



ANNUAL PROGRAMME NARRATIVE PROGRESS REPORT
REPORTING PERIOD: 1 JANUARY – 31 DECEMBER 2010

Programme Title & Number
Programme Title: “Advanced Hydrogeological Survey for Sustainable Groundwater Development in Iraq (Phase I)” (E3-19); Project Number: 60473; Award Number: 76150

Country, Locality(s), Thematic Area(s)
Iraq (Water and Sanitation)

Participating Organization(s)
<ul style="list-style-type: none">UNESCO

Implementing Partners
<ul style="list-style-type: none">Ministry of Water Resources

Programme/Project Cost (US\$)	
MDTF Fund Contribution:	
US\$ 675,000	
TOTAL: US\$ 675,000	

Programme Duration (months)	
Overall Duration	12 month
Start Date	24 August 2010
	24 February 2011
End Date or Revised	31 August 2011

Programme Assessments/Mid-Term Evaluation
Assessment Completed - if applicable <i>please attach</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____
Mid-Evaluation Report – <i>if applicable please attach</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____

Submitted By
<ul style="list-style-type: none">Name: Casey WaltherTitle: Natural Sciences Programme ManagerParticipating Organization (Lead): UNESCOEmail address: c.walther@unesco.org

NARRATIVE REPORT

I. Purpose

Main objectives, outcomes, outputs of the programme.

The overall goal of the project is to collect, collate and interpret available in-country data on the physical groundwater occurrence and related hydrogeological regimes and dynamics, which are currently dispersed throughout government institutions. The immediate objectives are to ensure that: (1) GoI has an inventory of hydrogeological resources in Iraq; and (2) GoI has improved capacities for hydrogeological data collection, processing and management.

Outcomes of the Programme/Project:

1. Creation of an inventory of hydrogeological resources in Iraq for the GoI; and
2. Improvement of the capacities of the GoI for hydrogeological data collection, processing and management

Outputs of the Programme/Project:

- 1.1 Extraction of existing hydrogeological data from relevant sources including government and academic institutions, research centers, relevant studies, and the private sector
- 1.2 Creation of a centralized database containing existing hydrogeological data in Iraq
- 1.3 Establishment of a preliminary report featuring collected data
- 1.4 Analysis of current hydrogeological conditions in Iraq
- 1.5 Plan of implementation created for the advanced hydrogeological survey (Phase II)
- 2.1 Establishment of a team of hydrogeological experts
- 2.2 Enhanced capacity for the Government of Iraq to effectively monitor and manage national water resources
- 2.3 Generate connections between universities, researchers, KRG, and the Central GoI
- 2.4 Enhanced coordination between ministries and private sector partners

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 Cluster of the joint UN Assistance Strategy for Iraq by enhancing capacities for effective management of WATSAN (Outcome 1 and 2); and developing capacities at national and governorate level for planning, implementation, monitoring and evaluation (Output 2.2.).

MDGs

This project contributes to MDG Goal 1, "End poverty and hunger", by delivering crucial improvements in agricultural efficiency through improved understanding of aquifer levels and identification of areas appropriate for agricultural development. It also contributes to MDG Goal 7, "Ensure the environmental sustainability", particularly addressing target 1 and 7c by improving data and enhanced data management capacities, allow the government Iraq to develop an integrated groundwater management strategy.

ICI

The project addresses the following goals within the ICI:

4.4.1.5 Environment, Water & Sanitation, Housing:

Goal: Preserve Iraq's environment and ensure careful exploitation of its natural resources for the benefit of all citizens; Improve access to water and sanitation by one third

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

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):

7.1 Improving the Quality of Life (Goal 1: Mitigation of poverty and hunger; Goal 6: Providing full access to water)

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 6 months (24 August 2010 until 24 February 2011) and has subsequently been extended 1 time: (6 months) to 31 August 2011. The budget was revised twice: first in October 2010 to provide sufficient funds for urgent preliminary activities, due to a change in venue and methodology for the training course following requests from the Project Steering Committee (PSC); second in March 2011 due to administrative regulations that require UNESCO to utilize the contracts budget line (BL20) instead of the training budget line (BL30) when issuing contracts for training inside Iraq.

The training budget component has been decreased from US \$225,000 to US \$0 (100%) due to administrative regulations. No reduction in training activities was made. All training activities in the original work-plan remained and shifted to take place in Iraq. The funds were reallocated to the following budget components for the following reasons:

Training: Following the change to an in-country training course from the IHE course in the Netherlands, the training budget was reduced to account for the change in venue. In the first revision, the budget was reduced from US \$225,000 to \$94,600 (58%) and the funds were shifted to other budgets due to the location of the training. In the second revision, the budget was further reduced to \$0 (100%). No reduction in training activities was made.

Contracts: In the first revision, the contracts budget increased from US \$215,000 to \$314,608 (46%) to account for RTI's (the project's main contracted partner) provision of in-country training services, en lieu of the original allocation through "Training". Similarly, the contracts budget increased to US \$384,252 (22%) in the second revision as the remaining training activities will be undertaken through this budget line.

Personnel: In the first revision, the personnel budget increased from US \$120,632 to \$130,632 (33%) to account for increased travel costs to Iraq due to the change in venue and methodology for the training course. Following the second revision, a total US \$147,289 (13% increase) has been allocated to cover costs of the additional services associated with project management, support and consultants following the six-month extension.

Equipment: The PSC agreed that UNESCO would equip trainees with specialized IT equipment during the training course, requiring an increase in “Equipment” from US \$55,000 to \$75,792 (38%) in the first revision. No modification was made in the second revision.

Direct Costs: As a result of the shifting funds from the training budget line, direct costs increased from US \$20,387 to \$28,686, with no change in the first revision.

Human Resources:

National Staff:

- 1 senior staff, full time, assisting in data collection and coordination activities in Baghdad
- 1 staff, full time, assisting in data collection and coordination activities in Erbil

International Staff:

- 1 International Programme Manager
- 1 International Programme Consultant to assist in implementation and management

II. Implementation and Monitoring Arrangements

- a. 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 Federal Ministry of Water Resources (MoWR). Additionally, a number of ministries have played a vital role in facilitating the data collection process and have been trained to interpret collected data, including: Ministries of Agriculture (MoA), Industry (State Company of Geological Survey and Mining), Planning and Development Cooperation (MoPDC), Higher Education and Scientific Research (MoHESR), Oil (MoOil); and KRG Ministries of Agriculture and Water Resources (KRG MoAWR), Natural Resources (KRG MoNR), and Planning (KRG MoP).

Radar Technologies International (RTI) has served as the key implementing partner for this project, providing specialized, technical inputs and interpretation. Furthermore, a multi-disciplinary team of Iraqi experts are trained with the purpose of assisting UNESCO and RTI in implementing data collection and assessment.

The inter-ministerial team of GIS experts, aimed at enhancing government capacities in data management and in assisting the development of the UNESCO database, will become operational in February 2011. The team will be comprised of a total of twenty GIS experts and hydrologists from participating ministries. The team’s work will assist in conducting the gap analysis required to finalize the inventory and develop Phase II activities.

b. The procurement procedures utilized.

All procurement activities included in this project are implemented according to UNESCO's standard rules and procedures of international competitive bidding. Within this framework, procurement for goods up to a ceiling of \$100,000 may be undertaken directly by the Amman based team. For procurement of goods above \$100,000, a committee in Headquarters reviews and authorizes the contract in question.

c. The monitoring system

UNESCO field staff in Baghdad and Erbil regularly monitor the progress of data collection and processing. Each staff member submits a monthly report detailing activities undertaken, outcomes achieved and problems encountered. Each of these reports will be integrated as a major field input for the final evaluation. Trips to monitor project implementation and in-country training are taken by the project manager and the international consultant on a regular basis. UNESCO will perform a full evaluation of the project upon completion.

d. Assessments, evaluations or studies undertaken.

Field staff are required to develop a metadata sheet for each dataset collected from the Government or any other institution. These metadata sheets detail the type of data collected, where it was collected from, which years they cover, and a number of other important attributes that will contribute to a broad gap analysis of the database.

III. Results

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

Output 1.1:

Extraction of existing hydrogeological data from relevant sources including government and academic institutions, research centers, relevant studies, and the private sector

The collection of data began in October 2010, and is expected to conclude by 30 January 2011. Through its data collectors in Erbil and Baghdad, UNESCO has obtained data from 9 government ministries (MoWR, MoA, MoIM, MoHESR, MoPDC, MoOil, KRG MoAWR, KRG MoP and KRG MoHESR), covering all 18 governorates and several fields of hydrogeology, including hydrology, geology, land use, geophysics, climate. Data sets were provided electronically and hardcopy. The US Government (PRTs) and some UN agencies have provided some data. Major datasets include the location and attributes of over 15,000 water wells nationwide, a hydrologic atlas of Iraq, US Government constructed GIS database indicating all villages, major water infrastructure and other points of interest, and nationwide surface monitoring data from government.

Initial analysis indicates a number of gaps and issues with the well database, including inconsistency and lack of accuracy.

Output 1.2:

Creation of a centralized database containing existing hydrogeological data in Iraq

UNESCO has transferred data that is collected to the UNESCO Contractor (RTI) for processing and integration. RTI finalized the analysis and integration of Iraqi well data into the national database. An national, integrated, mosaic of hydrologic maps has been constructed by RTI in order to provide a comprehensive view of Iraq's water resources and identify data collection gaps and quality concerns.

Output 1.3:

Establishment of a preliminary report featuring collected data

UNESCO and RTI were in the process of developing a Gap Analysis report as of December 2010. The report, which includes an inventory and mapping of all data collected thus far, will provide a comprehensive assessment of Iraq's hydrogeological knowledge.

Output 1.4:

Analysis of current hydrogeological conditions in Iraq

A full analysis of the compiled database will be undertaken in the 1st quarter of 2011.

Output 1.5:

Plan of implementation created for the advanced hydrogeological survey (Phase II)

UNESCO has integrated preliminary results of the data into a developed project document for Phase II. The Phase II document has been submitted to the European Union, the main donor.

Output 2.1:

Establishment of a team of hydrogeological experts

The team will be established and trained in GIS systems, as well as data collection and management in February 2011.

Output 2.2:

Enhanced capacity for the Government of Iraq to effectively monitor and manage national water resources

The government will receive training in utilizing GIS systems for data management in February 2011. The training, combined with an integrated, web-based database, will enhance the Government's capacity to monitor and manage water resources.

Output 2.3:

Generate connections between universities, researchers, KRG, and the Central Government of Iraq

The inter-ministerial team of experts, which will bring together experts from the central government, the KRG and universities, will be established in February 2011. The Ministry of Higher Education in Baghdad and Erbil will nominate at least two experts from Universities to participate in the team. Additionally, the University of Kurdistan was added to the project steering committee to ensure input from the academic community. Universities will be invited to partake in the GIS Training session as well as the UNESCO Gap Analysis and National Validation Seminar in 2011.

Output 2.4:

Enhanced coordination between ministries and private sector

UNESCO has ensured that the Ministry of Industry is a key player in the project steering committee and all project activities. The Ministry will liaise with their private sector counterparts to ensure data and technical inputs from the private sector. In December 2010, an expert team was created by UNESCO and the government tasked with identifying seismic data and other data related to oil production for the purpose of identifying deep aquifers. This will ensure close cooperation with international oil corporations in data sharing.

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 Extraction of existing hydrogeological data from relevant sources including government and academic institutions, research centers, relevant studies, and the private sector		75%			Three months of data collection have been completed. UNESCO will undertake an additional month (January) of full-time data collection.
1.2 Creation of a centralised database containing existing hydrogeological data in Iraq		50%			All data collected by UNESCO is being collated and into a central server. Geo-coordinated data is being processed in real time and integrated into a GIS database. The final database is estimated to be completed in June 2011
1.3 Establishment of a preliminary report featuring collected data		25%			Metadata sheets of each collected datasets are being developed by UNESCO. These sheets will be compiled with an extensive review of the data to create an inventory, or directory of collected data.
1.4. Analysis of current hydrogeological conditions in Iraq		25%			Initial analysis of collected data is currently being undertaken. Analysis has focused on Iraq's National Inventory of Groundwater wells.
1.5. Plan of implementation created for the advanced hydrogeological survey (Phase II)		75%			A draft project document has been delivered to the EU. A final document, integrating project analysis and findings, will be developed as the project concludes.
2.1. Establishment of a team of hydrogeological experts				X	The team will be established and trained at the UNESCO GIS Training session in Erbil, in February 2011.
2.2. Enhanced capacity for the Government of Iraq to effectively monitor and manage national water resources				X	Capacities will be enhanced with subsequent trainings and the delivery of the database.
2.3. Generate connections between universities, researchers, KRG, and the Central Government of Iraq		50%			Representatives of universities, the KRG and Baghdad government are all on the project steering committee. Final linkages will be established with the inter-

					ministerial team.
2.4. Enhanced coordination between ministries and private sector		50%			The project has incorporated the Ministry of Industry and Oil

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

The main challenge of the project has been access to Government data. A number of participating ministries have expressed their concern with sharing data, requiring extensive procedures to gain access. The Ministry of Industry required payment for the geological data, which the Ministry of Water covered and obtained. Even once the initial obstacle is overcome, UNESCO often does not receive all pertinent data from Ministries. UNESCO is taking action to approach key players in the steering committee, including the Ministry of Water, Planning and the Prime Ministry’s advisory Council to facilitate access to unwilling ministries. UNESCO is also shifting tactics in the way it approaches ministries in data collection. The Ministry of Water and Planning will now take the lead on any data requests from UNESCO, sending an official letter from the Ministers to the concerned ministries to provide data. UNESCO liaises with the Ministry of Water and Planning to identify data needed, the Ministry then internally requests the data and UNESCO field staff collect the data.

Key partnerships and collaborations

UNESCO has been implementing project activities in close collaboration with the Ministry of Water Resources (MoWR). Experts from nine ministries across Iraq (MoWR, MoA, MoI, MoHESR, MoPDC, MoOil, KRG MoAWR, KRG MoP and KRG MoHESR) are the key recipients of technical training, and have been instrumental in implementation. The project relies on the training services, expertise, and analysis skills of RTI throughout the data collection process and subsequent analysis of the inventory.

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

Inter-Government coordination:

A key element of the project is to enhance coordination and communication between ministries on issues of hydrogeology management. Data thus far is highly fragmented, with little communication and sharing of knowledge. The steering committee, and the soon to be formed inter-ministerial team, will integrate each ministry’s available data and future data collection activities into one centralized database.

IV. Future Work Plan (if applicable)

Hydrogeological Survey Phase I Work-plan														
Main Project Outputs	Activity	Month (Launch: 24 August)												
		2010				2011								
		Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	
Data collection preparation	Procurement of additional equipment and capacities dedicated to the UNESCO project	✓												
	Training of UNESCO staff in Iraq in data collection technologies and methods				✓									
Data collection	UNESCO Data Collection in Baghdad and Erbil		✓	✓	✓									
	Monthly field visits to Iraq to collect data and ensure quality			✓	✓									
Capacity building for data collection and management	GIS Training course of 20 Iraqi experts in Erbil, Iraq on 27 February - 3 March													
National, integrated hydrogeological database	Conversion, georeferencing, digitization & integration of data			✓	✓									
Monitoring of activities	Monthly progress reports on data collection			✓	✓									
Analysis of collected data for enhanced hydrogeological management	Preliminary Gap Analysis Report submitted to UNESCO by RTI													
	UNESCO Revision of Gap Analysis Report													
	Gap Analysis Workshop with ministerial/academic experts Erbil													
	Additional Analysis & linkages established with Iraqi universities													
	Final Gap Analysis Report delivered by RTI to UNESCO													
	National Validation Seminar with Ministers, PM Office, Baghdad													
	Final validation of data													
Steering Committee	Steering Committee Meetings													
Development of Phase II	Drafting of Phase II project document, workplan and budget			✓	✓									
Finalized hydrogeological database delivered	Final database delivered and installed on remote access services, complete with gap analysis (MoWR in Erbil and Baghdad)													
Final Report and Evaluation	Final Report drafted and delivered													
	Project Monitoring report													

VIII. INDICATOR BASED PERFORMANCE ASSESSMENT

	Performance Indicators	Indicator Baselines	Planned Indicator Targets	Achieved Indicator Targets	Means of Verification	Comments (if any)
IP Outcome 1: GoI is able to manage WATSAN sector in an effective manner						
IP Output 1.1 GOI has an inventory of hydrogeological resources in Iraq	Indicator 1.1.1 Database for hydrogeological resources in Iraq designed	0	1	0	Delivery of database to the Government	
	Indicator 1.1.2 Preliminary data interpretation and gap analysis report prepared	0	1	0	Reports	
	Indicator 1.1.3 Number of technical experts from participating ministries and policy makers participating in data analysis workshop	0	20	0	Training reports and field oversight of training session by UNESCO staff	Course to be held February 2011
	Indicator 1.1.4. Need based analysis report identifying data gaps and priorities	0	1	0	Reports and verification of receipt by Gov.	
	Indicator 1.1.5. Number of technical experts and policy makers, ministries, and academic institutions participating in planning workshop	0	20	0	Training reports and field oversight of training session by UNESCO staff	
	Indicator 1.1.6. Plan of implementation drafted	0	1	0	Reports and verification of receipt by Gov.	

IP Output 1.2 GOI has improved capacities for hydrogeological data collection, processing and management	Indicator 1.2.1 A team of 20 Iraqi experts as a partner for data collection of phase 1 and 2 is established	0	1	0	Progress reports and deliverables	
	Indicator 1.2.2 Number of technical experts from participating ministries and academic institutions trained and certified on hydrological data collection, processing and management	0	20	0	Training reports and field oversight by UNESCO staff	
	Indicator 1.2.3. Percentage of trainees fully satisfied with the quality of the training in terms of relevance and usefulness	0	80%	0	Training evaluation	