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**FINAL NARRATIVE REPORT  
IRFFI/UNDG IRAQ TRUST FUND (UNDG ITF)**

<p style="text-align: center;"><b>Participating UN Organization(s)</b></p> <p>UNITED NATIONS OFFICE FOR PROJECT SERVICES –(UNOPS)</p>	<p style="text-align: center;"><b>Sector(s)/Area(s)/Theme(s)</b></p> <p style="text-align: center;">WATSAN</p>																
<p style="text-align: center;"><b>Programme/Project Title</b></p> <p>Rehabilitation of Water Distribution Systems in Sidakan and Rawanduz</p>	<p style="text-align: center;"><b>Programme/Project Number</b></p> <p style="text-align: center;">E3 - 12a</p> <p>UNDG ITF ATLAS Project Number: 66878</p> <p>UNDG ITF ATLAS Award Number: 54878</p>																
<p style="text-align: center;"><b>Programme/Project Budget</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>UNDG ITF:</b></td> <td>USD 2,496,475</td> </tr> <tr> <td><b>Govt. Contribution:</b></td> <td>USD - Nil</td> </tr> <tr> <td><b>Agency Core:</b></td> <td>Nil</td> </tr> <tr> <td><b>Other:</b></td> <td></td> </tr> <tr> <td><b>TOTAL:</b></td> <td>USD 2,496,475</td> </tr> </table>	<b>UNDG ITF:</b>	USD 2,496,475	<b>Govt. Contribution:</b>	USD - Nil	<b>Agency Core:</b>	Nil	<b>Other:</b>		<b>TOTAL:</b>	USD 2,496,475	<p style="text-align: center;"><b>Programme/Project Location</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Region (s):</b></td> <td>Towns of Sidakan and Rawanduz</td> </tr> <tr> <td><b>Governorate(s):</b></td> <td>Erbil Governorate</td> </tr> <tr> <td><b>District(s)</b></td> <td>Soran District</td> </tr> </table>	<b>Region (s):</b>	Towns of Sidakan and Rawanduz	<b>Governorate(s):</b>	Erbil Governorate	<b>District(s)</b>	Soran District
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<p style="text-align: center;"><b>Final Programme/ Project Evaluation</b></p> <p><b>Evaluation Done</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>Evaluation Report Attached</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Evaluation report attached in Annex B</p>	<p style="text-align: center;"><b>Programme/Project Timeline/Duration</b></p> <p><b>Overall Duration</b></p> <p>Starting Date: March 2007</p> <p>Completion Date : June 2009</p> <p><b>Original Duration</b></p> <p>Starting Date: 08/03/2007</p> <p>Ending date:31/01/2008</p> <p><b>Programme/ Project Extensions</b></p> <p>The first extension was approved on 18/03/2008 till 08/06/2008.</p> <p>The second extension was approved on 16/06/2008 till 31/12/2008.</p> <p>The third extension was approved on 11/11/2008 till 31/03/2009.</p> <p>The Fourth extension was approved on 25/02/2009 till 30/06/2009.</p> <p>The overall project was handed over on the 13<sup>th</sup> of May 2009 and the 7<sup>th</sup> of July 2009 for Rawanduz</p>																

and Sidakan respectively

## I. PURPOSE

### a. Introduction

The existing water network of both towns dates back to the 1970s. Due to gross negligence of maintenance of the existing system and lack of funding for further development of the system to improve the supply, the supply situation in both towns have been seriously affected. In addition, the rapid increase of the number of inhabitants during the past few years (caused by an influx of internally displaced persons choosing to resettle in this relatively safe area of Iraq) resulted in an over load of the existing system to meet the quantitative needs of the current population.

### b. Programme/Project outcomes and associated outputs as per the approved Project document:

#### Key Immediate Objective/s:

1. To significantly augment the quality and quantity of water supplied to 10,000 consumers in Sidakan town and 20,000 consumers in Rawanduz town by constructing replacement reservoirs and rehabilitating and extending the existing transmission and distribution mains utilising improved pipe materials and jointing techniques to reduce maintenance costs for the life of the new pipe system.
2. To provide a comprehensive purpose-developed training course in water supply network design and management to at least 30 technical staff of the Directorate of Water and Sanitation so as to improve quality and efficiency throughout the whole management cycle (planning, execution, monitoring) for service provision.

#### Outputs

- 1.1 30,000 consumers will have improved quantity and quality of water available brought about through reduced contamination and a reduction in losses in the pipe distribution system.
- 1.2 Short-term employment creation for over 150 construction workers for a period of 9 months.
2. Thirty 30 government employees are able to pass on their knowledge to others and to plan, implement, monitor and manage water supply projects in the urban areas demonstrated by improved on-the-job monitoring of operational sustainability issues to support service delivery and policymaking functions

**c. List of UN Assistance Strategy Outcomes, MDGS, Iraq NDS Priorities, ICI benchmarks relevant to the programme/project:**

The development goal of the project is to contribute towards improving the public health of the inhabitants by increasing the availability of safe drinking water in an effort to achieving the Millennium Development Goals set by the UN.

The project directly contributes towards achieving MDG Goal 7: “Ensure environmental sustainability” by reducing the proportion of people without access to safe drinking water and improved sanitation.

The project contributes to some extent towards the attainment of MGD’s 4: Reduce child mortality; and to Goal 6: Combat HIV/AIDS, malaria and other diseases. Child mortality is improved and the incidence of malaria and other diseases is reduced through improved access to safe and adequate supplies of drinking water.

The project is in line with the International Compact With Iraq (ICI) under section 4.4.1.5 and 4.4.2 Environment, Water & Sanitation, Housing.

By significantly augmenting the quality and quantity of water, the project also contributed to the achievement of the UN Assistance Strategy for Iraq, Water and Sanitation Sector Outcome 1: “Increased sustainable access to safe water for urban and rural populations in 10 governorates especially the vulnerable.”

**d. Primary implementing partners and stakeholders including key beneficiaries:**

MMPW – Ministry of Municipalities and Public Works are implementing partners and stakeholders. Sidakan and Rawanduz towns’ populations are the key beneficiaries.

## II. ASSESSMENT OF PROGRAMME/ PROJECT RESULTS

**a. Key outputs achieved:**

The key out puts achieved are as follows:

1. 30,000 consumers are receiving improved quantity and quality of water through reduced contamination and a reduction in losses in the pipe distribution system. This has been achieved by connecting water sources through the transmission system to the service reservoirs, rehabilitating and laying 30,5 km of pipeline and constructing 750 cum water tank.
2. Created short-term employment for over 150 construction workers for a period of 9 months.
3. Trained 10 government employees on planning, implementation, operation and maintenance of the water supply system in the urban areas. This is demonstrated by the improved on-the-job monitoring of operational sustainability issues to support service delivery and policymaking functions.

Initially, it was planned to train 30 personnel but due to delays in implementation the cost of the training component went up considerably, and as a result only 10 personnel were trained from the Water Authority.

The training was conducted from the 14<sup>th</sup> to the 19<sup>th</sup> of December 2008 for 10 representatives from Sidakan and Rawanduz Water Authorities.

The Training was conducted in Amman - Jordan by the highly experienced training center (ENGICON) on design concepts of new networks or expansion of networks, use of new materials and techniques to develop, rehabilitate, operate and maintain the water distribution networks, as well as the need to understand the concept of 'unaccounted for water' and methods of reducing unaccounted for water (UFW), leakage detection and repairs. An intensive programme directed towards the engineers/supervisory management staff was also conducted.

The project progressed well in collaboration with the local water authorities. The people of Sidakan and Rawanduz were the main beneficiaries and were also involved in the implementation of the project through their participation in the construction activities.

The selected contractor was flexible and had the required capacity to implement the project expeditiously under extremely challenging circumstances such as changes of layout in Rawanduz Town, change of water source in Sidakan Town, houses being extended illegally across the foot path intended for pipe laying, etc. The contractor succeeded in completing the construction of 750 cum water tank in Sidakan, and the laying of networks in both towns despite the difficult situation. In the process, employment was generated for over 150 labourers and 2 engineers & 5 technicians.

**b. How achieved outputs have contributed to the achievement of the outcomes:**

The outcomes of the project are summarized as follows:

- Network losses were reduced.
- Attainment of the project outcomes associated with the reduction in the incidence of water borne diseases will take some time to become evident
- Physical works on the water supply mains for the population of the town was guaranteed for the foreseeable future through training capacity building activities provided for 10 engineers from the Water Authority.

**c. Overall contribution of the programme/ project/ to the ICI, NDS, MDGs and Iraq UN Assistance Strategy:**

By significantly augmenting the quality and quantity of water supplied to 10,000 consumers in Sidakan town and 20,000 consumers in Rawanduz town, the project contributed to the UN Assistance Strategy for Iraq, Water and Sanitation Sector Outcome 1: "Increased sustainable access to safe water for urban and rural populations in 10 governorates especially the vulnerable."

The implementation of the project contributed towards improving the public health of the inhabitants by installing a system able to deliver safe drinking water thereby addressing the Millennium Development Goals set by the UN.

The project directly contributes towards achieving MDG Goal 7: "Ensure environmental sustainability" by reducing the proportion of people without access to safe drinking water and improved sanitation.

The project contributed to some extent towards the attainment of MGD's 4: Reduce child mortality; and to Goal 6: Combat HIV/AIDS, malaria and other diseases. Child mortality is improved and the incidence of malaria and other diseases is reduced through improved access to safe and adequate supplies of drinking water.

The project supported the priorities in the International Compact With Iraq (ICI) section 4.4.1.5 and 4.4.2 Environment, Water & Sanitation, Housing.

**d. Contribution of key partnerships including national, international, inter-UN agency, CSO or others towards achievement of programme/ project results:**

The project was designed in full cooperation with the Ministry of Municipalities and Public Works (MMPW) and the Directorate of Water and Sanitation. The Government has shown particular interest and provided continuous assistance in making available all details and personnel to assess the requirements as well as handing over the studies previously done by other governmental ministries, consultants and contractors in order to facilitate the work of UNOPS on the ground.

**e. Contribution of the programme/ project on cross-cutting issues:**

Improved access to water benefited both men and women equally. Women and children are usually tasked with the responsibility for collecting water for the household. Improvements in the water supply system are expected to directly benefit some members of this group of consumers.

Interestingly, during implementation, it has been noted that female heads of households are cooking food to sell to construction workers on site. It is expected that such an important development contributes to employment creation and thus income generation in these areas and might also become an option for a number of women that reside along the pipeline routes while pipes are being laid. Men benefited from construction works during the implementation as daily labourers.

There was no negative environmental effect in and around the project area cause to implementation of this project,

There was no specific security related incidents during the project implementation.

More than 150 labourers and 6 engineers from the local area were employed on the project during the project implementation period.

**f. Assessment of the programme/ project based on performance indicators as per approved project document using the template in Section IV**

As seen in the attached template in Section IV, the quantity of water supplied per day per beneficiary is 70 lpd as planned in the beginning of the project. This was achieved by connecting water sources through the transmission system to the service reservoir.

In the beginning, it was estimated that 30,000 beneficiaries would receive the improved quality and quantity of water, however, after implementing the planned activities of rehabilitating 14,5 km of pipeline and constructing 750 cum water tank, savings of funds resulted in the chance to lay another 16 km of distribution of mains in both towns. Due to this additional work the number of beneficiaries increased to 35,000.

The additional works taken up in both towns resulted in employment for the local community for a longer period than expected.

The only component which could not be achieved as planned was the training of 30 personnel from the water authorities. This was due to the increase in the cost of the training and related expenses for the training. The planned target of training was thus only 33% achieved.

Refer the template in Section IV for details.

### **III. EVALUATION & LESSONS LEARNED**

**a. Assessments, evaluations or studies undertaken relating to the programme/ project and how they were used during implementation. Has there been a final project evaluation and what are the key findings? Provide reasons if no evaluation of the programme/ project have been done yet?**

The project was designed with full cooperation from the Ministry of Municipalities and Public Works (MMPW) and the Directorate of Water and Sanitation.

The Government authorities were interested in the project and provided continuous assistance to the project assessment by making available all necessary details and personnel to assess requirements. They also handed over studies done previously by other ministries, consultants and contractors which facilitated the work of UNOPS on ground.

Upon a request by the water authorities, UNOPS carried out an additional survey from the source to the water tank in Sidakan Town to make sure the water reaches the tank from the source. Initially, the transmission system was designed without carrying out the longitudinal survey to make sure the water reaches the tank. During implementing, this was done to make sure that the transmission system maintained the required hydraulic gradient line to push water to the tank.

Following the successful model established for other projects, a similar mechanism recently implemented in Iraq by UNOPS, representatives of the Ministry of Municipalities and Public Works and the Directorate of Water and Sanitation were invited to form part of a committee that provided oversight to project execution and ultimately sign off a project acceptance. UNOPS national project staff supported and facilitated meetings of this committee.

Evaluation of the project was done during March 2010. The key findings are:

1. The project is delivering the expected outputs ie. improving the supply of water to the people of Sidakan and Rawanduz.
2. A feasibility study should have been done for the project before considering its implementation.
3. Missing data on whether or not the project actually contributed to the improvement of water quality and contributed towards improving public health conditions in Sidakan and Rawanduz towns.

The evaluation report is attached with this report for ready reference.

**b. Key constraints including delays (if any) during programme/ project implementation**

UNOPS worked hand in hand with Soran District and Sidakan and Rawanduz towns Water Authorities for the implementation of the project. This helped UNOPS to carry out a smooth hand over of the project site to the contractor for implementation and final handing over of site to beneficiaries. However, due to their daily work in maintaining and keeping the services functioning for the public, the local authorities were not always in a position to extend their attention to solve particular problems arising during project implementation which at times caused some delays to activities. This needs to be considered during the project proposal preparation to avoid extension of projects.

This project was originally foreseen to have a duration of 9 months, with a project end date of January 2008. However, its implementation was delayed for the following reasons:

1. The original workplan was based on (a) the government's instruction to use a certain water source and (b) on a number of preparatory assessments and estimations for this specific water source. After project approval, based on strong opposition/resentments from the local community, which the Iraqi counterparts were unable to dispel, the authorities in consultation with UNOPS changed their decision and advised to use a different water source (new location was 3 km away from the original source). The project had to conduct new assessments, prepare new Bills of Quantities, technical specs for the RFP, etc.

In addition to the point above, the location of the new source is in very difficult terrain in the mountains. It was therefore necessary to conduct a technical survey which made it necessary to involve a technical expert etc. This too consumed considerable time which was not included in the original project work plan.

However, delays due to above mentioned fact were successfully mitigated through extensive meetings with local authorities and the contractor's approach to work in shifts in order to compensate for the delays.

2. Initially, the project budget was \$2,496,475 for Sidakan and Rawanduz towns. Out of this amount, \$2,000,000 was for construction works, and the remaining for implementation expenditure. During the bidding process extreme care has been taken to qualify/include the contractors from the project area in addition to other regions. This helped in getting very competitive bids and to implement the works at a total cost of \$ 1.1 million under the budget.

During the project progress review meeting at Erbil Office in January 2008, the Sidakan and Rawanduz Water Authorities expressed that there was a need for additional works with the laying of pipelines in both towns. The requirements were discussed with Erbil Water Authorities to make sure they were absolutely necessary to improve the water distribution. UNOPS understood that such a slight extension of the project scope would enhance the supply distribution in the towns and protect the source from pollution. Therefore, the project was extended to implement the additional works.

3. A delay in providing drawings from the water authority delayed the bidding process and the over all implementation of the additional works.
4. The force majeure (weather conditions) played a crucial role in delaying the project implementation. In January/February 2008, heavy snow fall in the mountain region of Sidakan (where the source is located) delayed the laying of the pipeline for more than 3 months.

In late 2008, the works for construction of a fence (Compound wall) around the source to protect from pollution due to usage of domestic animals. Several technical meetings were conducted in Erbil water directorate to set the work plan for a smooth implementation process.

**c. Key lessons learned that would facilitate future programme design and implementation**

Following are the lessons learned during the project implementation:

1. Water Authorities are fully occupied with their daily activities of water supply operation and maintenance to manage the supply of water to the public. Therefore, it is required to identify a separate person from the authority to deal with the day to day implementation difficulties.
2. Laying and jointing of PE pipes using butt/electro fusion would help to complete the project considerably in less time compare to other material such as CI, DI pipes.
3. Conduct an independent assessment prior to establishing the project design, from both the technical and community perspectives.

#### IV. INDICATOR BASED PERFORMANCE ASSESSMENT

	<b>Performance Indicators</b>	<b>Indicator Baselines</b>	<b>Planned Indicator Targets</b>	<b>Achieved Indicator Targets</b>	<b>Reasons for Variance (if any)</b>	<b>Source of Verification</b>	<b>Comments (if any)</b>
<b>IP Outcome 1</b>							
To significantly augment the quality and quantity of water supplied to 10,000 consumers in Sidakan town and 20,000 consumers in Rawanduz town							
<b>IP Output 1.1</b> 30,000 consumers will have improved quantity and quality of water available	Indicator 1.1.1 Quantity of water supplied per day per beneficiary	NA	70 litres/day	70 litres/day		<ul style="list-style-type: none"> <li>On ground UNOPS site engineers' reports</li> <li>Erbil water directorate records</li> </ul>	Achieved as Planned
	Indicator 1.1.2 No. of beneficiaries served by improved quantity and quality of water	NA	30 000	35, 000+	Provided supply to more than the estimated beneficiaries by laying additional 16 km distribution line in both the towns.	<ul style="list-style-type: none"> <li>On ground UNOPS site engineers' reports</li> <li>- Erbil water directorate records</li> </ul>	Achieved as planned
<b>IP Output</b>	Indicator	NA	33750days	42300 days	This was	<ul style="list-style-type: none"> <li>On ground</li> </ul>	

<b>1.2</b> Short-term employment creation for over 150 construction workers for a period of 9 months	1.2.1 Person –days of employment generated				due to additional works of laying of 16 kn Distribution mains taken from the fund savings.	UNOPS site engineers' reports <ul style="list-style-type: none"> <li>• Contractor's labour payment records/ payslips</li> </ul>	Achieved as planned
<b>IP Outcome 2</b> To provide a comprehensive purpose-developed training course in water supply network design and management to at least 30 technical staff of the Directorate of Water and Sanitation							
<b>IP Output 2.1</b> Thirty gov. employees are able to pass on knowledge and plan, implement, monitor and manage water supply projects in the urban areas	Indicator 2.1.1 Training person-days	NA	100 days	33days	Increase in prices was the reason to reduce the number of participants	<ul style="list-style-type: none"> <li>• Sidakan and Rawanduz Water Authority</li> <li>• Training providers records</li> <li>• Contracts with training institute</li> <li>• Training completion report</li> </ul>	Achieved only 33% of the planned capacity building.