency Water Supply in Baghdad and Basrah	Baghdad, Basrah	BM, Water Dept. and Basrah City Water Dept.	Baghdad City (Population 3.9 ml) -Water Tank Truck x 250units, -Well Drilling Machine and Supporting Vehicles x 1lot Basrah City (Population 0.43 ml) -Water Tank Truck x 50units, -Well Drilling Machine and Supporting Vehicles x 1lot	46 ( Cost of generator, intake pump, chemicals, spar parts is unidentified. )	4 ~ 6months ( FOB)
39	W/S-7	Water Supply/Sanitation	Emergency Project for Reconstruction of 3 Cities in Kurdistan Governorate (Main 3 Cities/Erbil, Sulaymaniyah, Dahuk)	Main 3 municipalities ( Erbil, Sulaymaniyah, Dahuk ) in Kurdistan Regional Governorate	Kurdistan Regional Governorates	For Erbil ( Population 1.31 ml ) , Sulaymaniyah ( Population 0.7 ml ) and Dahuk ( Population 0.78 ml ) Water Tank Truck(10m3) 30units, Well Drilling Machine and Supporting Vehicles3lots, Mobile Wastewater Treatment (10m3)26units Supply equipment for Waste disposal	Total 335 ( Water Tank Truck 26, Well Drilling Machine and Supporting Vehicles 15, Mobile Waste Water Treatment 4 , Equipment for Waste Disposal 60, and others 230 )	4 ~ 6months(FOB)
						Ambulance with spare parts and accessories 70units,Medical Equipment for 15 Hospitals,Diesel Generator for 800villages and 40,000 houses, Large Bus for Passenger 300 unit, Medium Bus for Passenger 100 units and Maintenance Equipment and Tools 3 lots		3 ~ 8months(FOB)

40	W/S-8	Water Supply/Sanitation	Emergency Project for Potable Water Supply	Suburban area of 20 major cities in Iraq (names of cities are not specified)	Not Specified. (Implementation Agency will be vary depend on the location of the each installation site.)	1 System/Area (Containerized Membrane Type Water Purifier Unit(150m3/d : 8hr/d opration line) + Water Tank Truck(14m3x3units)x20 Areas	50 ( Including costs for intake pumps, generators and membrane (replacement of every half year), disinfectants and fuel for 2years)	6months ( FOB)
41	W/S-9	Water Supply/Sanitation	Emergency Project for Groundwater Supply System	25 Major Cities in Iraq	Not Specified. (Implementation Agency will be vary depend on the location of the each installation site.)	Served Population 500Villages, Total25 Villages -Containerized Well Drilling Machine x 2sets, -Water Tank Truck x 1unit, -Fuel Vehicle x 1unitl, -Crane x 2units, -Geotechnical Investigation and Testing Machine x 1set, -Spare Parts x 1lot, -Casing Screen x 1set, -Water Tank(12.5m3) x 50sets, -Submerged Pumps (solar type) x 50sets, Pick-up Truck x 4 sets	13	Not mentioned
42	W/S-10	Water Supply/Sanitation	Emergency Project for Potable Water Supply	Suburban area of 20 major cities in Iraq (names of cities are not specified)	Not Specified. (Implementation Agency will be vary depend on the location of the each installation site.)	1 System/Area (Containerized Membrane Type Water Purifier Unit(150m3/d : 8hr/d opration line) + Water Tank Truck(14m3x3units)x20 Areas	50 ( Including costs for intake pumps, generators and membrane (replacement of every half year), disinfectants and fuel for 2years)	6months ( FOB)
43	W/S-11	Water Supply/Sanitation	Supply of Mobile Water Treatment Units for Baghdad, Mosul and Basrah	Baghdad, Mosul and Basrah	Baghdad, Mosul and Basrah Mayrally	Baghdad ( Water Purifier Unit(50m3/d)40sets,Water Tank Truck(10m3)200units, spare parts for repair ) Mosul ( Water Purifier Unit(50m3/d)14sets,Water Tank Truck(10m3)70sets, spare parts for repair ) Basrah ( Water Purifier Unit(50m3/d)12sets,Water Tank Truck(10m3)60sets, spare parts for repair )	Baghdad 57.5, Mosul 20.3, Basurah 17.5, Total 95.3 (Costs for disinfectant is unidentified.)	12months (4 ~ 5 months for the 1st shipping in case of separate shipping is approved)
44	W/S-12	Water Supply/Sanitation	Supply of Compact Water Supply Units for Rasafa and Karth Areas in Baghdad	Baghdad Metropolitan Area	BM	Compact Unit ( Mixing, Flocculation, Sedimentation, Filtration and Chormation ) 180Units 1 Unit:4.500m3/d, Total810.000m3/d ( Saba Nissan:50Units,, Sadr City:25Units, Waihb:15Units, Jaderia:15Units, Tamuz:15Units, Al-Kadhmlia:50Units, Other Suburbs Area:10Units)	287 ( Excluding costs for Piping, Installation, Chemicals, etc. )	Not mentioned (3 ~ 8months by hearing)
45	W/S-13	Water Supply/Sanitation	Emergency Project for Potable Water Supply	100 major cities in Iraq	Not Specified. (Implementation Agency will be vary depend on the location of the each installation site.)	Served Population 500Villages, Total 100Villages Containerized RO Water Purifier(25m3/d)100sets Stainless Steel Pipe with Flange (bolts&nuts, accessories)200km(2km/village)	67	Not mentioned
46	W/S-14	Water Supply/Sanitation	Urgent Project for Provision of Sewerage Equipment for Baghdad City	Baghdad	BM	Baghdad city is suffering from unsanitary inundation due to malfunction of trunk sewers. The project aims to improve unsanitary conditions by supplying potable equipment to remove stagnant sewage. The supplied equipment can be used for maintenance work of the trunk sewers after the reconstruction of the sewerage system. Equipment to be Supplied: Cleaning vehicles, Vacuum vehicles, Jet Cleaners, etc.	40	About 6 months
47	W/S-15	Water Supply/Sanitation	Urgent Project for the Rehabilitation of the Pumping Stations of Baghdad City	Baghdad	BM	Rehabilitation of 8 pumping stations of Right Bank Sewerage System.	174	
48	W/S-16	Water Supply/Sanitation	Expansion of Karth Wastewater Treatment Plant	Baghdad	BM	Reportedly the existing Karth WWTP with treatment capacity of 400,000m3/day, will be rehabilitated by USAID. The project aims to expand the capacity by 200,000m3/day to cope with the increased sewage amount. Expansion plan basically follows the Master Plan 1984.	180	
49	W/S-17	Water Supply/Sanitation	Urgent project for the rehabilitation of Pumping stations in P and N trunk mains.	Baghdad	BM	Rehabilitation of pumping stations in P and N trunk mains constructed between 1980 and 1985. P and N trunk mains are major parts of the Right Bank Sewerage System. < P5 > 900/600mm each 1, < P2 > 900/700/400mm each 2, < N3 > 900/400mm each 1, < N2 > 900mm each 2, < PN > 600mm each 2 *Including duct collectors, generators and control panels	45	14 months

50	W/S-18	Water Supply/Sanitation	Urgent Project for the construction of Temporary Sewage Treatment Facilities in PN pumping station	Baghdad	BM	Wastewater collected to PN pumping station is currently discharged to the river without treatment due to malfunction of the pumping station. The project aims to construct a temporary treatment facilities (aerated oxidation pond) to reduce sewage discharge to the river. The oxidation pond can be used as an equalization reservoir after rehabilitation of the existing WWTP. Facilities -5000m3 of sheet covered pond, - Inlet and outlet gates, -Aeration equipment	25	12 months	
51	W/S-19	Water Supply/Sanitation	Rehabilitation of Karkh WWTP	Baghdad	BM	Rehabilitation of Karkh WWTP	136	24 months	
52	W/S-20	Water Supply/Sanitation	Rehabilitation of Hume pipe factory	Baghdad	BM	Reconstruction of Hume pipe factory.	20	12 months	
53	W/S-21	Water Supply/Sanitation	Master Plan Study for Sewerage development in Baghdad west bank area and construction of sewerage system	Baghdad	BM	Construction of new sewerage system by reviewing the existing master plan formulated in 1984.	MP: 500 Construction 100,000	MP: 1 year Construction 5 years	
54	W/S-22	Water Supply/Sanitation	Project for the construction WWTP in Basra	Basra	MOIPW	WWTP was constructed in 1980 in Basra. However, the plant does not function due to failure of maintenance works, resulting discharge of not treated sewage (300,000m3/day) to the river. The Project aims to rehabilitate the facilities to revitalize the performance.	46		
55	W/S-23	Water Supply/Sanitation	Expansion of Karkh Wastewater Treatment Plant	Baghdad	BM	Reportedly the existing Karkh WWTP with treatment capacity of 400,000m3/day, will be rehabilitated by USAID. The project aims to expand the capacity by 200,000m3/day to cope with the increased sewage amount. Expansion plan basically follows the Master Plan 1984.	180		
56	W/S-24	Water Supply/Sanitation	Urgent Project of the provision of equipment for garbage collection and open dumping for major cities in Iraq	Baghdad, Basra, Mosul, Atbil, Samawah, Najaf and Karbal	BM, Ministry of Municipalities & Public Works	The projects aims to revitalize solid waste management in major cities by the provision of equipment.	120	6 months	
57	W/S-25	Water Supply/Sanitation	Urgent Project of the provision of equipment for garbage collection and open dumping for major cities in Iraq	Major cities in Iraq	Not Specified, (Implementation Agency will be vary depend on the location of the each installation site.)	The projects aims to revitalize solid waste management in major cities by the provision of equipment.	40-50	6 months	
58	W/S-26	Water Supply/Sanitation	Urgent Project of the provision of equipment for garbage collection and open dumping for 3 cities in Iraq	Baghdad, Basra and Mosul	BM, MMPW	The projects aims to revitalize solid waste management in major cities by the provision of equipment.	56		
59	W/S-27	Water Supply/Sanitation	Urgent Project for Provision of Water Treatment Equipment for Baghdad City	Baghdad	BM	Scope requested by Baghdad Mayorality : Water Tanker: will be utilized at the location of compact unit installation mentioned in "W/S-2" where insufficient distribution network exists. Quantity is under consideration			



60	W/S-28	Water Supply/Sanitation	Urgent Project for Provision of Water Treatment Equipment for Major cities in 15 States excluding Kurdish autonomous area	Major cities in 15 States excluding Kurdish autonomous area	MMPW	Requested scope from the MMPW : • Water Tanker : 155units, • Wheel Excavator : 75units, • Backhoe : 47units, • Wheel Loader : 47units, • Lorry : 108units, • Quantity is under consideration		
		Water Supply/Sanitation	Urgent Project for Provision of Sewerage Equipment for Major cities in 15 States excluding Kurdish autonomous area			Request scope from MMPW : Cesspool Empiler Tanker : 364units, Cesspool Jetting Unit : 296units, Vacuum Loader : 89units, Quantity is under consideration		
		Water Supply/Sanitation	Urgent Project for Provision of Solid Waste Equipment for Major cities in 15 States excluding Kurdish autonomous area			Requested scope from the MMPW : • Garbage Compactor : 795units, • Garbage Container : 696units, • Wheel Loader : 355units, • Trash Compactor : 177units, • Tractor with Trailer : 149units, • Tipping Truck : 271units, • Bulldozer : 537units, • Quantity is under consideration		
61	W/S-29	Water Supply/Sanitation	Rehabilitation of the Existing Saba Nissan WTP including Intake and Transmission Pumping Stations	Saba Nissan WTP	BM	Rehabilitation of Intake Pumping Station Details are not available, under investigation		
						Rehabilitation of Transmission Pumping Station Details are not available, under investigation		
						Rehabilitation of Intake and Transmission Pumping Station Details are not available, under investigation		
						Rehabilitation of Water Treatment Plant (capacity 540,000 m3/d) Details are not available, under investigation		
						Rehabilitation of Intake Pumping Station, Water Treatment Plant and Transmission Pumping Station Details are not available, under investigation		
62	W/S-30	Water Supply/Sanitation	Extension Project of Saba Nissan WTP	Saba Nissan WTP	BM	Under investigation since detail information is not available Implementation of the 2nd stage expansion of the plant (225,000 m3/d)		
63	W/S-31	Water Supply/Sanitation	Urgent Project for Provision of Solid Waste Equipment for Baghdad City	Baghdad	BM	Scope requested by Baghdad Mayorality : Equipment : Garbage Compactor, Garbage Container, etc. including management equipment for landfill of garbage disposal		
64	W/S-32	Water Supply/Sanitation	Supply Project of Pipe Materials and Piping Works for Replacement of Asbestos Cement Pipe in Kurdistan	Kurdistan	Ministry of Industry and Energy in Kurdistan Governorate	The projects aims to revitalize water supply capacity of waterworks in Kurdistan by the provision of pipe materials, and replacement works for the deteriorated asbestos cement pipes.		
65	W/S-33	Water Supply/Sanitation	Expansion Project of Wastewater Treatment Plant in Kurdistan	Kurdistan	Ministry of Industry and Energy in Kurdistan Governorate	The project aims to strengthen and expand the existing capacity to cope with the increased sewage amount.		
<b>Health</b>								
66	H-1	Health	Rehabilitation of General Hospital in Iraq 13 cities	Donuk, Ebil, Mosul, Kirkuk, Tikreet, Rumadi, Khabhenia, Najaf, Dwanithey, Kut, Anara, Samawa, Nassiria,	Ministry of Health (MOH), Health Department of Governorate	This is rehabilitation project of 400 beds general hospital of 13 cities in Iraq which was constructed by Japanese company in the end of the '80. In this project facility and medical equipment will be replaced. Before Gulf War, until 1990, Japanese company	185	For one hospital Production : 4 months Transportation : 2 months Installation and delivery : 2 months
67	H-2	Health	Strengthen Ambulance Network for Emergency Medical Services	Baghdad, Basra, and Mosul	MOH, Health Department of Governorate	Economic sanction of over 10 years made serious damage to emergency medical service. Limited budget and limited import of spare parts by economic sanction hinder proper maintenance. This project is strengthen emergency services by supplying ambulance. It	Ambulance: 4.5million yen x 143units = 643 Transportation: Unknown	Production : 6 months Transportation : 2 months Delivery : 0.5 months

68	H-3	Health	Strengthen Medical Equipment for Teaching Hospitals in Baghdad, Basra, and Mosul	Baghdad, Basra, and Mosul	MOH, Health Department of Governorate	This project is strengthen medical equipment of major teaching hospitals in Baghdad (Medical City), Basra (Sadel Teaching Hospital, Maternity and Pediatric Hospital) and Mosul (Ibn Sina Hospital, Al-Kansa Hospital). These hospitals are teaching hospital of	Baghdad Hospital : 500, Al-Zirahet Hospital : 1,450, Al-Mansur Pediatric Hospital : 550, Sadel Teaching Hospital : 800, Maternity and Pediatric Hospital : 1,000, Ibn Sina Hospital : 400, Al -Kansa Hospital : 600	Production : 5 months Transportation : 2 months Installation : 1.5 months Training : 0.5 months
69	H-4	Health	Strengthen Medical Facilities in Iraq	Whole country	MOH	In Iraq, there are more than 30,000 beds in hospitals and clinics. Many of these beds are seriously damaged due to economic sanction. In this project, beds of major hospitals and clinics of large or middle level will be replaced. These replaced beds are e	General bed : 0.2 mil, X 4,400 units = 880, Bed for surgical : 0.3 mil x 500 units = 150, ICU bed : 0.7 mil x 100 units = 70, Transportation : Unknown	Production : 5 months Transportation : 2 months Delivery : 1 month
70	H-5	Health	Strengthen Oxygen Gas Supply	Plant : Baghdad, Basra, Mosul Distribution center : 10 governorate	MOH, Health office of Governorate	In Iraq, there are only two oxygen factories in Baghdad. They were constructed in 1980 by Japanese company. These factories are already old and need to be renovated. Furthermore, facility of recharging station, transportation vehicle and charging cylinder	45.00	Production : 12 months Transportation : 2 months Installation and Delivery : 3 months Training : 1 month
71	H-6	Health	Strengthen Hospitals in Baghdad and Basra City	Baghdad and Basra	MOH	Population of Baghdad and Basra city is large. There are some hospitals in Baghdad and in Basra. Medical equipment of these hospitals are seriously damaged due to limited maintenance because of economic sanction. This situation prevent to provide proper	130.00	Production : 5 months Transportation : 2 months Delivery : 1 month Training : 0.5 months
72	H-7	Health	Establishing Mobile Health System for Mother, Children and emergency patient	Donuk, Erbil, Mosul, Kirkuk, Tikreet, Rumadi, Khadheria, Najaf, Diwanibay, Kut, Amara, Samawa, Nassifla,	MOH, Health office of Governorate	Recent security deterioration prevent proper distribution of medical personnel to rural health center. Increase of health center which has no medical personnel cannot provide proper service to the rural people. This project provide mobile health clinic and	3.00	Production : 5 months Transportation : 2 months Delivery : 0.5 months
73	H-8	Health	Establish health information network	Information center : Baghdad Sub center : Basra and Mosul	MOH, Health office of Governorate	Iraq health system was hospital oriented. This system require high operation and maintenance cost. Furthermore, this system neglect cost effective primary health care and also prevent collection of primary level data. On this project, considering future c	2.40	Production : 3 months Transportation : 2 months Delivery : 1 months Training : 2 month
74	H-9	Health	Fuel Cell Power Plant	Not specified	MOH, Health office of Governorate	Proposal of fuel cell power plant. This is not proposal of project.	200 per unit	Delivery : Immediately Transportation : 2 months Installation : 1 month Training : 1 month
75	H-10	Health	Mobile Hospital Unit	Not specified	MOH, Health office of Governorate	Proposal of fuel cell power plant. This is not proposal of project.	100 per unit	Production : 1 month Transportation : 2 months Delivery : 1 month Training : 0.5 month
76	H-11	Health	Strengthen Primary Health Care in Iraq	Whole country	MOH, Health office of Governorate	Strengthen primary health care by supply of mobile X-ray vehicle and mobile health center.	38.80	Production : 4 months Transportation : 2 months Delivery : 1 month
77	H-12	Health	Strengthen Medical Equipment for Main Hospitals in Mosul City	Mosul	MOH, Health office of Governorate	Second populated city in Iraq is Mosul city. This project focus on this city and strengthen secondary level health care. Ibn Sina Hospital (Specialised for surgical), Al Zaraver Hospital (specialised for medical), and Mother and Child Hospital. These hospitals are top referral hospital of northern area, however, this project concentrated to secondary level function only.	20.00	Production : 4 months Transportation : 2 months Delivery : 1 month
78	H-13	Health	Strengthen Medical Equipment for Mother & Child Hospital in Governorate	Erbil, Baquba, Ramadi, Hilla, Najaf, Diwaniya, Nassiriya, Samawa	MOH, Health office of Governorate	70% of child birth is made in home by insufficiently trained TBA. In this project, strengthen mother and child hospital and strengthen capacity of child birth and obstetric emergency care by supplying medical equipment to 8 hospitals in governorate.	20.00	Production : 4 months Transportation : 2 months Delivery : 1 month
79	H-14	Health	Strengthen Medical Equipment for District Hospital in Governorate	Suleymania, Hilla, Karbala, Baquba, Samarra, Faluja	MOH, Health office of Governorate	Referral system in Iraq is not functioning now. All patient go to hospital to get treatment. On of this reason is traditional health system in Iraq biased to hospital. It is necessary to shift the system from hospital care to primary care. On this project, 6 district hospitals which will function as secondary level are strengthened.	15.00	Production : 4 months Transportation : 2 months Delivery : 1 month

80	H-15	Health	Strengthen Medical Equipment for Dohuk City	Dohuk	MOH, Ministry of Health and Social Affairs of Kurdistan, and Health office of Governorate	This is the project to strengthen medical equipment of hospitals of Dohuk Governorate. Breakdown of each hospital is unclear.	7.90	Production : 4 months Transportation : 2 months Delivery : 1 month
81	H-16	Health	Strengthen Medical Equipment for Erbil City	Erbil	MOH, Ministry of Health and Social Affairs of Kurdistan, and Health office of Governorate	This project is to strengthen medical equipment on 4 hospitals in Erbil city (Emergency hospital, Teaching Hospital, Mother & Child Hospital, and Rapalin Hospital)	15.00	Production : 4 months Transportation : 2 months Delivery : 1 month
82	H-17	Health	Upgrading of Erbil Fertility Center	Erbil	MOH, Ministry of Health and Social Affairs of Kurdistan, and Health office of Governorate	In northern area, fertility level is down because of chemical weapon which used in the past. Family who want to have baby visit far a way to make artificial fertilization. This project is to strengthen the fertility center of Erbil to capable artificial fertilization.	3.00	Production : 4 months Transportation : 2 months Delivery : 1 month
83	H-18	Health	Strengthen Medical Equipment for Rural Hospital in Erbil Governorate	Erbil	MOH, Ministry of Health and Social Affairs of Kurdistan, and Health office of Governorate	Equipment supply to rural hospitals in Erbil governorate. 6 of 8 hospitals are requested.	15.00	Production : 4 months Transportation : 2 months Delivery : 1 month

#### Educational/Vocational Training

84	EV-1	Education	Teacher training school	Baghdad	MOE	High Priority in MOE but no information		
85	EV-2	Higher Education	Equipment Rehabilitation of Technical Institute	Kirkuk, Najaf, Anarah etc.	Ministry of Higher Education and Science Research (MOHE), Foundation of Technical Education (FTE)	The Technical Institute constructed during 1970 – 1980, could not maintain the facility and equipment due to economic restrictions after gulf war. Basrah technical institute damaged heavily due to bombing. Equipment supply for the facility where damage by bombing, looting and arson was minor. No practice is currently available in the school so soonest assistant is needed. The damaged facilities have been rehabilitated by own budget. The Technical Education Institute (TEI) announced that no assistance from Japan for the facilities was needed.		
86	EV-2-2	Higher Education	Equipment Rehabilitation of Technical Institute	Zafaraniyah	MOHE, TEI	The Technical Institute constructed during 1970 – 1980, could not maintain the facility and equipment due to economic restrictions after gulf war. At the Zafaraniya complex in Baghdad, 6 technical colleges and institutes under the control of Technical Education Foundation (FET). Almost of all the equipment were lost by looting after the war. The buildings of technical institutes in the nation has been rehabilitated by own budget. The technical institute in this Zafaraniya complex was prioritized by TEI to request the assistance from Japan.	119 millions yen	3 month
87	EV-3	Education	Kufa Agricultural School rehabilitation		MOE	This is one of the vocational schools but excluded from the requested list due to low priority.		
88	EV-4	Education	Rehabilitation of Zafaraniya Comprehensive Technical Institutes	Baghdad	MOHE, TEI	The comprehensive technical institute constructed during 1980s was bombed by the war of this time partly. Requested to UN-Habitat. The equipment was requested for minor damage facilities however the priority in the field is not high. The rehabilitation of the building was nearly completed so new project for the equipment was prepared for the request to Japan as per EV-2-2.		
89	EV-5	Education	Rehabilitation of television equipment of Open University of Education for teacher training	Baghdad	MOE	The Educational Open University with 9 study centers settled in 2000 has been training the teacher through national broadcasting which was suspended after the war. It plan to reopen the Open University by distributing the video tape for teacher training. The priority in MOE is not high.		
90	EV-6	Education	Rehabilitation of Baghdad University	Baghdad	MOHE	Facility rehabilitation and equipment supply. Requested to UN-Habitat. Damage assessment is needed. The damaged buildings will be rehabilitated by own budget.	30 million yen (US\$0.3 million)	
91	EV-7	Education	Rehabilitation of Baghdad Technical University	Baghdad	MOE	Facility rehabilitation and equipment supply for the Divisions of electro-machinery technology and mineral production technology. Requested to UN-Habitat. The damaged buildings have been rehabilitated by own budget.		
92	EV-8	Vocational Training	Expansion of employment Center network	Nationwide	Ministry of Labour and Social Affairs (MOLSA)	The Employment and Vocational Training Center gave a priority to establish new employment centers in each Governorate. The expansion of newwork will be after the completion of buildings.		

93	EV-9	Vocational Training	Vocational training equipment	Nationwide	MOLSA	Equipment for computer and english training. This project is included in the EV-10.		
94	EV-10	Vocational Education	Equipment Rehabilitation of Vocational schools	Nationwide	MOE	The vocational training in Iraq under control of MOE is after 9 years basic education. The schools damage by bombing and looting is now being rehabilitated by USAID etc. No equipment in the school exists. Equipment rehabilitation project for main cities in Iraq. No practice is currently available in the school so soonest assistance is needed. Based on the criteria prepared by MOE, 49 vocational schools were selected in Baghdad, Middle, South and North for equipment supply for 14 trades and workshop.	620 in the North, 107.1 in the Baghdad, 106.4 in the Middle, 663 in the South, 341.8 in Total	6 month
95	EV-11	Education	Rehabilitation of Al Rashid Technical School	Baghdad	MOHE/Ministry of Housing and Construction (MOHC)	The college which train the inspection technology of construction material is aiming to improve the inspection technology of construction material for reconstruction of Iraq. However the damage by bombing and looting is very serious so MOHE transferred this college to the Baghdad Institute of Technology and abolished.		
96	EV-12	Vocational Training	Employment and Vocational Training Center (5 vocational training sites) Equipment Rehabilitation	Baghdad, Basrah, Mosul, Najaf, Erbil	MOLSA	In the six employment and training center established in 1972, the training for physically and spiritually handicapped youth and unemployed people have been done. The training period is short and the scale is small. For the stabilization of people's livelihood and the moderation of unemployment rate, the center is being strengthened to establish new centers in main cities in the nation. KOICA is scheduling to construct new training center in Baghdad but the operation will be after the next year. Kirkuk vocational center is scheduled to be assisted by the NGO of US with rehabilitation of building and equipment, so the assistance for other centers are requested to Japan. The fields are 10 of Electric, Motor winding, Air-conditioner, Home appliance repairing, Carpentry, Welding, Automobile mechanic, Automobile electrical, Computer and Communication. 11 new vocational centers will be constructed by USAID. This project is needed urgently so the equipment was designed to be installed by October.	Baghdad 268, Basrah 256, Mosul 275, Najaf 261, Erbil 275, Total 1,335	3 month
97	EV-13	Vocational Training	Vocational training and small scale/Entrepreneurship development	Nationwide	MOLSA	Creation of vocational training class in the fields of masonry, carpentry, electricity, damage assessment and plumbing etc., The project for the local government is different from one of central level.	200 (US\$2 million )	
98	EV-14	Education	Nursery school rehabilitation	Nationwide	MOLSA	No information		
99	EV-15	Education	Primary and Intermediate School rehabilitation in Baghdad	Baghdad	MOE/Local Government	The demolishing and rebuilding of damaged classrooms in the primary and intermediate schools is accelerating the chronic shortage of classroom. No attendant children is increasing and becoming serious social problem.		7 month
100	EV-16	Education	Primary School rehabilitation in Samawah city	Samawah City	MOE/Local Government	The demolishing and rebuilding of damaged classrooms in the primary and intermediate schools is accelerating the chronic shortage of classroom. No attendant children is increasing and becoming serious social problem. The damage assessment report was delayed by end of March but the data in Muhamma governorate reached. This is the reconstruction project of 5 primary schools in Samawah City.	434 through local contractor and 468 through Japanese Contractor	7 month
101	EV-17	Education	Baghdad Gymnasium rehabilitation	Baghdad	Ministry of Youth and Sports (MOYS)	The gymnasium constructed in 1980 needs the rehabilitation.	300	
102	EV-18	Education	Baghdad Indoor Pool rehabilitation	Baghdad	MOYS	The indoor pool construction in 1982 needs the rehabilitation.	600	
103	EV-19-1	Vocational Training	Main construction machinery training center	Baghdad and etc.,	Ministry of Housing and Construction	The lack of operator and maintenance staff of heavy machinery is serious in Iraq. Heavy machinery rehabilitation for the center of operation and maintenance training.	1,000	6 month
104	EV-19-2	Vocational Training	Main construction machinery training center	Baghdad	Ministry of Housing and Construction		1,000	6 months
105	EV-20	Culture	Equipment Rehabilitation of Iraqi Museum	Kirkuk	Ministry of Culture	Rehabilitation of museum equipment. Partly rehabilitated by the assistance of Japan and Italy through UNESCO but not enough.		
106	EV-21	Education	Equipment rehabilitation of Pharmacy College in Baghdad	Baghdad	MOHE	Equipment list arrived here. However no information about College		

107	EV-22	Education	Equipment rehabilitation of secondary schools	South and North	MOE	The investment in Education was very small in the past two decades so the equipment level was also very low. By the bombing, looting and arson, remained equipment in the school was lost. Equipment supply for the primary and intermediate schools	Basrah Governorate 344, Muhanna Governorate 99, Maysan Governorate 155, Dhi Qar Governorate 304, Taamin Governorate 226, Ninevah Governorate 389, 1,517 in Total.	3 month
108	EV-23	Education	Printing and Science equipment supply to secondary schools	Kurdistan Region	Kurdistan Ministry of Education	Equipment supply for the selected secondary schools in Dohuk, Erbil and Sulaimaniyah cities in Kurdistan Region		5 month
109	EV-24	Higher Education	Equipment rehabilitation for Construction Material Inspection Equipment in Engineering Faculty of Baghdad University	Baghdad	MOHE, MOHC	The project is originally requested for the inspection equipment of construction materials in Al Rashid College. Al Rashid college was damaged heavily by bombing and looting so MOHE combined this college to the Baghdad Institute of Technology. However Baghdad Institute of Technology was also damaged. So the new project aims to develop the inspection equipment of construction material in the engineering faculty in Baghdad University which has no damage through and after the war and educate the inspection staff for construction material as well as inspect the construction material.		5 month
110	EV-25	Higher Education	Medical Laser Equipment for Research Center in Baghdad University	Baghdad	MOHE	The request is the laser equipment for medical in Baghdad University. The equipment list arrive here but no details on the faculty.		
111	EV-26	Higher Education	Babylon Dental College	Babylon	MOHE	The equipment list arrived here. No information about the college.		
112	EV-27	Higher Education	Building reconstruction of Baghdad Institute of Technology	Baghdad	MOHE	The request is reconstruction of building. No details.	1,850	
113	EV-28	Higher Education	Baghdad Health and Medical Technical College	Baghdad	MOHE, FTE	Request of equipment for nursing and paramedical for Baghdad Health and Medical Technical College		
114	EV-29	Higher Education	Basrah Nursing College	Basrah	MOHE, FTE	In Iraq, there is only one nursing college in Baghdad. This is th project to establish a new nursing college in Basrah.		
115	EV-30	Higher Education	Salahuddin University, Faculty of Engineering	Erbil	Kurdistan Region Higher Education Council	The procurement of spare parts and equipment was not available for two decades. This is the equipment supply for Faculty of Engineering, Salahuddin University.		

#### Others

116	O-001	Social Development	Civil Defence			Fire Fighting Truck, Fire Fighting Water Tanker, Rapid Intervention FF Small Truck, Ambulance, FF Equipment	0.75mil US\$	
117	O-002	Others (Ocean transport)	2 vessels of Collection Boat for oil	Basrah	Dep. of Port	Vessel + Sp. Parts + Crew Training	45	18 months
118	O-003	Others (Ocean transport)	Operation machinery for Um Quasar Port	Basrah	Ministry of Transport(MOT), DOP	Truck Crane: 40, Raising Crane: 30, Fork Lift: 120, Fork Lift for container: 10, Fork Loader: 15	40	3-5 months
119	O-004	Others (Ocean transport)	Dredging for Um Quasar Port	Basrah	DOP	Dredging work for channel of Um Quasar and Basura (dredging amount: 14 million m3)	250	12 months
120	O-005	Others (Ocean transport)	Urgent dredging for Um Quasar Port-1	Basrah	DOP	Dredging to keep the depth of a sea route to Basura port	70	24 months
121	O-006	Others (Ocean transport)	Urgent dredging for Um Quasar Port-2	Basrah	DOP	4 areas of the dredging at Um Quasar port to keep the depth of a sea route	50	4 months (include survey)
122	O-007	Others (Ocean transport)	Various types of Crane at Um Quasar Poart	Basrah	DOP	Crane (container/food) for handling at port Quay Side Crane : 40ton x 1 , -RTG Crane x2, -Unloader for grain x 1 , -Multi purpose Crane x 2, - SP.Parts+Crew training	45	18-20 months
123	O-008	Others (Ocean transport)	Vessel for Crane for salvage	Basrah	DOP	Vessel for Salvage with Crane for 400 ton, Vessel + SP. Parts + Crew training	40	18 months
124	O-009	Others (Ocean transport)	Buoys for Sign of Sea Route and Meteorological Maritime Survey		DOP	Buoys for Sign of Sea Route (LED): 20, AIS for Buoy and Spare parts: 20, Meteorological Maritime: 5, Machinery for Base (receiving a message and analysis) : 1	11	6 months + 2 months of installation
125	O-010	Others (Ocean transport)	Working Vessels: 10	Basrah	DOP	Tug Boat: 5000HP x 4, Pilot Boat x 1, Buoy Tender x 1, Fire Fighting Boat x 2, Sp. Parts and Crew Training (in Japan)	90	15 months

126	O-011	Others (Ocean transport)	Dredging Vessel: 1	Basrah	DOP	Basra Port: Dredging Vessel: 3,000m3 Hopper Suction; Sp. Parts and Crew Training	65	24 months
127	O-012	Others (Bridge)	Development of Southern Ports; Sea Route from Gulf Bay to Um Quasar		DOP	Salvage for Sinking Vessels (partly done by UNDP), Dredging Work (partly done by Bechtel) Facility for Navigation (Buoys, VHF, SSB, DMSS, etc.)	130.00 123.00	24 months each
128	O-013	Others (Sea transport)	Water supply for Southern Ports development		DOP		10	
129	O-014	Others (Sea transport)	Development of Southern Ports; Um Quasar, Coasunveri and Port Facility development of Coasverri		DOP	Width: 12.5 m for 3 miles from Um Quasar and 7.0 m at northern after it. Salvage of sinking vessels, Development of infrastructures in hinterland.	5.00, 135.00, 80.00, 115.00	2-3 years each
130	O-015	Others (Bridge)	Adhamiyah Bridge ( damage not confirmed )	Baghdad Mayoralty	CPA, Ministry of housing and Construction (MOHC), State Organization of Road and Bridge (SORB)	Unclear	51	45 months
131	O-016	Others (Bridge)	Dair Bridge: contact to Majun oil field also	Bridge for Basrah and Naru Island	Road and Bridge Dept.	600 m long concrete bridge with 9 m wide and 1.5 m x 2 side road, span: more than 30 m, crealance with water surface: more than 6.5 m, approach road: 2.5 km x 2		
132	O-017	Others (Bridge)	Fatha Bridge ( damage is confirmed )	Ouskierts of Baigi	CPA, MOHC, SORB	Damage for bridge and oil pipeline underneath bridge	56	24 months
133	O-018	Others (Bridge)	Restoration of Al-Sindbad Bridge	Basrah	MOHC	Clearance of broken sections, repair of present structure which will continue to be used for compensation of the location, construction of the section which should be newly built and construction of part of open bridge span	20	
134	O-019	Others (Bridge)	Construction of Basrah Canal	Basrah	CPA, MOHC	Unclear	72.80	52 months
135	O-020	Others (Public transport)	Trans Railway Bridge & Pedestrian Bridge Improve and Strengthen capacity of metropolitan bus transportation	Baghdad	Ministry of Transport and Communications (MOTC), Cooperation of Transportation in Baghdad Mayoralty (BM)	Intra-city bus: 100 cars, Inter-city bus: 50 cars, expansion of workshop and equipment	50	12 months
136	O-021	Others (Public transport)	Improve bus transport capacity of Baghdad city	Baghdad	MOTC, Cooperation of Transportation in BM	- Establishment of Depo/Workshop by utilizing existing workshop and yard - Repair of existing machinery - Supply of new buses (200 units) - New buses will be operated in metropolitan areas and between local cities (e.g. Basra, Mosul)	45	
137	O-022	Others (Public transport)	Improve public transportation capacity in 3 major cities		MOTC, Dept. of Transport	Baghdad: 3.9 millions of population, 1 main place, 9 sub-places Mosul: 1 main place, 3 sub-places Basrah: 1 main place, 2 sub-places (Large passenger bus, small passenger bus, and sets of maintenance equipment )	89	5-8 months
138	O-023	Others (Land transport)	Urgent provision of public transport vehicle	Kurdistan Areas			11	
139	O-024	Others (Land transport)	Provision of police vehicles and relevant equipment			Field Car, Pickup Truck, Patrol Car, Mini-bus, Large-bus, Communication equipment (100 sets)	25	
140	O-025	Others (Car)	Rehabilitation of diesel locomotives (present condition)		IRRC	Rehabilitation of existing diesel locomotive Provision of new diesel locomotive		
141	O-026	Others (Railway)	Highway (Diwaniya - Nasriya - Samawa)		CPA, MOHC, SORB	Highway (Diwaniya - Nasriya): 150km, Access road (Nasriya - Samawa): 30km	1,600.00 1,300.00	About 60 months About 48 months

142	O-027	Others (Road)	Rehabilitation of Baghdad-HIP Express way: Rehabilitation Project No. 1, 9A and 9B (present condition is not satisfactory)		CPA, MOHC, SORB	This is regarded as the most important facility for physical distribution and transport.	321.00 US\$	11 months
143	O-028	Others (Road)	Construction of Samawa-Access expressway	Samawa	MOHC	Construction of expressway between Diwaniya and Samawa (50km length, two lanes each way)	1,500	5 years
144	O-029	Others (Road)	Provision of road repaving equipment for Baghdad city	Baghdad	BM	Supply of Japanese-made cars will contribute to immediate solution to transportation in Baghdad city	25	
145	O-030	Others (Road)	Provision of construction machinery for road improvement for Baghdad city	Baghdad	BM	Hydraulic shovel: 40 units, Hydraulic shovel with Tire: 60 units, wheel loader: 90 units, tipper truck: 50 units, spare parts	45	
146	O-031	Others (Road)	Machinery provision for road rehabilitation	Kurdistan Areas			33	
147	O-032	Others (Road)	Improvement of Iraq-Turkey Road and Bridge		CPA, MOHC, SORB	Upon the request of Government of Turkey, existing rural road (4m width) in Iraq needs to be improved to change to trunk road (15km + bridge x1) in order to meet the future increase of transport volume.	200	36 months
148	O-033	Others (Road & Bridge)	Provision of Japanese-made special-purpose vehicles and these spare parts Environment and sanitation management	Whole country		Compression garbage truck: 1400 units, container-type garbage truck: 420 units, sludge treatment truck: 700 units, water supply truck: 210 units, and spare parts for each equipment	575	
149	O-034	Others (Car & Parts)	Provision of Japanese-made special-purpose vehicles and these spare parts	Whole country		Concrete mixer: 70 units, Concrete pump car: 35 units, freezer truck: 140 units, refrigerator truck: 140 units, Working truck for higher part: 70 units and spare parts for each equipment	111	
150	O-035	Others (Car & Parts)	Stabilization of living basis Establishment of basic geographic information (Image data processing and mapping)		Ministry of Planning (MOP)		15.00-20.00, 17.00-25.00	6-12 months
151	O-036	Others (Construction)	Strengthening training for construction machinery and vehicles		MOHC	- Workshop under the Ministry of Housing and Construction will be expanded. - Necessary training equipment such as construction machinery, vehicle, repair machine and education device will be provided for the workshop.	40	12 months
152	O-037	Others (Construction)	Provision of equipment for construction machinery center	Surrounding of Khalls, Baghdad	MOHC, Al Farouk, etc.	- Establishment of machinery Depo/Workshop by utilizing existing workshop (5,000m <sup>2</sup> ) and yard (8 ha) - Implementing repairing work in the Depo/Workshop - Supply of new construction machinery to supplement to shortage	40	Unknown
153	O-038	Others (Construction)	Urgent establishment of major central construction machinery center	Baghdad	MOHC	- Construction of workshop and administration building - Provision of construction machinery and training equipment - Establishment of practical training course	40	
154	O-039	Others (Construction)	Provision of construction machinery and car for Baghdad Mayoralty	Baghdad	BM	In order to meet the high demand of in Baghdad city, construction machinery and cars will be provided for Baghdad City Government.	400	8 months
155	O-040	Others (Construction)	Rehabilitation and new procurement of construction machinery and vehicles for Baghdad Mayoralty	Baghdad	BM	Vehicles and spare parts: 100 units (approx.), construction machinery and spare parts: 200 units (approx.)	92	12 months
156	O-041	Others (Construction)	Provision of repaving tool and spare parts for hydraulic shovels	Baghdad and other areas	Ministry of Water Resources (MOWR)	585 of hydraulic shovels, which were procured in 1999-2000 but mostly broken, should be repaired.	15	6 months
157	O-042	Others (Construction)	Provision of air-conditioning units for hospitals/public facilities	Whole country	Unknown	Air-conditioning unit: 4000 units (approx.)	8	4-7 months

158	O-043	Others (Industry)	Restoration of Baddash cement plant	Mosul	Ministry of Industry and Mining (MOIM)	Firing equipment was provided by HI in 1983, but should be replaced due to aging of overall plant	20-30.00		
159	O-044	Others (Industry)	Provision of spare parts for urgent rehabilitation of Kirkuk cement plant	Kirkuk	MOIM, Cooperation of Cement Production	- 70-80% of rehabilitation and environmental management, - Provision of emergency spare parts for cement plant, - Supply of private electric generator, - Supply of cement particle recovery device	75	13 months (FOB basis)	
160	O-045	Others (Industry)	Urgent provision of equipment for rehabilitation of Kubaisa cement plant	Kubaisa	MOIM, Cooperation of Cement Production	- 70-81% of rehabilitation and environmental management, - Provision of emergency spare parts for cement plant, - Supply of private electric generator, - Supply of cement particle recovery device	75	12 months (FOB basis)	
161	O-046	Others (Industry)	Iron manufacturing plant	Baghdad	MOIM, Cooperation of Industry	Iron manufacturing facility + materials	10	30 months	
162	O-047	Others (Industry)	Large-scale computer	Baghdad	Ministry of Petroleum (MOP), Corporation of Oil Refineries	ACOS600	5	30 months	
163	O-048	Others (Industry)	Large-scale computer	Baghdad	Ministry of Trade and Commerce (MOTC)	ACOS601	5	34 months	
164	O-049	Others (Industry)	Provision of galvanized iron sheet (corrugated-type)	Whole country	Under investigation	75m2/house x 20,000 houses = 1,500,000m2 will be necessary for housing rehabilitation to stabilize local people's living basis: 914x2743mm	10	2-3 months	
165	O-050	Others (Industry)	Sectional electric pole made of light-weight steel	Whole country	Under investigation	Supply of electrical poles which can be manually transported, assembled, and constructed	1000km2: 18.00	6 months	
166	O-051	Others (Industry)	Sectional school building made of light-weight steel	Whole country	MOE	Supply of school building which can be manually transported, assembled, and constructed	900m2: 2,130		
167	O-052	Others (Industry)	Sectional clinic building made of light-weight steel	Whole country	MOH	Supply of clinic building which can be manually transported, assembled, and constructed	300m2: 730		
168	O-053	Others (Industry)	Sectional electric pole made of light-weight steel to build communication antenna	Whole country	Ministry of Transportation and Communication (MOTC)	Supply of electric pole which can be manually transported, assembled, and constructed (Height: 21.6m)	A set for 100km2: 18.00		
169	O-054	Others (Industry)	Provision of galvanized sheets for rehabilitation of houses	Whole country		Size: 3 x 9 ft (914 x 2743), sheet thickness: 0.457mm	1,007		
170	O-055	Others (Industry)	Provision of construction materials (steel bars, )	Whole country	Under investigation	Highly versatile and necessary construction materials such as substructure should be provided.	100	2-3 months	
171	O-056	Others (Industry)	Rehabilitation of power transmission line (Provision of sectional electric pole made of	Whole country	Under investigation	Supply of electrical poles which can be manually transported, assembled, and constructed	400V power transmission: 1000km 10.00	6 months	
172	O-057	Others (Industry)	Fluorescent lamp assembly plant	Baghdad	MOIM, Cooperation of Industry	Fluorescent lamp assembly facility and equipment	30	34 months	
173	O-058	Others (Industry)	Provision of construction machinery & demining machines		National Mine Action Authority-Iraq(NMAA-IRAC)	Spare parts, repair machine, service center, demining machine, a set of general construction equipment for training	42		
174	O-059	Others (Industry)	Improvement of textile mills under the Ministry of Industry	Whole country	MOIM	Provision of facilities and equipment such as textile machine	200	8 months	
175	O-060	Others (Industry)	Rehabilitation of vehicle repair plant	Baghdad, Mosul, Basrah	State Enterprise for Automotive Industry (SEAI)	- Supply of equipment to restore repair function of existing garages - It is highly possible that various rehabilitation projects will require vehicles so this project will contribute to smooth implementation of these projects.	18		
176	O-061	Others (Industry)	Rehabilitation of cement plant	Al Tamin, Kubaisa, Sinjar	MOIM, Cooperation of Cement Production	Provision of maintenance equipment and spare parts (excluding installation)	30x3 places =90.00	1-2 years	
177	O-062	Others (Industry)	Rehabilitation of cement plant	Al Tamin, Kubaisa, Sinjar	MOIM, Cooperation of Cement Production	Provision and installation of rehabilitation equipment in order to improve plant capacity	300	18-24 months	



178	O-063	Others (Industry)	Urgent provision of spare parts for cement plant	Al Tamin, Kubbasa, Sinjar	MOIM, Corporation of Cement Production	Operation rate has been decreasing because spare parts cannot be imported. Therefore, operation rate should be increased from 25% to 50%.	100	12 months
179	O-064	Others (Industry)	Provision of concrete grinding equipment for damaged/destroyed buildings		MMPW	Automatic crusher, sizer, hydraulic shovel, hydraulic breaker, hydraulic crusher, wheel loader, bulldozer, tipper truck, etc.	One set: 2.25	
180	O-065	Others (Industry)	TV +Radio assembly plant	Baghdad	MOIM, Corporation of Electricity and Communication	20 inch-color TV kit: 40,000 units, Radio kit: 500,000 units	14	
181	O-066	Others (Industry)	Provision of construction machinery to improve sanitation in Baghdad	Baghdad	BM	Hydraulic shovel: 40 units, wheel loader: 60 units, spare parts	18	
182	O-067	Others (Industry)	Provision of construction machinery for cleaning in Baghdad	Baghdad	BM	Hydraulic shovel: 40 units, Hydraulic shovel with tire type: 60 units, wheel loader: 60 units, tipper truck: 50 units	30	
183	O-068	Others (Industry)	Rehabilitation of Basra No.3 fertilizer plant	Basrah	MOIM	Ammonia: H88 dx2series, urea fertilizer: 1,600 dx2 series, sets of utilities (e.g. boiler), rehabilitation of storage facility for ammonia & urea	400	
184	O-069	Others (Industry)	Establishment of food refrigeration strage		MOTC	Baghdad x2, one for each city of Umm Qasr or Basra, Kirkuk, Mosul (Total: 1,000 ton x11 units )	125	
185	O-070	Others (Industry)	Filling machines for petrol stations		MOP	3,000 machines out of 6,000 will be replaced.	20	3-5 months
186	O-071	Others (Petroleum)	Provision of equipment for urgent rehabilitation of Kirkuk and Basra LPG/NGL plants	Kirkuk, Basrah	MOP	Provision of necessary facilities and spare parts will enable the plants to increase production of LPG so that insufficient supply of LPG will be solved. Production after rehabilitation will be expected as follows. Kirkuk LPG: 2000t/d, North Rumaila NGL and South LPG in Basra 2400t/d	15-20 for each place (total 3 places)	9 months
187	O-072	Others (Petroleum)	Rehabilitation of oil associated gas-treating system and LPG chain	Umm Qasr, Az Zubail, North Rumaila, Baiji, Kirkuk	MOP	Rehabilitation of LPG chain connecting north and south regions. It is not functioned due to destruction by war and post-war plunder Step-1: South region, Step-2: Central part of North region, Step-3: New construction of necessary relevant facilities	Step 1: 450.00 Step 2: 450.00 Step 3: -----	24 months (Step1)
188	O-073	Others (Petroleum)	Rehabilitation of associated gas recovery and crude oil production facilities of Zubair	Basrah (Zubair)	MOP	Rehabilitation of associated gas recovery compressor, gas dehydrator, gas pipe line, and other relevant facilities in order to recover associated gas, which is currently discharged and burning in atmosphere, and to send it to LPG recovery plant.	450	30 months
189	O-074	Others (Petroleum)	Improvement of Dolla Oil Refinery	Dolla	MOP	In order to solve fundamental problems and improve octane value, continuous cat cracker and hydrodesulfurization facility will be installed.	230	24 months
190	O-075	Others (Petroleum)	Urgent provision of fuel supply facilities	Whole country	MOP, Coporation of Petroleum Product and Distribute	Oiling pump (600 units), Oiling pump for gas station (900 units), gasoline tanker truck (200 units)	40	
191	O-076	Others (Petroleum)	Improvement of Basrah Oil Refinery	Basrah	MOP	Basra Oil Refinery is the oldest refinery in Iraq. Necessary facilities and equipment will be provided in order to improve octane value and to reduce negative environmental impact	230	24 months
192	O-077	Others (Petroleum)	Rehabilitation of Basrah Petrochemical Complex	Basrah	MOP	Rehabilitation of following units: Ethylene Plant (130,000TY), -Caustic Chlorine Plant, -VCMPVC Plant, -LDPE/HDPE Plant		24 months
193	O-078	Others (Petroleum)	Rehabilitation of Baiji Oil Refinery	Baiji	MOP	The refinery is too old and destructed by war. Some spare parts were stolen. Therefore, rehabilitation of hydrodesulfurization facility and hydrocracking facility, and replacement of decrepit facility will be implemented. 150,000 b/d	30	35 months
194	O-079	Others (Petroleum)	Provision of mobile LPG filling facility	17 cities	MOP	The facility will move with gasoline tanker truck and subdivide LPG into a cylinder in order to provide LPG for households and medical facilities (e.g. hospital).	16	5 months
195	O-080	Others (Petroleum)	Arabsat ground station (not confirmed)	Baghdad	CPA, MOTC (Ministry of Transport and Communication)		9	14 months
196	O-081	Others (Petroleum)	ITCP's building (not confirmed)	Mosul, Retoba, Baghdad, Basrah	CPA, MOTC		249	24 months

197	O-082	Others (Communication)	Improvement of county's long-distance communication trunk line	Whole country	MOTC, Iraq Telecommunication & Posts (ITCP)	For improving long-distance line to solve insufficient capacity of existing line and its increasing demand, existing stations and optical cable will be used and existing 7,560 camels will increase 8 times.	60	5 months	
198	O-083	Others (Communication)	Establishment of Long-distance microwave radio system for	Whole country	MOTC, ITCP	- Establishment of backup lines for optical transmission system (mentioned above) - Establishment of local communication network	84	12 months	
199	O-084	Others (Communication)	Establishment of communication infrastructure for the network in Baghdad and for inter-city network for major cities in Iraq	Whole country, Baghdad city	MOTC, ITCP	Baghdad市: Establishment of basic communication infrastructure Service network in whole country. Establishment of communication infrastructure backbone (SDH/DWD for voice and data communication)	バグダッド: 84.00, イラク全国サービス: 106.00		
200	O-085	Others (Communication)	Restoration of ground stations and transmission stations for satellite communication in	Baghdad	MOTC, ITCP	Existing ground stations were completely destroyed, so they should be restored.	Unknown	Unknown	
201	O-086	Others (Communication)	Installation of optical communication access system network	Baghdad, Basrah, Mosul	MOTC, ITCP	Installation of 100,000 lines for 3 major cities	100		
202	O-087	Others (Communication)	Installation of optical communication trunk line network for Baghdad city	Baghdad	MOTC, ITCP	Improvement of communication transmission capacity for capital city	59	12 months	
203	O-088	Others (Communication)	Installation of fixed telephone network for Baghdad	Baghdad	MOTC, ITCP	Installation of 100,000 lines	100		
204	O-089	Others (Communication)	International communication system for Basrah	Basrah	MOTC, ITCP	International switching facility + satellite ground station	36-00	6 months	
205	O-090	Others (Communication)	Installation of fixed telephone network (PHS) for Basrah	Basrah	MOTC, ITCP	Installation of 100,000 telephone lines: 1,000 of base stations Cost for installation & adjustment	75		
206	O-091	Others (Communication)	PHS for regional cities (Nasiriya, Samawa)	Nasiriya, Samawa	MOTC, ITCP	Urgent communication system for regional cities	37	6 months	
207	O-092	Others (Communication)	Urgent rehabilitation of TV/Radio broadcasting	Regional cities (e.g. Basrah, Samawa), Basra, Nasiriya, Samawa	MOE	Container-type TV transmitter + power supply car, news relay station, etc. Container-type TV transmitter + power supply car, equipment & facility for simplified broadcasting studio	130	9 months	
208	O-093	Others (Communication)	Urgent rehabilitation of TV broadcasting equipment	Basra, Nasiriya, Samawa	MOE	Instead of building, container will be used and equipped with container type receiving set and power supply car. In case of Basra, news relay station will be provided.	42	9 months	
209	O-094	Others (Communication)	TV studio complex	Baghdad City	MOE	Studio building was demolished.	3		
210	O-095	Others (Communication)	Broadcasting equipment	Kirkuk, Rubah, Mosul, Amarah, Samawah	MOE	Provision of UHF TV & FM Radio Transmitter Provision of VHF TV Transmitter	2.50, 2.50, 1.00, 1.00		
211	O-096	Others (Communication)	Establishment of special line, Provision of communication equipment for disaster control, Support for human resources development		MOE	- Establishment of special communication network for administrative & infrastructure service organizations as a part of national disaster management system. - Operation of reliable public communication network which is able to be utilized for national disaster management. - Restoration of disaster management resources (1.3 million lines: 5% of restoration). - Needs for human resources development	2	14 months	
212	O-097	Others (Agriculture)	Increase of food production		Ministry of Agriculture (MOA)	Tractors and Implements (500 sets) will be provided. A thirty-horsepower tractors, which farmer's in Iraq are used to using, will be mainly provided.	25	12 months	
213	O-098	Others (Agriculture)	Improvement of rice milling plant	Hilla, Abu Sukhair	Ministry of Trade and Commerce (MOTC)	Plant parts will be provided in order to improve two rice milling plants (Hilla & Abu Sukhair) located in the south of Baghdad.	15	12 months	
214	O-099	Others (Agriculture)	Provision of construction machinery for MOA		MOA	Construction machinery will be provided for the purposes of farmland improvement and irrigation facility construction.	50	8 months	
215	O-100	Others (Agriculture)	Urgent provision of fertilizer	Kurdistan Areas	MOA		6		
216	O-101	Others (Agriculture)	Urgent provision of agriculture machines	Kurdistan Areas	MOA		17		
217	O-102	Others (Agriculture)	Provision of Mini-hydraulic generator	Kurdistan Areas	MOA		33		

## **Appendix-2**

### **List of Interviewer**

List of Interviewer

No.	Organization	Name	Position
Genral			
G-1	Ministry of Planning	Mr. Nasser Shraideh	Director, Technical Support Unit Aid Coordination Unit Bilateral Cooperation Department
G-2	Ministry of Communication	Dr. Haider Al-Abadi BSc PHD	Minister of Communication
G-3	Iraq Telecommunication & Posts Co.	Dr. Walid D. Jallo	Director, Technical Affair Department
G-4	The World Bank	Dr. A. Amir Al-Khafaji	Finance, Private Sector and Infrastructure, Middle East and North Africa
G-5	The World Bank	Mr. Sateh Chaifc El-Arnaout	Finance, Private Sector and Infrastructure, Middle East and North Africa
G-6	Osman Technical Engineering Consulting	Dr. Eng. Abdul Rahman A. Osman	General Manager
Electricity			
E-1	Ministry of Electricity	Dr. Majid Alsadi	Advisor of Ministry
E-2	-ditto-	Mr. Engineer Raad Al-Haris	Advisor of Ministry
E-3	-ditto-	Dr. Moayed Al-Maayouf	Directorate General of Dept. of Studies & Planning
E-4	-ditto-	Dr. Ahmed J. Al-awady	Directorate General of Coordination Office in Amman
E-5	-ditto-	Mr. Adel H. Mahdi	Directorate General of Control and Communications
E-6	-ditto-	Dr. Thamiir Numan Al-bayati	General Manager
E-7	-ditto-	Mr. Foad M. Abou	Chief Engineer, Transmission Network dept
E-8	-ditto-	Mr. Aid 'a Disher Zamel	Power Station Manager
E-9	-ditto-	Mr. Abdulrazzaq M. Afhoor	Power Station Manager of Hartha Power Station
E-10	-ditto-	Mr. Khaleel Ibrahim Aboud	Manager of Department of Inspection and Safety Requirement, Hartha Power Station
E-11	Ministry of Industry and Mineral	Mr. Ahmed M Mohamed	Vice Directorate General of Dila Transformer factory
E-12	Kurdistan Regional Government	Mr. Abudul Aziz Shams Aldeen	General Director of Electricity
E-13	UNDP	Mr. Hideki Matsunaga	Senior Advisor / Infrastructure, Resource Mobilization and Donor Relations
E-14	-ditto-	Mr. Abdul Aziz A. Ahmed	Programme Advisor / Electricity
E-15	-ditto-	Mr. Carlos R. Guerra	Technical Advisor
E-16	-ditto-	Mr. Jom Sorensen	Programme Specialist / New York
E-17	-ditto-	Mr. Khaeiad Syed	Engineer
E-18	-ditto-	Mr. Jerzy Pawlowski	Engineer
E-19	CPA (South)	Mr. Rodney Matthews	Director of Reconstruction
E-20	-ditto-	Mr. Andrew Alderson	Director of Planning and Development
Water/Sanitation			

WS- 1	Mayorality of Baghdad	Eng. Ibrahim Mustafa Hussain	Deputy Mayor for Technical Affairs
WS- 2	Baghdad Mayorality	Mr. Saad Bihnam Abdulla	Director General of Baghdad Water Authority, Chief Engineer
WS- 3	Baghdad Mayorality General Company for Projects Implementation	Eng. Talal M. Jacob	Technical Affairs Manager
WS- 4	Action Faim	Mr. Laurence Hamai	Watsan Cordinator
WS- 5	AGEF Association of Experts in the Fields of Migration & Development Cooperation	Mr. Paul-Pieter Ooterbeek	Head of Mission
WS- 6	CPA South	Mr. Andrew Alderson	Director Economic Planning & Development
WS- 7	CPA South	Mr. Andrew Alderson	Director, Economic planning and development
WS- 8	CPA South	Mr. Colin McBride CEG	Head of Utilities
WS- 9	Infrastructure Development Institute (IDI)	Mr. Yoshio Yabe	Senior Counselor & Director of Planning Department
WS- 10	Infrastructure Development Institute (IDI)	Mr. Tetsuo Ito	Senior Advisor
WS- 11	JBG Gauff Ingenieure	Mr. Kurt Birkenmeier	Managing Director
WS- 12	JBIC	Mr. Masatomo Ogane	CHIEF REPRESENTATIVE, REPRESENTATIVE OFFICE IN CAIRO
WS- 13	JBIC	Mr. Kunio Okamura	Director General, Development Assistance Department III
WS- 14	KFW	Mr. Reinhardt Schmidt	Director KFW Amman Office
WS- 15	KFW	Mr. Detlef Gielow	Project Manager, Naher Osten
WS- 16	KFW	Mr. Claudia Arce	Division Chief Sector & Policy Division Water Resources & Solid Waste
WS- 17	Ministry of Municipalities & Public Works (MMPW), Lebanon	Eng. Rakan A. Al-Alaifi	General Directorate of Municipalities (GDM)
WS- 18	Ministry of Water Resources, Iraq	Eng. Shamel Hashim	Chief Engineer
WS- 19	Ministry of Planning, Jordan	Mr. Nasser Shraideh	Director, Technical Support Unit Aid Coordination Unit Bilateral Cooperation Department
WS- 20	Dohuk Water Authority	Eng. Mohammad Taha	Head of Technical Department
WS- 21	Ministry of Industry & Energy, Assyrian Democratic Movement	Mr. Yonan M. Hozaya	
WS- 22	Ministry of Land, Infrastructure & Transport	Mr. Ken-ichi Nakamura	Deputy Director for International Cooperation International Division for Infrastructure Policy Bureau
WS- 23	SETEC Engineering	Mr. Gerhard Zimmerl	Managing Director
WS- 24	U.S. Agency for International Development (USAID)	Mr. Jim N. Barnhart	Director, Economic Opportunities Office
WS- 25	UNDP	Mr. Ali Tashin Jumah	Head of Health, Education & Affairs
WS- 26	UNDP, Iraq	Mr. Rami Baroudi	National Officer, Watsan UNDP Iraq
WS- 27	UNICEF	Mr. William Fellows	Manager for W & S
WS- 28	UNICEF	Dr. Abimbola O. Odumosu	
WS- 29	University of Baghdad	Prof. Dr. Rafa Hashim, S. Al-Suhaili	Head of the Computer Center, University of Baghdad, Civil Engineer
WS- 30	USAID	Mr. David L. Piet	Population & Family Health Section Office of General Development

WS- 31	USAID		Dr. Salwa Bitar Qreit		Senior Project Management Specialist, Office of Population & Family Health
WS- 32	USAID		Mr. James Franckiewicz		Director, Office of Water Resources & Environment
Health					
H-1	Ministry of Health		Mr. Ammar Al-Saffar		Vice Minister
H-2	Ministry of Health		Dr. Adel Mohsin		Inspection General
H-3	Ministry of Health		Ms. Iman Al-Dabbagh		Director General, Operation
H-4	Ministry of Health		Dr. Nema Saeed		Director General, Primary & Public Health
H-5	Ministry of Health		Dr. Usama Al-Ansary		Assist. D.G., Prevention
H-6	Ministry of Health		Mr. Najim A. Abdul Ruhman Abdulla		Chief Engineer Planning Dep.
H-7	Kurdistan Regional Governmetn, Ministry of Health & Social Affairs		Dr. Lezgin A. ahmed		General Director of Planning & Health Education
H-8	CPA		Mr. James Heavmen		Senior Advisor for MOH
H-9	CPA		Mr. Robert J. Goodwin		Chief of Staff for MOH
H-10	CPA		Mr. David Tarantino		Donor coordination for MOH
H-11	CPA South		Mr. Andrw Alderson		Director, Economic planning and development
H-12	CPA South		Dr. Giovanni Tundo		Health
H-13	CPA South		Dr. Aran Maree		Head of Health, Education & Affairs
H-14	USAID		Mr. David L. Piet		Population & Family Health Section
H-15	USAID		Ms. Leslie Perry		Director of Health section, Iraq office
H-16	WHO		Dr. Naeema Al-Gasseer		Representative to Iraq
H-17	WHO		Dr. Ibrahim A. Bani		Medical Officer
H-18	UNIDO		Mr. Akbar Usamani		Senior Liaison Officer
H-19	Japan International Volunteer Center		Mr. Bunjiro Hara		Coordinator of Iraq Project (NGO)
H-20	Japan International Volunteer Center		Mr. Kenichiro Nakajima		Assitant Coordinator of Iraq and Jordan Project (NGO)
H-21	HOSPICO		Eng. Hashim Ahmed		Manager
H-22	HOSPICO		Dr. Farah Sami		Medical Information Consultant
H-23	CC Med		Eng. Ahmed Al Ali		Regional Manager
H-24	Eng. Sabah Al-Shammery & Partners Co.		Mr. Ismail K. Ibrahim		Manager of Medical & Engineering Division
H-25	M. Alzaben Drug Store		Dr. Adnan Al Shaikh		General Manager
H-26	Medical Development & Supply Co. (exempt) W.L.L.		Mr. Khaled T. Kanaan		Chairman & General Manager
H-27	Almazd Gropu for Medical & Engineering Systems & Technologies		Dr. Hasanain S. Ja'afar		CEO
H-28	Farqu Magazachi Goup		Mr. Faruq Magazachi		CEO

H-29	Medical Equipment & Maintenance Co. W.L.L.	Mr. Jado Zakaria Abeido	Managing Director
H-30	Roche Diagnostics Regional Office Amman	Mr. Ibrahim E. Ghawi	Managing Director, Regional Office
H-31	Unity Medical Supplies Est.	Mr. Riad Hmdan	Managing Director
H-32	Procure Technical Service L.L.C.	Mr. Ghada Shafiq Soufan	Managing Director
Education / Vocational Training			
ED-1	Ministry of Education(MOE)	Dr. A. Alwan, Minister of Education	Minister
ED-2	MOE	Dr. Mohammed Sadiq Hashim Hussein Na	Consultant of Ministry of Education
ED-3	MOE	Mr. Zahid Warid Hasan	General Manager of Vocational Education
ED-4	MOE	Eng., Sa'ad Abbas Khidir	Scientific Research of Vocational Education
ED-5	MOE	Mr. Nabil Mahdi Mahmood	Scientific Research of Vocational Education
ED-6	Ministry of Higher Education(MOHE), Technical Education Foundation(TEF)	Prof. Haifa I. Tawfeed	Deputy President of TEF, Dean of Baghdad Technical College of Medical and Health Technology
ED-7	MOHE, TEF	Prof.Dr. Mohamood Sh. Abdulhusain	President
ED-8	MOHE, TEF, Baghdad Technical College	Dr. Adnan Naama Abood	Dean Assistant, Assistant Professor
ED-9	MOHE, TEF, Baghdad Technical College of Medical and Health Technology	Dr. Saadi Abdul Ridhu Hatem	Dean Assistant, Head of Dept., of Radiology
ED-10	MOHE, TEF, Baghdad Technical College of Medical and Health Technology	Dr. Vivian B. Habboush	Head of Dept.,
ED-11	MOHE, TEF Baghdad Technical College	Dr. Moneer Hameed	Dean of Baghdad Technical College
ED-12	MOHE, TEF Basrah Technical Institute	Dr. Makki H. Ali	Dean of Basrah Technical Institute
ED-13	Ministry of Labor and social Affairs(MOLSA), Employment and Vocational Training Center	Ms. Swason Mahd	Acting Director of Employment and Vocational Training Center
ED-14	MOLSA, Employment and Vocational Training Center	Dr. Craig Davis,	Labor adviser to MOLSA, CPA
ED-15	Kurdistan Region Government, Ministry of Education	Dosty Abdulgadr Muhammand	Director of Cooperation
ED-16	UNICEF	Ms. Geeta Verma	Senior Project Officer, Education
ED-17	UNICEF	Mr. Wa'el Al-Ashhab	Project Officer, Education/ Rehab.
ED-18	UNICEF	Mr. Yuji Taketomo	Assistant Logistic Officer
ED-19	UNESCO	Mr. Wolfgang Reuther	Director of UNESCO Representative to Jordan
ED-20	UNESCO	Mr. Salah Zaki Khaled	Senior Procurement Officer
ED-21	JEN	Mr. Ouka	JEN Amman Office
ED-22	JEN	Mr. Cyril Cappai	JEN Baghdad Office
ED-23	Al-Samana Trading Group	Mr. Ahmad Kh. Al-Gaood	C.E.O.
ED-24	Japan International Volunteer Center	Mr. Bunjiro HARA	Iraq Project Coordinator
ED-25	Japan International Volunteer Center	Mr. Kenichiro NAKAJIMA	head of Dept.,

ED-26	COOPI	Mr. Tiziano Greco	Iraq Country Coordinator
ED-27	ANERA	Mr. Hanan Shasha	Program Officer for Jordan and Iraq
ED-28	Jordan Medical Supplies & Services Co.	Mr. Abdul Karim Masoud	Branch Sales Manager
ED-29	Jordan Medical Supplies & Services Co.	Mr. Khairuddin Saber	Branch Manager
ED-30	Dafwa Trading Agency	Mr. Ali Shiyyab	General Manager
Logistics			
LG-1	The Port Corporation (Aqaba)	Mr. Saud H. Soror	Director General
LG-2	Ministry of Industry and Trade (Jordan)	Mr. Tayseer Shbelat	Director of Aqaba Industry & Trade Department
LG-3	Ministry of Electricity (Iraq)	Mr. Abdul-Aziz Shams - Aldeen	General Director of Electricity
LG-4	Ministry of Industry & Energy (Kurdistan)	Mr. Yonan M. Hozaya	Assyrian Democratic Movement
LG-5	United Nations Development Programme	Mr. Abdul Aziz A. Ahmed	Programme Advisor / Electricity, UNDP Iraq
LG-6	United Nations Development Programme	Mr. Gerard Gomez	Chief Procurement Section
LG-7	Compagnie Mediterranee de Commerce (Dredging Contractor for the Umm Qasr Port)	Mr. Mohammed Zitouni	President Director General
LG-8	Profile Marketing LLC Promark (-ditto-)	Mr. Mohammed Toufik Zitouni	General Manager - Middle East
LG-9	University of Technology (Transportation Specialist, Iraq)	Dr. Enad Abbas Ismail	Assistant Professor, Building and Construction Engineering Department
LG-10	Embassy of the Republic of Turkey	Mr. Emine Lekeşiz	Commercial Counsellor, Office of the Commercial Counsellor
LG-11	United Nations Joint Logistics Center (Dubai)	Mr. Pall Hermansson	Operations Coordinator Iraq
LG-12	Dubai Ports Authority	Mr. Anwar Ahmed Wajdi	Executive Director - Commercial
LG-13	Dubai Ports Authority	Mr. Jan Bak	Senior Manager, Sales & Marketing
LG-14	Dubai Ports Authority	Mr. Abraham Mathew	Sales Executive
LG-15	Embassy of Japan in Kuwait	Mr. Katsuhiko Takahashi	Counsellor, Deputy Chief of Mission
LG-16	General Administration of Customs (Kuwait)	Mr. Ibraheem A. Al-Ghanim	Director General
LG-17	Japan International Cooperation System	Mr. Tokumitsu Kobayashi	Head, Procurement Management Division, Grant Aid Management Department
LG-18	Kuwait Ports Authority	Capt. Ahmad M. Saleh	Director M. O. Dept., Shuaiba Port
LG-19	Kuwait Ports Authority	Capt. Abull Aziz Jamal M. Jamal	Asst. Director Marine Operations, Shuwaikh Port
LG-20	United Nations Joint Logistics Center (Amman)	Mr. Anton Bilaver	Officer -In-Charge
LG-21	United Nations Joint Logistics Center (Amman)	Mr. Omar Alshikh	Fuel Planning Officer
LG-22	The United Nations World Food Programme (Amman)	Mr. Arnt Breivik	North Coordinator
LG-23	The United Nations World Food Programme (Amman)	Mr. Maarit Hirvonen	Head of Area Office
Procurement			
PR-1	UNDP	Mr. Gerard Gomez	United Nation



PR-2	WFP	Mr. Maarit Hlevonen	United Nation
PR-3	Banque Mondiale	Mr. Christian Schmidt	World Bank
PR-4	Embassy of the Republic of Turkey	Mr. Emine Lekeziz	Turkish Embassy
PR-5	Design Associate & Reserch Bureau Architect & Engineers	Mr. Maher E. Khoury	Consultant
PR-6	Adel mashharawi Co.	Mr. Adel mashharawi	Consultant
PR-7	Khatib & Alami Consolidated Engineering Company	Dr. Najib Khatib	Consultant
PR-8	Aradthec Jardaneh	Mr. Hakam S El-Bitar	Consultant
PR-9	Akad Trading Establishment	Mr. Samir Faraj Essa	Engineering
PR-10	International Communications Consulting and Construction Company	Mr. Munther Halasa	Consultant, Contractor
PR-11	Matt MacDonald	Mr. Ray Yeates	Consultant, Contractor
PR-12	International Electronic Engineering	Mr. Ibrahim Kattouah	Consultant, Contractor
PR-13	Sabah A. Faisal & Partners Co.	Mr. Nabil M. Kosayeh	Consultant, Contractor
PR-14	CC med International AG	Mr. Ahmad Al Ali	Consultant, Contractor (Medical)
PR-15	KAR Construction & vEngineering	Mr. Baz R. Kerim	Consultant, Contractor
PR-16	Allied Buisness Group	Mr. Ahehadeh S. Shehadeh	Contractor
PR-17	H. Mahmood J. Al-bunnia & Sons	Mr. Mustafa AW. M. Al-Bunnia	Contractor
PR-18	Hassan Allam Sons	Mr. M ohamed H assan	Contractor
PR-19	Al-Samana Trading Group	Mr. Ahmad Kh. Al-Gaood	Contractor, CEO
PR-20	Jordan Establishment	Mr. Mazin H. Abdul A'Al	Contractor
PR-21	Al GhaythTreading & Construction	Mr. Al Ghayth	Contractor
PR-22	Engineer Comp.	Mr. Mohamed Z. Al-Imam	Contractor
PR-23	Ayciner Co. Inc	Mr. A hamet Guroglu	Contractor
PR-24	Stroyinvestengineering Co.	Mr. Pavel Khitrukhin	Contractor
PR-25	M.G. International Trading GmbH	Mr. Enrico A Franke	Forwarder
PR-26	Oriental Shipping Co. Ltd.	Mr. Walid Abu-Hassan	Forwarder
PR-27	Hill & Associates	Mr. Andy Young	Securiti Company

**Appendix-3**  
**List of the JICA Study Team**

### List of the JICA Study Team

The following member conducted this Survey:

- Motoyuki Uegaki Deputy Director, Planning Division, Grant Aid Management Dept. JICA
- Fuyuki Sagara Planning Division, Grant Aid Management Dept. JICA
  
- Takahide Fujihira Team Leader, PCI
- Akira Takechi Deputy Team Leader, Water/Sanitation-1, PCI
- Masahiro Iwabuchi Electricity-1, NK
- Yukio Toyoshima Electricity-2, PCI
- Eiichi Ishii Water/Sanitation-2, NK (NSC)
- Yoji Ishikawa Health-1, PCI (ITEC)
- Akio Kaneko Health-2, PCI (INTER-TECHNO)
- Kenzo Miyoshi Education/Vocational Training, NK (INTEM)
- Yoshihoro Katsuhama Logistic, NK
- Makoto Harada Procurement, PCI (OPM)
- Osamu Abe Project Administrator, PCI

Note:

- PCI: Pacific Consultants International
- NK: Nihon Koei
- NSC: Nihon Suido Consultation
- ITEC: International Total Engineering Corporation
- INTER-TECHNO: International Techno Center
- INTEM: Intem Consulting
- OPM: Overseas Project Management-