

Acronyms and Abbreviations

ICI	International Compact with Iraq
ICLS	Iraq Living Conditions Survey
ITF	Iraqi Trust Fund
MDGs	Millennium Development Goals
MoA	Memorandum of Agreement
MoK	Municipality of Kirkuk
MoMPW	Ministry of Municipalities and Public Works
MPTF	Multi-Partner Trust Fund
NDS	Iraq National Development Strategy 2005-2007
PRT	Provincial Reconstruction Team
SWM	Solid Waste Management
UNOPS	United Nations Office for Project Services

FINAL PROGRAMME REPORT

EXECUTIVE SUMMARY

Kirkuk city is located in central Iraq, approximately 236 km north of Baghdad. The province of Kirkuk covers an area of approximately 9,679 km², and the population of around 820,098, as of March 2005, is comprised of different religions (predominantly Muslim and, to a lesser extent, Christian) and comprises an ethnic mix of Kurds, Arabs and Turkmen. Kirkuk is the centre of Iraq's petroleum industry and thus is strategically and economically important to the Iraqi state. After the fall of the regime in 2003, Kirkuk, like other cities in Iraq, faced serious problems in terms of addressing solid waste management (SWM) issues, not least due to the fact that the daily rate of waste production, per capita, increased significantly between 2002 (0.4 kg per day) and 2007 (in excess of 1.0 kg per day).⁵

Despite assistance from various organizations, including NGOs and international entities, the Municipality of Kirkuk (MoK), which is responsible for provision of waste management services, was unable to benefit effectively due to the lack of development of a systematic and scientific waste management system, including much needed waste collection services throughout the city.

Under Phases I and II of this project, funded by the Iraq Trust Fund (ITF), UNOPS engaged with the MoK to provide specific solid waste management service. Phase I, which closed in December 2006, was designed to provide assistance with collection and cleaning services, and Phase II (which ran concurrently with Phase I) involved the procurement of specialist machinery in support of MoK's present and future SWM activities. Despite delays due to security and funding that resulted in an extension through 2007 and 2008, Phase II ultimately succeeded in its objectives, which centered on procurement and delivery of equipment.

In close cooperation with the Ministry of Municipalities and Public Works (MoMPW), and in direct coordination with the Kirkuk Governor's Office, the project supported the Municipality of Kirkuk in order to successfully achieve the following project objectives:

1. Establish a proper and effective system for garbage collection in the city of Kirkuk.
2. Increase employment opportunities through provision of short-term employment opportunities to vulnerable unemployed people.
3. Build capacity of the local government to effectively manage garbage collection and disposal.

The project delivered the majority of its outputs as well as outcomes, providing a noticeable difference in the solid waste management in Kirkuk. A system of garbage collection and waste management was set up and capacity building components provided a solid foundation for the subsequent phase for consolidating the acquired skills through additional capacity building components and outreach.

Due to the relative success achieved by UNOPS in Phase I and II, and anticipating a worsening humanitarian situation once this Phase was closed, US authorities approached UNOPS in November 2006 to investigate if it might be possible to continue UNOPS support to Kirkuk City, by means of an extended programme. Urgent discussions took place during November and December, resulting in the funding of an extended programme (Phase III), initially for 12 months (January to December 2007). Phase III was implemented as a UNOPS project (see Final Report Phase III).

⁵ MoK figures

I. Purpose

Introduction

The Iraq Living Conditions Survey (ILCS 2004) indicated a serious deterioration in both access to and quality of water and sanitation infrastructure evidenced by declines in most basic indicators. The deterioration was rather severe in the solid waste collection and disposal services. Littered streets, garbage spilling over in vacant plots and crude dumping sites present on the outskirts of urban areas were clear signs of that. In the light of these issues, the overall aim of the project was to reduce the health risks to the population of Kirkuk caused by accumulated solid waste and rubble in the city by establishing an effective system of garbage collection and developing sustainable public services in the area of waste management and rubble removal. In addition, the project aimed to increase employment, build capacity for key staff within the administration of the municipality, and raise the awareness of the Kirkuk citizens on waste disposal and hygiene. The project has had a positive impact on the population of Kirkuk governorate (around 820,098 as of March 2005) and its multi-ethnic groups of Kurds, Arabs, Turkmen and Christians. All of these communities are equally affected by the accumulated garbage and rubble problems in the residential areas of the governorate as well as the high unemployment.

Main Objectives and Expected Outcomes

In close cooperation with the Ministry of Municipalities and Public Works, and in direct coordination with the Kirkuk Governor's Office, the project supported the Municipality of Kirkuk in order to achieve the following project outcomes:

1. Establish a proper and effective system for garbage collection in the city of Kirkuk.
2. Increase employment opportunities through provision of short-term employment opportunities to vulnerable unemployed people.
3. Build capacity of the local government to effectively manage garbage collection and disposal.

II. Assessment of Programme Results

i) Narrative reporting on results:

Pre-Project

Kirkuk city, with a population of 518,038 at the time of the start of the project, has been faced with a critical security situation that has hindered proper delivery of public services such as rubble and garbage handling. As a consequence, piles of rubble were spreading along the main roads leading to Erbil, Sulaymaniyah and Baghdad. This rubble was the remnant of destroyed buildings and military camps that had been disposed close to residential areas without proper treatment. At the same time, piles of garbage had accumulated throughout Kirkuk city in residential areas, along the streets, parks and inside the markets. In many cases, the small concrete garbage containers were full of garbage with garbage spread around the containers indicating that these had not been emptied for weeks.

At the start of the project, there were two dump sites for garbage located along the roads to Erbil and Sulaymaniya where there was a very poor disposal mechanism consisting of a superficial landfill in the small surrounding valleys. The garbage could be seen on the ground with easy access for people and animals. The Services Department in the Municipality of Kirkuk was the body responsible for collection and treatment of residential and commercial garbage. The department was working with very poor capacity with a lack of a sufficient number of garbage trucks, tractors, containers and other heavy machines used for collection and treatment of garbage. Out of 35 garbage trucks and other heavy machines, 27 were stolen during the fall of the regime in 2003. At this point, the garbage collection and treatment services were stopped for 3 months which resulted in the accumulation of piles of garbage throughout the city. After the resumption of services, the MoK could not cope with the needs due to a lack of capacity. Therefore the garbage problem was still a major problem affecting the city and the lives of its population. Furthermore, as the Governor of Kirkuk pointed out, the budget allocated by the Iraqi

government to Kirkuk governorate was too limited and could not cover all needs for basic services such as solid waste collection and disposal.

The production of domestic waste in the city was estimated at approximately 500 tons per day. The capacity of the municipality was to handle around 10 percent of this amount due to the lack of garbage trucks, tractors, heavy machines and labourers. DAI had managed the garbage collection in the city for a period of 4 months covering 100%, but it stopped its activities completely after this period. UNDP was then managing the garbage collection in a number of quarters inhabited by IDPs which covered only 5% of the city.

In 2003, UNICEF initiated a \$300,000 project for the proper treatment of garbage in dumpsites. However, this project stopped shortly after initiation as the UN moved out of the area due to the deteriorating security situation.

During UNOPS coordination meetings with the Municipality Department, it was estimated that some additional 800 unskilled labourers equipped with garbage collection trucks and tools would be needed to increase the capacity of the service delivery to an acceptable level. The unskilled labourers should be selected from the vulnerable, unemployed population covering all ethnic groups and in full compliance with the current Iraqi Labour Law.

Besides the garbage and rubble issue, there was a lack of hygiene awareness to prevent garbage from being thrown everywhere and endangering the public health in the city. Therefore, two distinct groups were identified among the workers: a group of workers equipped with garbage collection trucks and tools to increase the capacity of the service delivery to an acceptable level and another group, which would be involved in the Community Health and Hygiene Awareness Campaign. The awareness campaign should focus more on females since garbage handling tends to be their primary responsibility within the households, and students in the primary, intermediate and secondary schools. Identified vulnerable adolescents between the ages of 15-18 years would also be engaged, but only in Awareness Campaign activities, thus providing them with the opportunity to participate actively in the project while receiving training under a monitored and protected environment.⁶ The sustainability of the project would be improved, as the adolescents that participated in this project, could be involved in similar projects in the future. They would have been trained and would have gained efficient field work experience. These young people could also be used as consultants for similar projects after the life of the project.

Project Implementation

Although initially the project envisaged the MoMPW through the Municipality of Kirkuk as the direct implementing partner, during the inception workshop (April 20 – 21 2006), it was agreed by all stakeholders that the Kirkuk Governor's Office would be the interlocutor between UNOPS and the other implementing partners due to the need to involve several local departments in the project activities. The MoA was agreed and signed between UNOPS and the Governor of Kirkuk on May 25, 2006 which allowed project activities to commence in June.

For procurement, standard UNOPS procurement procedures were followed, and competitive bidding process were applied in case of all contracts awarded. UNOPS procured goods and services in close collaboration with the Clients, Iraqi authorities, and beneficiaries.

For monitoring, the works were initially supervised and monitored by MoK personnel, with UNOPS advice and guidance. By the end of the project, support for the activities of the project was maintained through the assistance of the Provincial Reconstruction Teams (PRT). They began actively monitoring and evaluating the activities in 2007, while UNOPS reduced monitoring activities to build capacity of the local partners. UNOPS maintained full monitoring responsibilities for the procurement elements of the project. Monitoring of procurement was carried out according to UN standard systems.

⁶ The first principle implies that countries whose economic and educational facilities are insufficiently developed, the age can be set initially at 14. The second principle is that for hazardous work the minimum age is 18 years. The work deemed to be hazardous shall be determined by national laws by the authority.(ILO Convention 138)

Contribution of key national, international, inter-UN agency, CSO and other partnerships

Institutional partners on behalf of the Government of Iraq: Ministry of Municipalities and Public Works (MoMPW), Municipality of Kirkuk (MoK), Kirkuk Governor's Office, Kirkuk Department of Health, Kirkuk Department of Education

- **UNOPS** / Executing UN Agency was responsible for:
 - The overall project management cycle, including technical and financial management, technical guidance and assistance, and coordinated monitoring and supervision;
 - The provision and management of funds for removal of accumulated garbage and rubble piles, garbage collection, disposal and treatment activities;
 - The provision of garbage collection, disposal and treatment equipment;
 - The provision of waste management training courses envisaging the preparation of pilot Solid Waste Management Plan for Kirkuk City; and
 - The provision and management of comprehensive awareness campaigns.
- **MoMPW**, through its Directorate in Kirkuk, was involved in project monitoring and verification process.
- **Kirkuk Governor's Office** / UNOPS official Interlocutor was responsible for:
 - Institutional coordination with Municipality of Kirkuk, Kirkuk Department of Health, Kirkuk Department of Education; and
 - Financial endorsement of services for garbage collection activities being provided by the MoK Services Department.
- **Municipality of Kirkuk (MoK) / Services Department** / UNOPS main implementation partner. With the technical support and in close coordination with UNOPS, the MoK was responsible for:
 - Conducting the needs assessment and mapping of city sectors (indicators of quantities and sort of domestic and industrial solid waste accumulated and produced by sector and site), and for the subsequent development of the required tools (required human resources and equipment, and respective personnel and fleet management plans) that constitute the core garbage collection framework sustaining the on-going activities;
 - Sustaining the data collection and information management regarding the solid waste generated, collected, dumped and treated;
 - The enrolment, mobilization and management of labour force and equipment for removal of accumulated garbage and rubble piles, garbage collection, disposal and treatment activities; and
 - The development of management tools and required pilot solid waste management plan for Kirkuk city.
- **Kirkuk Department of Health / Kirkuk Department of Education** / In close cooperation with UNOPS health awareness specialist, the departments were responsible for implementing the awareness campaigns.

Outcomes

Project Outcomes

The planned outcomes of this project were:

1. Establish a proper and effective system for garbage collection in the city of Kirkuk.
2. Increase employment opportunities through provision of short-term employment opportunities to vulnerable unemployed people.
3. Build capacity of the local government to effectively manage garbage collection and disposal.

Outcome 1 was achieved through the removal of garbage and rubble to dumpsites outside of the city, as well as the facilitation of and resulting adherence to daily garbage collection. The originally planned equipment was procured and delivered to the municipality; training sessions were held for municipality staff and engineers; a system for garbage collection in the city was set up; and workers were recruited

and equipped with the proper work clothes and training. There were delays in the procurement of machinery and some machinery did not reach the project until just in time for Phase III to start.

The setting up of an improved system for garbage handling and waste management within the city and at the dump sites, as well as the training and equipping of workers and the municipality with the proper garbage collection tools holds promises of sustainability beyond the life of the final phase of the project.

For outcome two, the project delivered as planned. It is hoped that the short-term trained workers, now with experience within the sector, will continue their employment with the municipality.

For outcome three, the municipality staff was trained as originally planned. In Phase III, it was found that the staff were in need of additional training before the municipality can be deemed to be fully capable of managing the city's SWM requirements alone. Phase III activities were planned that focused further on building and developing capacity throughout the municipality structure, with particular attention being paid to the Solid Waste Department. A health hygiene awareness campaign was also designed as planned. However, the campaign was not carried out during Phases I and II due to deterioration in the security situation at the time. It was later successfully carried out during Phase III involving, among other things, more than 4,000 house calls, and an educational comic booklet, flyers, leaflets and t-shirts.

Overall, due to the replacement of the equipment and heavy machinery resulting from the procurement elements of this project and the improved capacity of the MoK to hire a large number of unskilled workers to clear the backlog of rubbish collected, the MoK has been able to make significant progress towards restoring a functional waste collection system.

Overall contribution of the Project to the NDS, Iraq UN Assistance Strategy, ICI, and MDGs

The project outcomes are in line with the UN Assistance Strategy to Iraq and in full support of the Iraqi National Development Strategy 2005-2007 endeavoring towards achieving the pre-2003 service level, through:

- Contributing to the objectives of **UN Cluster A** (Agriculture, Natural Resources and Environment), and **UN Cluster D** (Health and Nutrition) to enhance environmental sustainability and public health conditions, in line with the NDS. This project reduced the immediate health risks to the population of Kirkuk caused by the piles of garbage and rubble accumulated within the city boundaries, and promoted a healthier environment by establishing a sustainable garbage management system for the Kirkuk Municipality along with increasing awareness among the Kirkuk population.
- Contributing to the objectives of **UN Cluster C** (Governance and Human Development), in line with NDS, to enhance institutional capacity and promote employment and income generation opportunities across all sectors of society. This project provided technical, operational and management support to the Municipality of Kirkuk, as well as solid waste management training for key selected officials from all involved institutions, and by supporting public work schemes on garbage collection activities, envisaging the job creation, training and partial retention by the public sector, in particular the Municipality of Kirkuk.
- Contributing to the objectives of **UN Cluster E** (Infrastructure and Rehabilitation) to rehabilitate basic infrastructural services, in line with the NDS, by improving the scope, capacity and quality of the services provided by the Municipality of Kirkuk regarding the solid waste management cycle.

The ICI identifies four pillars of sustainable development in Iraq. This project falls under the third pillar of 'improving the quality of life starting with the provision of basic services' (ICI, p. 12). The details are listed under point 4.4 'Human development and human security' in which it is spelled out how strengthening basic service delivery is linked to income generating activities, enhanced capacity of sub-national governance institutions, as well as the non-discriminatory access to basic services.

The project outcomes furthermore supported the achievement of:

- MDG 7: “Ensure Environmental Sustainability”
- MDG 4: “Reduce Child Mortality”, by reducing water beds contamination, therefore improving access to clean water and consequently enhancing the general health condition of the population.
- MDG 1: “Eradicate Extreme Poverty and Hunger”, by promoting and supporting the creation of employment, providing income generation opportunities, in particular to vulnerable groups.

Outputs

Output 1.1: Removal of piles of rubble and garbage

The following activities were planned under Output 1.1:

- 1.1.1 Removing 15,000 m³ of garbage in 1 to 2 months using hired heavy machines;
- 1.1.2 Removing 10,000 m³ of rubble in 1 month using hired heavy machines.

The following results were achieved under Output 1.1:

- The collection and disposal of garbage commenced on July 1, 2006, and by the end of December 2006, when Phase I closed, the following quantities of rubble, putrescent waste, and garbage was removed and disposed of safely:
 - Garbage removal: 74,945 tons
 - Rubble Removal: 10,926 m³
 - Swept urban roads: 150 km
- By the end of Phase III (from March 2007 through June 2008), the following additional quantities were removed:
 - Garbage removal: 252,484 tons
 - Rubble Removal: 11,445 m³
 - Swept urban roads: 788.65 km

Output 1.2: Machineries and Equipments Supplied to the Municipality of Kirkuk

The following activities were planned under Output 1.2:

- 1.2.1 Purchasing 7 garbage trucks and 1 bulldozer;
- 1.2.2 Purchasing 70 garbage containers and 1500 half barrel containers, up to Kirkuk Municipality design;
- 1.2.3 Purchasing and distributing 300 garbage collection tools and black plastic bags to be distributed to 32 quarters.

The following amendments were made to the original activities:

- The original number (7) of required garbage trucks to be supplied for garbage collection and disposal, under the sustainable solid waste management system, was increased to 18, including both skip loaders and garbage compactors. Eleven were delivered in Phase I and 7 in Phase II.
- The MoK requested that the allocated funds for procurement of the bulldozer as well as spare parts for an existing bulldozer were instead utilized for procuring additional garbage and skip loader trucks. These heavy machinery were required to handle rubble collection and disposal, and waste treatment at existing dumpsites, which was a priority in Phase I;

The following items were delivered to the Municipality of Kirkuk under Output 1.2:

- 8 6-ton capacity skip loaders, ML170E24H
- 8 16-ton capacity garbage compactors
- 8 tractors with trailers
- 150 3m³ capacity steel garbage containers

- 1500 half barrel containers
- 200 400-L capacity galvanized garbage containers
- 200 600-L capacity galvanized garbage containers
- 630 garbage collection tools

Output 1.3: Establishing a proper system of garbage collection

The following activities were planned under Output 1.3:

- 1.3.1 Maintaining and protect labour health through providing specified uniform, plastic boots, gloves, masks and tools;
- 1.3.2 Re-allocating the garbage trucks according to the city quarters according to the specified time table;
- 1.3.3 Distributing black plastic bags, in symbolic price, to all the quarters on three-month basis;
- 1.3.4 Distributing garbage containers in accordance with the need of the crowded quarters and IDP camp sites;
- 1.3.5 Using insecticide after the garbage collection;
- 1.3.6 Establishment of a proper system for garbage treatment in the dumping sites.

The following amendments were made to the original activities:

- Activity 1.3.1 was postponed until Phase III of the project to coincide with the postponed community outreach and awareness activities (see Output 3.2)
- The quarterly distribution of black plastic bags was cancelled by the MoK and funds were re-allocated.
- The use of insecticide after garbage collection was cancelled by the MoK and funds were re-allocated.

The following results were achieved under Output 1.3:

- Garbage trucks were reallocated throughout the city, and collection routines (every second day) were established in city sectors No 1, 2, 4, 5, 6, 7 and 9
- Garbage containers were distributed as planned;
- A proper system for garbage treatment in the dumping sites was established.

Output 2.1: Public work schemes to clean the city from garbage through cash for work activities outlined and implemented

The following activities were planned under Output 2.1:

- 2.1.1 Support the regular garbage collection and city cleaning activity;
- 2.1.2 Assisting Municipality of Kirkuk in planning and developing of the public work schemes.

Both activities were completed successfully. The planning and development of the public work schemes was done during capacity building trainings held in Amman for MoK staff.

Output 2.2: Short term employment created for 800 labourers for a period of 6 months

The following activities were planned under Output 2.2:

- 2.1.1 Hire and deploy 800 labourers for 6 months duration to assist with garbage collection activity in the city
- 2.1.2 Hire 70 2-Ton trucks to assist in the garbage collection

The following results were achieved under Output 2.2:

- Hired and deployed 830 labourers for 9 months duration
- Hired 70 2-Ton trucks

Output 3.1: Strengthen the Capacity of the Municipality Department Staff through training

The following activities were planned under Output 3.1:

- 3.1.1 Opening training courses to 20 engineers of the Municipality Department in and outside the country in areas of management, planning and garbage treatment methodologies.
- 3.1.2 Establishing regular cooperation between the central (MoMPW) and local level in the field of solid waste management and with regard to the National Plan for Solid Waste Management to be developed by the MoMPW.

The following results were achieved under Output 3.1:

- 20 municipality staff were successfully trained in areas of management, planning and garbage treatment methodologies on 1-5 April 2007 as planned.
- Nevertheless, it was found that MoK staff were in need of additional training, so activities were planned in phase III that focused further on building and developing capacity throughout the municipality structure, with particular attention being paid to the Solid Waste Department.

Output 3.2: Raise community health awareness regarding dealing with garbage

The following activities were planned under Output 3.2:

- 3.2.1 Establishing mobile teams consisting of adolescents to aware the community on the hazardous of waste and good handling of garbage. (Peer education approach)
- 3.2.2 Production and distribution of booklets, posters and other publication materials in support to hygiene awareness campaign
- 3.2.3 Broadcasting cleaning campaign through radio and TV channels.
- 3.2.4 Raising community awareness through religious features.

The following results were achieved under Output 3.2:

- The health and hygiene awareness campaign was designed and planned however, the implementation was shifted to Phase III of the project due to security reasons and limited time of the previous phases. In addition, the education department's involvement in the project was more visible in the last phase. Several budget revisions took place during the implementation of the project, to respond to the justified demands of the Municipality of Kirkuk which affected the time schedule and nature of deliveries.

Beneficiaries

The direct beneficiaries of this project have benefitted from employment in the project and training, while the indirect beneficiaries have benefitted from improved service delivery of the municipality and improved health conditions. Furthermore, the municipality directly benefitted from the machinery and equipment and set up of systems it received throughout the project.

Direct Beneficiaries included 20 engineers, 115 monitors and supervisors, 830 workers, and 20 municipality staff.

Indirect Beneficiaries were the population of Kirkuk governorate (around 820,098 as of March 2005) and its multi-ethnic groups of Kurds, Arabs, Turkmen and Christians. This project has had a positive impact on all of these communities, which are equally affected by the accumulated garbage and rubble problems in the residential areas of the governorate as well as suffering from the high unemployment

Qualitative assessment

The overall assessment of the project is positive. The project delivered the majority of its outputs as well as outcomes, providing a noticeable difference in the solid waste management in Kirkuk. A system of garbage collection and waste management was set up and capacity building components provided a solid foundation for the subsequent phase for consolidating the acquired skills through additional capacity

building components and outreach. The original timeframe for the project was extended several times due to security concerns as well as a delay in funding. One component was taken out of Phases I and II entirely and introduced into Phase III following the deterioration in the security environment. The final phase of the project (Phase III) ended in 2009 and it remains to be seen how the continued application of the garbage collecting and waste management system will be carried out and maintained.

Key Partnership and Interaction Between Agencies

- The Municipality of Kirkuk (MoK) was directly responsible for selecting, hiring and assigning labour and equipment for rubble removal and disposal and for garbage collection, disposal and treatment, and respective schedules, with the required endorsement of the Kirkuk Governor's Office, and with the technical support and supervision of UNOPS.
- In coordination with the MoK, the Departments of Health and Education are responsible for selecting and assigning volunteers and hiring support staff required for the awareness campaigns.
- Activities, as mentioned above, were planned in coordination with UNOPS and the outputs reported by MoK and Departments of Health and Education, accordingly;
- Technical support, site supervision / monitoring, disbursement and overall monitoring and reporting were provided by UNOPS;
- UNOPS was directly responsible for international and local procurement and freight of equipment to Kirkuk, conducting the environmental impact assessment for the treatment of "dumpsites", and selecting and contracting a training provider and to organize the logistics for MoK selected staff, and to develop strategies and materials to conduct the awareness campaigns.
- Activities, as mentioned above, were being planned in coordination with MoK and Departments of Health and Education, and the outputs were being reported by UNOPS, accordingly;
- Overall engagement for the planned activities, technical specifications for required equipment, and nomination of selected staff and required training modules, and the scope and target groups for awareness campaigns, were being provided by MoK and Departments of Health and Education.

Contribution of the Project to Cross-Cutting Issues:

- **Vulnerable or marginalised groups:** Workers were hired amongst the lower income groups covering the various ethnic groups. Women were employed as part of the awareness outreach activities to ensure that the outreach reached female household members. Garbage collection took place in the entire Kirkuk area also covering the areas of the vulnerable groups.
- **Gender:** Local cultural conditions prevent women from being directly employed in garbage collection activities, which is considered a role for men within the Iraqi society. The Awareness Campaigns on household garbage handling and disposal were carried out by women for women. In this way the project involved and informed women.
- **Environment:** All efforts have been made to improve the natural environment of Kirkuk. The garbage collection, and safe disposal and treatment of hazardous waste were in essence focused on improving the environmental conditions and the resulting effect on public health. The Capacity Building and awareness exercise contributed to equipping, enabling and empowering the community in this regard, while the equipping of the municipality to perform garbage collection and disposal was directly benefitting the environment. Environmental concerns were at the heart of this project. Eliminating accumulated garbage and rubble has had direct positive effects on the environment of Kirkuk, particularly, when residential areas are concerned. But parks, markets, and streets, which represent usual play grounds for young children, were also heavily contaminated and were thus also of major concern and targeted.
- **Employment Generation:** The employment creation of 830 local labourers, from all ethnic groups, for a minimum of six months has had an impact. The ongoing external support and subsequent retention of trained workers will ensure sustainability of all project outcomes.

ii) Indicator Based Performance Assessment:

	<u>Achieved Indicator Targets</u>	<u>Reasons for Variance with Planned Target</u> (if any)	<u>Source of Verification</u>
Outcome 1: Establish a proper and effective system for garbage collection in the city of Kirkuk			
Output 1.1: Removal of piles of garbage and rubble Indicator 1.1.1: Rubble removed from the streets on a regular basis	10,926 m ³ of rubble cleared		Number of trucks unloaded at the dumpsite per day Volume of rubble removed
	74,945 tons of garbage cleared		Number of trucks unloaded at the dumpsite per day Volume of garbage removed
Indicator 1.1.2: Garbage removed from the streets on a regular basis			
Output 1.2: Equipment supplied to the municipality Indicator 1.2.1: Amount of equipment purchased and delivered to the municipality Planned Target: Procure and deliver: 7 garbage trucks, 1 bulldozer, 70 garbage containers, 1,500 half barrel containers, 300 garbage collection tools to 32 quarters	Procured and delivered: <ul style="list-style-type: none"> • 8 Skip loaders, • 8 Garbage compactors, • 8 Tractors, • 150 steel 3m³ containers, • 1500 half barrels containers, • 200 400-L capacity galvanized garbage containers, • 200 600-L capacity galvanized garbage containers 	The original number (7) of garbage trucks was increased to 18, including both skip loaders and garbage compactors. Eleven were delivered in Phase I and 7 in Phase II. The MoK requested that the allocated funds for procurement of the bulldozer as well as spare parts for an existing bulldozer were instead utilized for procuring additional garbage and skip loader trucks. These heavy machinery were required to handle rubble collection and disposal, and waste treatment at existing dumpsites, which was a priority in Phase I.	List of equipment purchased and delivered to the municipality Equipment delivery reports
	No garbage tool kits were procured	The original requirement for supplying of garbage collection tools was removed from the budget, once it was agreed that these would be supplied by MoK. Funds were reallocated to other priorities.	List of equipment purchased and delivered to the municipality
Output 1.3: Establish a proper system for garbage collection Indicator 1.3.1: Number of plastic bags distributed Indicator 1.3.2: Number of containers put in place	Plastic bags were not distributed under this project by request from the MoK	This component was cancelled by the Municipality of Kirkuk and funds reallocated to other priorities	Approved distribution lists
	Distributed garbage containers as planned		Approved distribution lists Field staff reports on quality assurance and compliance with contractual obligations.

Outcome 2: Increase employment opportunities through provision of short-term employment opportunities to vulnerable unemployed people.			
Output 2.1: Public work schemes to clean the city from garbage through cash for work activities outlined and implemented Indicator 2.1.1: Drafted schemes	Assisted municipality in planning and developing the public work scheme. This was achieved throughout the capacity building trainings held in Amman for MoK staff		Field staff reports on quality assurance and compliance with contractual obligations.
Output 2.2: Short term employment created for 800 workers for 6 months Indicator 2.2.1: Number of people employed	Hired 830 labourers for 9 months		Payment lists / pay slips Municipality reports
Outcome 3: Build capacity of the local government to effectively manage garbage collection and disposal.			
Output 3.1: 20 municipality staff trained in areas of management, planning and garbage treatment methodologies Indicator 3.1.1: Number of municipality staff completing the courses	20 municipality staff trained 1-5 April 2007		Training reports
Output 3.2: Health hygiene awareness improved through awareness campaigns implemented by the local authorities through media, religious features, and mobile teams Indicator 3.2.1: Establish mobile outreach teams Indicator 3.2.2: Produce and distribute booklets, posters. etc as part of awareness campaign Indicator 3.2.3: Radio and TV campaign completed Indicator 3.2.4: Complete awareness campaign	This output was not fully achieved under this phase.	The health and hygiene awareness campaign was designed and planned under Phase II. However, the implementation was shifted to Phase III once it was confirmed the project had been extended. This was due to security concerns as well as the priority of garbage removal and equipment procurement priorities during Phases I and II.	Final report of Phase III (see attached).

iii) Evaluation, Best Practices and Lessons Learned

An important component in the delivery of project outputs was site inspections of cleared areas as well as inspections and analyses of dump sites. UNOPS established a project office in the UN Compound in Erbil, from where daily implementation operations were conducted, with additional support provided from the UNOPS Iraq office, situated in Amman, Jordan. Due to security restrictions, the Project Manager was based in Erbil, making infrequent visits to Kirkuk. The Site Engineer was based full time in Kirkuk, and the Team Leader, while based predominantly in Erbil, made regular (weekly) visits to Kirkuk to assist the Site Engineer in managing and coordinating activities, as well as interacting with the beneficiaries.

Progress meetings on the delivery of planned outputs and the capacity of the municipality to take over activities were held regularly. After Phase I, the project review made it clear that the capacity of the municipality to take over the responsibilities of garbage clearing and waste management were not sufficient. As a result, in Phase III of the project, activities were designed to further strengthen the capacity building of municipality officers as well as the broader population in the catchment area. Training and outreach activities were designed to increase the sustainability of the garbage handling system that was set up in Phases I and II.

Since Phases I and II primarily focused on setting up a garbage handling and waste management system, oral evaluations were conducted during evaluation meetings with the project management team to take stock and advise on a possible third phase. A formal final report at the end of Phase III was produced, which sums up the outcomes of the entire project. The report is attached to this document.

Project Delays and Extensions

The project did suffer delays and subsequently faced several extensions.

- Security was the main reason for the delay in the implementation of the project
- Non-availability of professional technical staff at the municipality level also delayed the implementation of key components
- Strengthened communication mechanisms between the governor and municipality office could further improve the progress of implementation
- Due to a delay in the release of the funds, Phase II was postponed until April 2007. During that time between the end of Phase I funds and the beginning of Phase II funds (December to April) preparation for Phase II activities were undertaken.

Lessons Learned and Best Practices

Supervision: The local municipality authorities must develop enhanced systems for monitoring and supervising all SWM activities. The most important tool required is a regular reporting system from field staff to the head of the Solid Waste Department. This will enable the department to track implementation progress and create a balance between sectors, in terms of manpower and equipment – as well as reacting to emergencies.

Coordination: There is a need to strengthen the relationship between the municipality and the Governor's office. The stronger this link is, the more it will have a positive impact on implementation progress. Furthermore, close coordination and cooperation with the Governor's office will likely result in the allocation of additional resources to support continuation of such a project.

Allocation of responsibilities: There is a need to ensure the right person is at the right place at the right time. Technical staff involved in implementation and monitoring of the project should be employed following a transparent and technically proficient recruitment process. Individual relevant experience and an appropriate technical background should be the key elements for the selection process.

Health & Hygiene: Conducting regular Health and Hygiene awareness courses for the community will assist in minimizing the quantity of domestic waste from households thereby supporting indirectly the municipality's SWM process, as well as reducing the incidents of SW related infections and diseases. The Benefit – Cost ratio makes this a particularly worthwhile activity under such a project.

Personnel Support: The Ministry of Municipality and Public Works should be fully encouraged to support the local municipality with permanently placed employees, to help overcome the present situation, whereby only temporary assignments can be handled by municipality staff. An immediate benefit would be overcoming the shortage of truck drivers, caused by only short term assignments being made at any one time.

Financial Support: There needs to be considerable effort made by the donor and the implementing agency, to engage with the MoMPW to ensure long-term, sustainable funding is allocated, specifically for continued SWM operations, on completion of the project. All the benefits of a successful project can be immediately undone, should this not be the case. Qualified technical staff should be involved in the preparation of similar project proposals in consultation with the counterparts. Permanent staff should be based in the field during the project, which would ease the communication with the beneficiary and improve monitoring of the implementation. Regular meetings to be set up with the implementing partners for better monitoring and implementation of the project.

Security

The main constraints experienced were related to security conditions in Kirkuk. Security conditions and the ongoing insurgency limited the ability for a proper assessment of the work sites and the work of the workers in all areas.

Sadly, the project lost five staff related to the project working on Phase III due to an explosion, which demonstrated the risks that garbage collection and outreach activities posed to the staff. Piles of garbage have even been seen to contain explosives.

The municipality continued to show a high level of capability and capacity to assist in project activities, particularly for local required services. This relationship was maintained during the lifetime of the project.