



UNDG Iraq Trust Fund

ANNUAL PROGRAMME¹ NARRATIVE PROGRESS REPORT

REPORTING PERIOD: 1 JANUARY – 31 DECEMBER 2009

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Country and Thematic Area

Iraq,
Agriculture and Food Security SOT

Programme No: A5-21

MDTF Office Atlas No:

Project Number: 66925

Award Number: 54925

Programme Title: “Rehabilitation and Conservation of Kahrez systems in Northern Governorates”

Participating Organization(s):

UNESCO-Iraq Office

Implementing Partners:

- Ministry of Water Resources of both Central Government and KRG

Programme Budget (from the Fund):

US\$ 1,600,628

¹ The term “programme” is used for programmes, joint programmes and projects.

Programme Duration (in months):

Start date²: April 2007

End date: 30 September 2010

Original end date: 30 July 2008

- Revised end date, if applicable: 30 September 2010
- *Operational Closure Date³, if applicable: 30 September 2010*

Budget Revisions/Extensions:

List budget revisions and extensions, with approval dates, if applicable:

- 1- 1st Extension: The project was extended till January 2009.
- 2- 2nd Extension and Budget Revision: The project was extended December 2009. The approval was received on 9 February 2009.
- 3- 3rd Extension and Budget Revision: The project was extended until 30 September 2010. The approval was received on 12 December 2009.

² The start date is the date of the first transfer of funds from the MDTF Office as Administrative Agent.

³ All activities for which a Participating Organization is responsible under an approved MDTF programme have been completed. Agencies to advise the MDTF Office.

NARRATIVE REPORT

I. Purpose

a. Main objectives, outcomes, outputs of the programme.

The project aims to improve the supply of water for drinking and for irrigation in rural areas of the northern governorates through the rehabilitation and conservation of traditional aqueduct structures, called *karez*. The immediate objectives are to (1) rehabilitate and conserve karez water systems; (2) build technical capacity in the long-term rehabilitation and maintenance of traditional karez systems; and (3) build networking with concerned institutions in the region to share the information and experience in the traditional water systems.

Outcomes of the Programme/Project:

1. karez water systems rehabilitated and conserved;
2. technical capacity enables long-term rehabilitation and maintenance of traditional karez systems; and
3. information and experience shared in the northern region of Iraq on the rehabilitation, conservation and management of karez systems.

Outputs of the Programme/Project:

- 1.1. Selected karez systems rehabilitated
- 1.2. Rehabilitation and conservation plan developed for further rehabilitation and long-term conservation
- 1.3. Short-term employment created
- 2.1. Selected community members trained to operate and maintain the system
- 2.2. Awareness raised on the proper use of the system
- 2.3. Technical capacity of experts, technicians, enhanced
- 2.4. Operating policies and procedures for managing the rehabilitated sections put in place
- 3.1. A network with regional and international experts established in order to ensure continuous exchange of information and expertise on Karez systems for the long term conservation

b. Explain how the Programme relates to the Strategic (UN) Planning Framework guiding the operations of the Fund.

UN Assistance Strategy for Iraq

This project's objectives fall within the Water and Sanitation and Agriculture Clusters of the joint UN Assistance Strategy for Iraq by promoting an increased sustainable access to safe water for urban and rural populations, especially for the most vulnerable (Outcome 1); supporting the rehabilitation and extension of water systems (Output 1.1.); enhancing capacities for effective management of WATSAN (Outcome 3); and developing capacities at national and governorate level for planning, implementation, monitoring and evaluation (Outcome 3.2.). In agriculture, the project promotes the enhancement of production and productivity in the agricultural sector (Outcome 1) and the rehabilitation of irrigation and infrastructure in selected areas (Output 1.1.).

MGDs

This project contributes to MDG Goal 7, “Ensure the environmental sustainability”, by promoting the use of traditional karez systems in the rural areas as a sustainable technology. In particular, the project addresses the loss of environmental resources and promotes the access to sustainable, safe drinking water.

ICI

The project addresses the following goals within the ICI:

4.4.1.5 Environment, Water & Sanitation, Housing:

Goal: improve access to water and sanitation by one third

2. Undertake specific measures to ensure universal access to services (wat/san, housing, etc.)

4.6. Agriculture and Water Management Strategy

Goal: To support the development of the agriculture sector to achieve food security, generate employment, diversify the economy and preserve the countryside

4. Improve institutional and regulatory underpinnings of public agriculture

Iraqi National Development Strategy

The project addresses the following goals within the NDS (2007-2010):

(Target) (8): Full access to water and health services for all people

Support for future plans in agriculture:

11. Using renewable underground water in all agricultural and livestock breeding fields without being consumed through digging wells in promising areas.

Main priorities in agriculture:

b. Restoration of irrigation infrastructure

f. Rehabilitating irrigation, drainage and soil maintenance projects as a base for production increase in one hectare

i. Organizing irrigation projects in a way securing agriculture requirements and achieving sound irrigation system

Main priorities in water and sanitation:

d. Improve water quality and upgrade the water distribution networks.

f. Provide adequate crude water resources for all regions of Iraq.

II. Resources: Financial Resources:

Information on other funding resources available to the project, if applicable.

N/A

Budget revisions approved by the appropriate decision-making body

The project's original timeframe envisaged an implementation period of 22 months (1 April 2007 until 31 January 2009) and has subsequently been extended three times; first extension (6 months) to 31 January 2009; second extension (11 months) to 31 December 2009; and third and final extension (9 months) to 30 September 2010.

The training budget component has been decreased from US \$114,600 to US \$63,811 (44%) since only one major capacity-building activity remains to be implemented (by an implementing partner). No revision for equipment or miscellaneous were needed. The funds were reallocated to the following budget components for the following reasons:

Contracts: The cost of restoring karez targeted by the survey is less than originally planned, and savings are expected.

Personnel: US \$93,518 has been allocated to cover the funds to cover costs associated with project management, support and consultants until Sept 2010.

Travel: Close supervision and restoration monitoring, as well as training activities required an increase of US \$15,584 for staff travel.

Security: An increase of US\$ 3,056 was needed to cover the cost of life support and hazard needed for the increased presence in Iraq for project supervision during the extended period.

Resources: Human Resources:

- a) National Staff: 1 National Staff GS level full time Other National Staff working on Operations Support Functions co-shared on pro-rated partial basis.
- b) International Staff: One International Programme Manager

III. Implementation and Monitoring Arrangements

a. Summarize the implementation mechanisms primarily utilized and how they are adapted to achieve maximum impact given the challenging operating context.

UNESCO has been implementing project activities in close collaboration with the KRG Ministry of Ministry's Directorate of Irrigation and Surface Water are the key recipients of technical training, and have been instrumental in implementation.

The project has relied on the training services and technical advisory capacities of UNESCO's Institute for Qanats and Historical Hydraulic Structures (ICQHS) in Yazd, Iran. Furthermore, training of local community members takes place on site and through the recruitment of labour.

b. Provide details on the procurement procedures utilized and explain variances in standard procedures.

Surveying equipment has been procured by the project for the purpose of pre- and post-renovation testing of the water quality and quantity (to determine the project's impact on water supply). The supplier of the equipment was chosen on the basis of international bidding process, and the equipment was delivered using logistical assistance on the ground by staff of UNESCO and MoWR. (See below a description of problems incurred for this process).

c. Provide details on the monitoring system(s) that are being used and how you identify and incorporate lessons learned into the ongoing project.

Monitoring of the project is being done through close collaboration with the implementing partners (KRG MoWR). Technical advice is provided by both experienced engineers in the MoWR and by experts in the UNESCO ICQHS in Yazd, Iran. Trips to the northern governorates to monitor project implementation are taken by the project manager when necessary. In addition, UNESCO maintains separate M&E plans for each project which are to be updated monthly.

d. Report on any assessments, evaluations or studies undertaken.

The project undertook a comprehensive scientific survey of the location, state and condition of karez in the region from July to September 2009. The significant results of the survey not only provide a baseline for both the project and government programs, but also provide a new impetus for the project to target karez on the basis of urgency, need and feasibility.

IV. Results

Summary of Programme progress in relation to planned outcomes and outputs; achieved versus planned outputs during the reporting period.

Output 1.1:

Selected karez systems rehabilitated

Restorations suspended from May to October 2009 to complete karez survey and plan (baseline and plan). Restoration of model karez in the community of Sheikh Mamudian (near Erbil) began on 2 Nov 2009. By 31 December, work was nearly complete and water discharge had returned. The restoration of the karez is expected to be completed on 7 January 2010. List of remaining karez finalized (19), restoration being planned and organized with the Ministry. Restoration of remaining karez expected to be completed by September 2010.

Output 1.2:

Rehabilitation and conservation plan developed for further rehabilitation and long-term conservation

Due to the urgent need to update the understanding of karez in the region and to address the limited capacity and understanding held by the KRG, a comprehensive “Survey of Infiltration Karez of Northern Iraq” was undertaken from June to August 2009. The survey found that Iraq’s karez are far more numerous than previously expected (683 in total), most (85%) are located in the Sulaymaniyah Governorate, and most lie in disrepair (only 115 kahrez are still flowing in August 2009). Furthermore, it was revealed that a loss of 70% of the active karez have dried up since the onset of drought in 2005, causing the displacement of an estimated 100,000 people. The survey also estimates that 36,000 people still depending on karez are on the verge of being forced to evacuate if conditions do not urgently improve. The survey identified 50 communities that meet the criteria for immediate restoration, which can help alleviate the insecurity and pressure to evacuate. The urgent situation was confirmed by the project manager through several visits to some of the villages. For example, the isolated village of Kuna Flusa was observed to have an output of 60L/day, or about 4L per family per day. The survey findings

and conclusions help reorient the project to target karez most in need of intervention. The survey provides a basis for government restoration projects in the future and a baseline for the restoration plan. Plan delivered to KRG MoWR on 15 Sept 2009.

The survey's results generated a significant amount of interest in the Iraqi and international press, including the New York Times, the Toronto Star, Al Jazeera, BBC, ABC, Reuters and AFP.

Output 1.3:

Short term employment created

Employment of 10 local persons created so far. 400 short-term labour jobs expected to be created by September 2010 for the maintenance of 19 karez.

Output 2.1:

Selected community members trained to operate and maintain the system and awareness raised on the proper use of the system

75 community members trained so far. By September 2010, an additional 750 community members are expected to be trained on karez operation and maintenance.

Output 2.2:

Technical capacity of experts, technicians, enhanced

Team of 25 Iraqi experts have received training on basic and advanced karez restoration techniques and database management. Training took place in July 2008 and December 2009 at ICQHS (Yazd, Iran). Restoration manual planned for publication in 2010.

Output 2.3:

Operating policies and procedures for managing the rehabilitated sections put in place

Training on database and karez registry completed in 2008. Survey report (delivered to KRG MoWR in September 2009) provides a comprehensive database of karez and their attributes, as well as guidelines for policies and management. Guidelines have been adopted by team of karez engineers of the General Directorate for Irrigation.

Output 3.1:

A network with regional and international experts established in order to ensure continuous exchange of information and expertise on Kahrez systems for the long term conservation

KRG MoWR now represents Iraq on the technical board of the UNESCO International Center on Qanats and Historical Hydraulic Structures (Iran), ensuring a network and exchange of practices and expertise. Training, karez survey and the preparations for Karez Phase II project (2010-2012) have allowed for knowledge and experience to be exchanged among KRG experts and international counterparts. Further exchange of experience and expertise expected throughout 2010.

Key outputs achieved in the reporting period including # and nature of the activities (inputs), % of completion and beneficiaries.

Outputs expected as per approved project document	Status of Achievement				
	Fully achieved	Partially achieved	%	Not achieved	Explanation
1.1. Selected karez systems rehabilitated		20%			Restorations suspended from 5-10/2009 to complete karez survey and plan. Restoration of model karez began 2 Nov 2009, expected completion in January 2009. List of remaining karez finalized, restoration being planned and organized with community based groups. Expected restoration completed by July 2010.
1.2. Rehabilitation and conservation plan developed for further rehabilitation and long-term conservation.	100%				Survey of karez in the region (their location and condition were studied) completed, identifying karez for long-term plan. Plan delivered to KRG MoWR on 15 Sept 2009.
1.3. Short-term employment created for rehabilitation.		10%			Employment of 10 local persons created so far. 400 short-term labour jobs expected to be created by July 2010 for the maintenance of 19 karez.
2.1. Selected community members trained to operate and maintain the system, and their awareness raised on the proper use of the system		50%			75 community members trained so far. By July 2010, an additional 750 community members are expected to be trained on karez operation and maintenance.
2.2. Technical capacity of experts, technicians, promoted by training programs and workshops		80%			Team of 25 Iraqi experts have received training on basic karez restoration and functionality, and database management. Advanced training postponed until March 2010 (July course was delayed due to recent instability in Iran and availability of trainers).
2.3. Operating policies and procedures for managing the rehabilitated sections put in	100%				Training on database and karez registry completed in 2008. Survey report

place				(delivered to KRG MoWR in September 2009) provides a comprehensive database of karez and their attributes, as well as guidelines for policies and management. Guidelines have been adopted by team of karez engineers of the General Directorate for Irrigation.
3.1. Network with regional and international experts established in order to ensure continuous exchange of information and expertise on Kahrez systems for the long term conservation	100%			KRG MoWR now represents Iraq on the technical board of the UNESCO International Center on Qanats and Historical Hydraulic Structures (Iran), ensuring a network and exchange of practices and expertise. Training, karez survey and the preparations for Karez Phase II project (2010-2012) have allowed for knowledge and experience to be exchanged among KRG experts and international counterparts. Further exchange of experience and expertise expected throughout 2010.

Delays in programme implementation, the nature of the constraints, actions taken to mitigate future delays and lessons learned in the process.

The main challenges to the project thus far have been related to severe drought which caused the project's main partners (KRG MoWR engineers) to be occupied with other more important tasks; planning for quality control of the renovation works, and procurement (the Ministry misplaced part of the equipment procured by the project). Other factors include untimely response and difficult communication with the MoWR. The absence of a sitting KRG Minister of Water Resources from June to October 2009 has contributed to some delays in getting some feedback and collaboration. In the fourth quarter of 2009, the return of the rains slowed restoration of the Shekh Mamudian karez only slightly.

Key partnerships and collaborations

UNESCO has been implementing project activities in close collaboration with the KRG Ministry of Agriculture and Water Resources (formerly the Ministry of Water Resources). Engineer staff from the Ministry's Directorate of Irrigation and Surface Water are the key recipients of technical training, and have been instrumental in implementation. The project has relied on the training services and technical advisory capacities of UNESCO's Institute for Qanats and Historical Hydraulic Structures (ICQHS) in Yazd, Iran. ICQHS also provided expert advice and surveying services for the preparation of and supervision of the restoration of the Sheikh Mamudian karez.

- Other highlights and cross-cutting issues pertinent to the results being reported on.

Employment:

A key element for tackling unemployment is through the development of karez restoration and maintenance skills that should lead to job opportunities. Engineers and hydraulic companies will be skilled to contribute to the budding karez technical workforce.

V. Future Work Plan

Projected activities and expenditures for the following reporting period (1 January-30 September 2010)

Output 1.1-1.3. Restoration of 19 karez will be undertaken and concluded by September 2010. Short-term employment of 400 short-term jobs expected to be created by July 2010 for the maintenance of 19 karez.

Outputs 2.1-2.3. Training activities complete. Training manual to be published. An additional 750 community members are expected to be trained on karez operation and maintenance.

External Evaluation: An external evaluation has been planned for early autumn 2010.

Major adjustments in strategies, targets or key outcomes and outputs planned.

No significant deviations expected. Activities for 2010 are expected to take place according to identified work plan.

Main abbreviations and acronyms used in the report.

- **ICQHS:** UNESCO Institute for Qanats and Historical and Hydraulic Structures
- **MOWR:** Ministry of Water Resources (Baghdad)
- **KRG MoAWR:** Ministry of Agriculture and Water Resources

VI. Performance Indicators (optional)

	Performance Indicators	Indicator Baselines	Planned Indicator Targets	Achieved Indicator Targets	Means of Verification	Comments (if any)
IP Outcome 1: Kahrez water systems rehabilitated and conserved						
IP Output 1.1 Selected Kahrez systems rehabilitated	Indicator 1.1.1 Number of Kahrez rehabilitated	0	20	1	Progress reports, payments, photos, field missions	
	Indicator 1.1.2 Change in quality and quantity of native water supply	TBD	TBD	+	Baseline and post-rehabilitation surveys	It must be noted that the correlation between a rehabilitated Kahrez system and a positive change in water quantity and quality is not 100% established
IP Output 1.2 Rehabilitation and conservation plan developed for further rehabilitation and long-term conservation	Indicator 1.2.1 Number of Kahrez identified for further rehabilitation	0	20	20	N/A	Based on Survey results and recommendations
	Indicator 1.2.2 Strategy for longer term rehabilitation and conservation	0	1	1	General survey of the existing Kahrez systems and its situation	Based on Survey results and recommendations
IP Output 1.3 Short-term employment created	Indicator 1.3.1 Unskilled labour created	0	50 persons x 90 days	75	Progress reports, invoices, payslips, contracts	Recruitment of unskilled workers to be undertaken by the contracted party who will implement the works
	Indicator 1.3.2 Skilled labour created	0	10-12 persons x 40 days	25	Progress reports	Skilled labour will be provided mostly by the MoWR engineers who will work closely with the contractor. In this case, labour is not necessarily 'created'.
IP Outcome 2: Technical capacity built in the long-term rehabilitation and maintenance of traditional Kahrez systems						
IP Output 2.1	Indicator 2.1.1	0	750	75	Community training	MoWR and UNESCO to provide training

Selected community members trained to operate and maintain the system	Number of community members trained				participants list, MoWR report	
IP Output 2.2 Awareness raised on the proper use of the system	Indicator 2.2.1 Number of beneficiaries with improved awareness on the use of the Kahrez	0	20 communities	1	Community training participants list, MoWR report	MoWR to provide training at handover of karez to community once restoration is complete
IP Output 2.3 Technical capacity of experts, technicians, enhanced	Indicator 2.3.1 Number of technical workshops	0	2	2	Workshop reports	ICQHS, Oman workshops
	Indicator 2.3.2 Number of Ministry staff trained in workshops	0	15	25	Participants list	ICQHS, Oman workshops
	Indicator 2.3.3 Number of experts receiving practical experience	0	20	25	Progress reports, records from Ministry and/or contracting party	Selected MoWR experts will be involved in the renovation works with the contracted construction firm and guided by an outside expert. Experts will also receive training on use of surveying equipment
IP Outcome 3: Information and experience shared in the region on the rehabilitation, conservation and management of Kahrez systems						
IP Output 3.1 A network with regional and international experts established in order to ensure continuous exchange of information and expertise on Kahrez systems for the long term conservation	Indicator 3.1.1 Number of regional and international experts connected with MoWR trained staff	0	10	10	Workshop reports, participants list	Cooperation by neighboring countries (Workshop on data management organized by the Omani Government)

VII. Abbreviations and Acronyms