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# Improving Basic Social Services in the Kurdistan Region of Iraq - Collaborative and Cost-Sharing Initiative -14 - 16 April 2008

Prepared by: UNDP Iraq Recovery and Crisis Prevention Programme

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### Improving Basic Social Services in the Kurdistan Region of Iraq - Collaborative and Cost-Sharing Initiative -14 - 16 April 2008



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# DRAFT

# Foreword

The international donor conference "Improving Basic Social Services in the Kurdistan Region of Iraq Collaborative and Cost-sharing Initiative", held in Erbil from 14 to 16 April 2008, was a major milestone in fostering a concerted partnership between the Kurdistan Regional Government, the United Nations Country Team and the International Community to address poverty reduction and socio-economic development needs in general and the causes and effects of the outbreak of cholera in the Kurdistan Region in August 2007 in particular.

The need for action is more urgent than ever. The cholera outbreak was a clear demonstration of the sub-optimal state of water supply and sanitation services. As was mentioned at the start of the conference, last year's crisis demonstrated how crucial it is to embark on concerted efforts to urgently improve the delivery of basic services to the population in the region in order that another outbreak of cholera does not occur again this year. Given the impact on the region and the world, the international community's support is called upon and the United Nations will do everything it can to support such efforts. Partnerships and cost sharing are cornerstones of the initiative.

The primary focus of the conference was to strengthen the delivery of basic social services in the Kurdistan Region, in particular in relation to integrated water management at all levels and involving all the relevant sectors in improving water supply and sanitation services. Moreover, water security is a key dimension of poverty reduction. Water has a vital role to play in responding to socio-economic development in Iraq. Although several economic instruments are being deployed to address this correlation, the success of these efforts will depend heavily on the availability of sustainable water resources. This interdependence between water availability and development is exemplified by the link between water and poverty. Due to poverty, access to sustainable water may be limited. Yet due to the inadequate access to sustainable water, high incidence of waterborne diseases may be encountered, loss of productivity, loss of employment opportunities and the subsequent socio-economic degradation illustrated by the growing endemic poverty.

The conference developed recommendations for action in three main cross-sectoral areas: (1) planning and partnerships; (2) mobilizing financial resources; and (3) capacity building and knowledge and information sharing.

We thank all participants for their hard work and commitment and the true spirit of co-operation. It is they who have made the conference a success. The outcome is truly a remarkable achievement which will not only positively influence the wellbeing of the Kurdistan Region, but hopefully further enhance solidarity and unity of action between all national, international and regional partners.

**Nechirvan Barzani** 

Staffan De Mistura

Prime Minister of the Kurdistan Regional Government

Special Representative of the United Nations Secretary General





# **\**

### 1. Introduction



KRG Deputy Prime Minister Mr Omer Fattah Addressing the Conference Participants

#### AIM OF THE CONFERENCE

Under the patronage of H.E Mr. Nechirvan Barzani, Prime Minister of the Kurdistan Regional Government and Mr. Staffan De Mistura, Special Representative of the United Nations Secretary General, an international donor conference to review and promote collaborative and cost-sharing initiatives for the improvement of basic social services in the Kurdistan Region of Iraq was held in Erbil from 14 to 16 April 2008. The conference was organized by the Kurdistan Regional Government (KRG) with support from the United Nations Development Programme (UNDP) in partnership with the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF).

Inspired by the outbreak of cholera in the Kurdistan Region in August 2007, the conference aimed at presenting the KRG's "Reduction of the Incidence of Waterborne Diseases" programme and fine-tune its action plan for improving the severely deteriorated water supply and sanitation services with a view to reduce the likelihood of future outbreaks of waterborne diseases in general and of cholera in particular. Identifying ways to effectively address the incidence of waterborne diseases and undertake preventive measures for the future constituted key questions for the conference.



United States Coordinator for Economic Transition in Iraq, Ambassador Charles Ries

#### **PARTICIPATION**

The conference was attended by more than 250 participants representing the Government of Iraq, the Kurdistan Regional Government, donors and diplomatic representations and the United Nations as listed hereunder. A full list of participants can be found in Annex III.

#### Government of Iraq

- ♦ Office of the President
- ♦ Ministry of Environment
- Ministry of Planning and Development Cooperation

#### Kurdistan Regional Government

- ♦ Prime Minister's Office
- Office for the Coordination of the UN Affairs (OCUNA)
- ♦ Ministry of Environment
- ♦ Ministry of Health
- ♦ Ministry of Labour and Social Affairs
- ♦ Ministry of Municipalities
- ♦ Ministry of Planning
- ♦ Ministry of Water Resources
- Governorates of Erbil, Sulymania and Dohuk and Relevant Technical Departments.



#### **Donors and Diplomatic Representations**

- ♦ Government of the Czech Republic
- ♦ Government of France
- ♦ Government of Federal Republic of Germany
- ♦ Government of Islamic Republic of Iran
- ♦ Government of Japan
- ♦ Government of the Kingdom of the Netherlands
- ♦ Government of the Russian Federation
- ♦ Government of the Kingdom of Saudi-Arabia
- ♦ Government of South Korea
- ♦ Government of the Kingdom of Sweden
- Government of the United Kingdom of Great Britain and Northern Ireland.
- ◆ Government of the United States of America
- United States Agency for International Development (USAID)

#### **United Nations Country Team**

- ◆ United Nations Assistance Mission to Iraq (UNAMI)
- ♦ United Nations Children's Fund (UNICEF)
- ♦ United Nations Development Programme (UNDP)
- ♦ United Nations Office for Project Services (UNOPS)
- ♦ World Health Organization (WHO)

#### **Others**

- ♦ Academia
- Consultants
- ♦ Regional Reconstruction Team (RRT)
- Information Management and Mine Action Programs (IMMAP)



#### **CONFERENCE REPORT**

This report summarizes the conference proceedings in eight Sections and three Annexes.

Immediately following this introductory section, **Sections 2 and 3** of the report present the background to the conference and an overview of the main objectives and structure.

Section 4 presents outlines of the opening session on day 1, including statements by the KRG Prime Minister, the Special Representative for Iraq of the UN Secretary General and the KRG Coordinator to the United Nations. Section 5 provides overviews of the Health, Water Resources, Environment and Municipalities sectors as presented by the respective KRG Ministers on day 1.

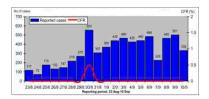
**Section 6** provides an executive summary of proposed activities/projects under Phase I of the "Reduction of the Incidence of Waterborne Diseases" programme, as presented on day 2. In **Section 7**, Briefings on day 3 by the International Community to the conference are presented, followed by closing statements by the United Nations, the Federal Government of Iraq and the Kurdistan Regional Government. **Section 8** presents the main outcomes and conclusions of the conference and proposed follow-up.

Annex I to the report presents the conference agenda, whereas Annex II presents the list of proposed priority activities/projects of Phase I of the "Reduction of the Incidence of Waterborne Diseases" programme, followed by a complete list of participants to the conference in Annex III.

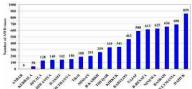
The report is intended for conference participants and all those interested in and dedicated to the revitalization of Iraqi basic social services and to the wellbeing of the people of the Kurdistan Region. Achievement of the challenging KRG programme objectives can only be achieved through the concerted and focused effort of the KRG with support from the international community.

The UNCT has undertaken to offer further support to the implementation of the KRG's programme through various possible means (i.e. advisory services, technical assistance, direct implementation, etc) and optimizing and coordinating the international community support wherever this may be required for the benefit of Iraq in general and the KRG in particular.

# 🔷 2. Background



Daily Progression of Diarrhoeal Disease Cases Reported from Sulaymaniyah Province: 23 Aug - 10 Sep 2007



### **GENERAL**

Water has a vital role to play in responding to socio-economic development in Iraq. Although several economic instruments are being deployed to address this correlation, the success of these efforts will depend heavily on the availability of sustainable water resources. On the other hand, success in economic development efforts is needed to ensure a sustainable flow of funds for the development of water supplies.

This interdependence between water availability and development is exemplified by the link between water and poverty. Due to poverty, access to sustainable water may be limited. Yet due to the inadequate access to sustainable water, high incidence of waterborne diseases may be encountered, loss of productivity, loss of employment opportunities and the subsequent socioeconomic degradation illustrated by growing endemic poverty. Accordingly, lack of access to sustainable water is both a cause and a consequence of poverty. They can be nodes in a vicious cycle that puts societies in a downward spiral of poor economic development.

Alternatively, they can be nodes in a virtuous cycle, reinforcing each other in an autocatalytic way, and leading to an upward spiral in which improved socio-economic development produces resources needed for improved development of water that, in turn, buttress and stimulate further socio-economic development.

# Reported AWD by Province

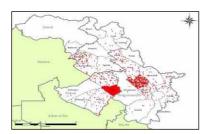
Week 9 ending 03 March

#### THE AUGUST 2007 CHOLERA OUTBREAK

Confirmation of a cholera outbreak in Northern Iraq that had the potential to rapidly become an epidemic was communicated by WHO to UNDP on 28 August 2007. In response, the UNCT established a "Cholera Response Taskforce" including WHO, UNICEF and UNDP with the purpose of identifying priority actions for concerned UN agencies to undertake in addressing the immediate needs to contain the situation. The taskforce was also requested to define short,

medium and long-term solutions to address the root causes that would prevent the likelihood of similar outbreaks in the future.

Based on extensive discussions with relevant officials, field visits, water samples testing results, event sequencing, etc., UNDP was able to confirm the current cholera epidemic outbreak to be waterborne in nature and caused by water contamination.



Map showing Cholera Affected Districts and Number of Cases in Kirkuk, Sulaymaniyah, Erbil and Dahuk Provinces of Iraq, as of 22 Sep 2007 Source: World Health Organization

Map showing Cholera affected Districts of Iraq, Map Source: as of 23 December 2007 World Health Organization



#### MODE OF WATER CONTAMINATION

The sewerage network of the city of Sulaymania, where the outbreak first occurred, is in a poor condition. This caused major leaks of the collected wastewater into the surrounding and underlying soils. Over the years, the accumulation of wastewater gave rise to contamination of the infiltration water/shallow groundwater with wastewater-inherent contaminants.

With the exponential increase in the city population and the shortage in potable water supplies, both in the city centre and the outskirts, where the coverage level by piped municipal water is estimated at only 25-30% of the population, adoption of privately owned and constructed/excavated shallow groundwater wells is widespread. Obviously these wells withdraw the contaminated shallow groundwater resulting from the leaky sewerage networks and uncoordinated pit latrines. This was confirmed by the reported cases among shallow groundwater well users.

Furthermore, given the intermittent mode of water supply (i.e. municipal water supplies are provided once every 3 to 4 days), negative pressure is developed in the distribution networks, which causes the infiltration of the

#### **SOURCE OF WATER POLLUTION**

Based on thorough examination of the various water samples testing results (from waterworks, networks, shallow wells, tanks, etc.),many of which exhibited bacteriological contamination, nitrates, etc., UNDP confirmed the source of pollution to be of

above mentioned groundwater into the water distribution networks. This is confirmed by the remarkable increase in cases upon operation of the Sarchennare Waterworks following 2 days of shutdown.

Other possible sources of pollution may include the pollution of Dokan waterway by the sewage outfalls from Dokan village upstream of the Dokan Water Treatment Facility Raw Water Intake.

Based on the above, together with examination of water supply system operating records, reports, water supply coverage levels, etc., UNDP was able to identify the primary modes of water pollution as follows:

- ♦ Infiltration of bacteriological-contaminated "groundwater" into the imperfect water distribution network, which is subsequently distributed to the population together with safe treated potable water supplies.
- ♦ The widespread use of privately owned and constructed/excavated shallow groundwater wells withdrawing contaminated "groundwater" due to shortage in municipal potable water supply, coupled with the use of pit latrines in many neighbourhoods.

domestic wastewater nature (i.e. human wastes). UNDP engineers concluded the origin of pollution to be the leaky sewerage networks entering the water table, rather than contamination of food by wastewater being used in irrigation.



Outcome of Deficient Basic Social Services and Impact on Children Wellbeing



Dokan Lake



Wastewater Outfall into Fresh Water Course



Ponding of Sewage and Solid Waste Accumulation within Residential Areas





KRG Drought Prepardness Map 2008 Source: IMMAP



Dr. Dindar Zebari, the KRG Coordinator to the United Nations

# KRG's "REDUCTION OF THE INCIDENCE OF WATERBORNE DISEASES" PROGRAMME

In response to the cholera outbreak, the KRG embarked on the formulation of a programme to reduce the incidence of waterborne diseases. The programme aims at reducing the likelihood of future cholera outbreaks in addition to addressing the broader prospective of other waterborne diseases. The programme formulation has been an ongoing endeavor since September 2007 and is undergoing continuous fine tuning.

As such, it is a custom tailored multidimensional multi-sectoral programme addressing the various time dimensions (i.e. immediate, short, medium and long term) in addition to addressing the various related sectors. These include health, water supply, sanitation, water resources, environment, electricity, education and others in a holistic manner. The programme defines specific objectives, outcomes and a wide range of activities

However, since the KRG's development plans had already been formulated to account for regional priorities, adequate resources have not yet been allocated for supporting this programme. So far, the KRG was able to divert some 20% of its existing budget

allocations, leaving a gap of some 80% for advancing the programme objectives. Nonetheless, the programme constitutes a priority for the KRG and it is against that background that the conference focused on the following sectors:

- Health (primarily non medical related sectors)
- Municipalities (i.e. water supply, wastewater and slid wastes)
- ♦ Water Resources
- **♦** Environment

As an integral part of the overall programme activities, the KRG was able to identify 82 urgent projects that have not been included in the Regional Development Plan, but which comprise cornerstones of the programme. The absence of these has been identified as imposing undue constraints to advancing the programme objectives.

During the conference, the KRG presented its proposed Phase I list of identified activities/projects that are likely to meet the envisaged Phase I outcomes with a view to seek the International Community's support in order to fill the abovementioned funding gaps.



Dokan Lake



## 3. Conference Objectives and Outline

The main objective of the conference was to present the outlines of the KRG's "Reduction of the Incidence of Waterborne Diseases" programme, fine tune the KRG's action plan in this connection and enlist the support and commitment of donor countries to the proposed Phase I of the programme activities.

The general setup of the three-day conference followed this objective by allowing the first day for opening speeches together with overall relevant sector overviews. The second day was fully dedicated for relevant KRG ministries and governorates to present a sample of Phase I of the KRG programme priority activities/projects, whereas the third day provided a forum for key donors to present their current and proposed activities in support to relevant sectors with a view to address the root causes of the recent cholera outbreak.

The conference furthermore provided an interaction forum between the various

ministries, governorates, institutions, countries, academia and so forth, to analyze the various dimensions of the problem, identify impediments and challenges, strengthen the overall programmatic approach, and identify additional areas of intervention.

As a main outcome of the conference, the overall action plan of the first phase of implementation of the "Reduction of the Incidence of Waterborne Diseases" programme was further detailed and a prioritized list of interventions was developed.

Apart from physical interventions, it became apparent that the KRG is in dire need for support in preparing a comprehensive Water and Sanitation Master Plan and an Integrated Water Resources Management Plan in order to lay adequate foundations for institutional and legislative framework development, policy formulation, downstream interventions, and so forth.



H.E. Mr Omer Fattah Deputy Prime Minister, KRG



Main Stage during the Opening Session, from left to right: KRG Minister of Municipalities, KRG Minister of Planning, KRG Minister of Water Resources, KRG Minister of Environment, UNDP Iraq Director



# 4. Day 1: Opening Statements



Dr. Abdul Rahman Yones, KRG Minister of Health Opening the Conference on Behalf of H.E. Nechirvan Barzani, Prime Minister of the KRG



Opening Statement of Mr. Paolo Lembo, UNDP Iraq Country Director, on Behalf of Mr. Staffan De Mistura, Special Representative of the United Nations Secretary General



Opening Statement of Ms. Nermin Othman, the Iraqi Federal Minister for the Environment on Behalf of Iraq's president Mr. Ialal Talabani

On behalf of H.E Mr. Nechirvan Barzani, Prime Minister of the KRG, H.E Dr. Abdul Rahman Yones, KRG Minister of Health opened the conference by reiterating the root causes of last summer's cholera outbreak and underlining the fact that a similar outbreak may be expected this summer in light of the shortage in water supplies caused by the drought Kurdistan is facing this year. He outlined the KRG's "Reduction of the Incidence of Waterborne Diseases" programme and how this programme is a multi-sectoral and multi dimensional approach addressing the various time-frames and related sectors. The programme has been designed as a flexible mechanism to allow for continuous fine tuning and adjustments as needed.

On behalf of Mr. Staffan De Mistura, Special Representative of the United Nations Secretary General, Mr. Paolo Lembo, UNDP-Iraq Country Director, underscored the fact that water has a vital role to play in responding to socio-economic development in Iraq. Although several economic instruments are being deployed to address this correlation, the success of these efforts will depend heavily on the availability of sustainable water resources. On the other hand, success in economic development efforts is needed to ensure a sustainable flow of funds for the development of water supplies.

He emphasized this interdependence between water availability and development as exemplified by the link between water and poverty. Due to poverty, access to sustainable water may be limited. Yet due to the inadequate access to sustainable water, high incidence of waterborne diseases may be encountered, loss of productivity, loss of employment opportunities and the subsequent socio-economic degradation illustrated by growing endemic poverty. Accordingly, access to sustainable water is both a cause and a consequence of poverty. They can be nodes in a vicious cycle that puts societies in a downward spiral of poor economic development. Alternatively, they can be nodes in a virtuous cycle, reinforcing each other in an autocatalytic way, and leading to an upward spiral in which improved socio-economic development produces resources needed for improved development of water that, in turn, buttress and stimulate further socio-economic development.

In his opening remarks, Dr. Dindar Zebari, the KRG Coordinator to the United Nations, stressed that in its response to the cholera outbreak, last summer, the KRG embarked on formulating the programme "Reduction of the Incidence of Waterborne Diseases". Since by the programme formulation time it was too late to include it in the regional development strategy as budget resources had already been programmed, the KRG was able to divert just 20% of its regional budget for supporting the new programme. "We are now calling for the international community's support to this initiative with a view to fill the gaps" stated Dr. Zebari.

Ms. Nermin Othman, the Iraqi Federal Minister for the Environment and representing Iraq's President Jalal Talabany, welcomed the assembled donor organizations. She commended the conference's focus on waterborne diseases, in particular cholera. "We welcome the important attention this conference will give to solving the problem of cholera in Iraq", she said.



## 🔷 5. Day 1: Sector Overviews

#### **HEALTH**

The "Approach and Relevant Sectors Overview" session started with a presentation delivered by H.E Dr. Abdul Rahman Yones, KRG Minister of Health.

Dr. Yones presentation included an outline of the causes underlying the cholera disease. A presentation of the daily progression of cholera cases in Sulaymania during August and September 2007 together with confirmed cholera cases in the same timeframe was also presented. In order to underline the impact on the national, regional and international health prospective, he presented statistical information reflecting the confirmed cases in

Baghdad until December 2007 together with the progression of cases in the eighteen provinces across Iraq. In order to emphasize the root causes, he presented results of the potable water sampling programme, based on some 4,600 samples, that illustrated contamination by organic pollutants.

At the strategy level, Dr. Yones presented the required immediate, intermediate and longterm measures to address the situation, emphasizing the fact that cholera is a "city disease" caused, among others, by overcrowding and high population densities.



KRG Ministry of Health Presentation

#### **MUNICIPALITIES**

H.E. Mrs. Nazaneen M. Wusu, KRG Minister of Municipalities, outlined MoM's mandates and areas of responsibility, which include potable water supply, wastewater and solid waste management, urban roads, land use management, policy development and capacity building. She summarized MoM's short, medium and long term plans and budgetary situation. Priorities for the year 2008 were presented with particular emphasis on potable water supply and sanitation capital investment projects across the region.

Mrs. Wusu highlighted the ministry's plan for income generation, which includes cost recovery following metering, private sector participation in solid waste management projects and collection of service fees. At the

same time, key challenges include the inability to meet water demand, deteriorated water distribution systems, inadequate coverage of urban expansions, sub-optimal wastewater systems, contamination of potable water supplies, and inadequate attention to environmental concerns. An outline of MoM's response to last summer's cholera outbreak and the ministry's preparedness plan for any future outbreaks was also presented

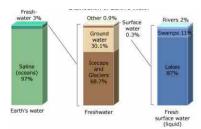
At the strategy level, Mrs. Wusu presented the immediate, intermediate and long-term measures required to address the situation and called for support of the international community to advance the KRG's programme objectives.



Mrs. Nazaneen M. Wusu, KRG Minister of Municipalities During Her Presentation



Mr. Tahsin Kader Ali, KRG Minister of Water Resources During His Presentation



Distribution of Earth's Water



Sub-Basin Classification Map

#### WATER RESOURCES

H.E. Mr. Tahsin Kader Ali, KRG Minister of Water Resources, stated that water is one of the key shared interests between nations, the protection and sustainable use of which will contribute to water security, peace and stability, and emphasized the need for a strengthened dialogue with riparian states.

He further presented the contribution of the various basins to the major water resources in Iraq and underlined the extent to which shared waters constitute a key pillar to Iraq's sustainable development. He presented the following illustrative tables:

#### Iraqi Water Resources Origin

| River       | Total Annual<br>Discharge<br>(Billion Cubic<br>Meters) | Annual Flow<br>Originating Outside<br>Iraq (Percent) | Annual Flow<br>Originating Inside<br>Iraq<br>(Percent) |
|-------------|--|--|--|
| Tigris      | 18.8   | 100  | -  |
| Khabour     | 2.2  | 58   | 42   |
| Greater Zab | 14.32  | 42   | 58   |
| Smaller Zab | 7.07   | 36   | 64   |
| Udhed       | 0.7  | -  | 100  |
| Sirwan      | 5.86   | 59   | 41   |
| Total       | 48.95  | 56 Turkey and 12<br>Iran                             | 32   |

Source: MoWR

In order to better portray the expected drought, Mr. Ali presented statistical information reflecting the grave decline in the

year 2007-2008 precipitation (i.e. rainfall), which fell below 50% of the average rate in an unprecedented manner.

#### Average Precipitation In the Kurdistan Region (2000-2008)

|              |                            | (=====)   |           |  |  |  |  |
|--------------|----------------------------|-----------|-----------|--|--|--|--|
| Location     | Average Precipitation (mm) |           |           |  |  |  |  |
| 200411011    | Average                    | 2000-2001 | 2007-2008 |  |  |  |  |
| Erbil        | 400.0                      | 295.1     | 168.3     |  |  |  |  |
| Dohuk        | 565.0                      | 199.0     | 235.0     |  |  |  |  |
| Sulaymania   | 850.0                      | 790.0     | 355.0     |  |  |  |  |
| Dukan        | 767.0                      | 462.7     | 222.0     |  |  |  |  |
| Darbandikhan | 685.0                      | 291.0     | 216.0     |  |  |  |  |

Source: MoWR

At the strategy level, Mr. Ali presented the required immediate, intermediate and long-term measures to address the situation and

emphasized the urgent need for adopting an Integrated Water Resources Management Plan.

#### Kurdistan Region Groundwater Wells Survey Results

| Governorate | No. of<br>Legal<br>Wells | No. of<br>Unregistered<br>Wells | Total No.<br>of Wells | Percentage of<br>Unregistered<br>Wells |
|-------------|--------------------------|---------------------------------|-----------------------|--|
| Erbil       | 4338                     | 2,500                           | 6,838                 | 37                                     |
| Dohuk       | 1958                     | 62                              | 2,020                 | 3                                      |
| Sulaymania  | 13,546                   | 17,230                          | 30,776                | 56                                     |
| Total       | 19,842                   | 19,792                          | 39,634                | 50                                     |

Source: MoWR

#### **ENVIRONMENT**

H.E. Mr. Dara Muhammad Amin, KRG Minister of Environment, stated that the ministry, established only in 2006, is establishing the necessary foundations for advancing operational effectiveness. He highlighted the ministry's mandates as revolving around 14 spheres ranging from policy development, planning, standards of implementation and monitoring of programmes and applying mitigation measures.

The main challenges facing the ministry include lack of adequate testing laboratories and inadequate capacities. The absence of an environmental protection legislative framework, sub-optimal awareness among the people of Kurdistan, the prevalence of land mines, pollution by radioactive substances, the absence of specialized institutions, untreated sewage, desertification and endangered biodiversity are among the major environmental challenges in the Kurdistan region.



Mr. Dara Muhammad Amin, KRG Minister of Environment Delivering the Presentation





Environmental Challenges in the Kurdistan Region





# 6. Day 2: Phase I Programme Activities



#### 6.1 General Introduction

The second day of the conference was fully dedicated for the participating ministries and governorates to present the proposed Phase I of KRG's programme activities.

Following an introduction for the second day proceedings, Mr. Zagros Fatah, Director General, Development Coordination and Cooperation, MoP, presented the formulation process of the KRG's "Reduction of the Incidence of Waterborne Diseases" programme. He reiterated that the programme was triggered by last summer's cholera outbreak in Kurdistan Region that soon spread across Iraq to the rest of the 18 provinces. Mr. Fatah stated that while the programme is still at embryonic stages and undergoing recurrent fine tuning, it represents a starting point for better aligned and coherent efforts to address the problem. The programme has been engineered in a flexible manner in order to allow for adjustments as needed.

He further stated that although the needs are immense and the gaps are wide, the presentations to follow represent a sample of the proposed Phase I interventions; the full Phase I proposed programme activities have been distributed to the participants. While the programme addresses a multi-sectoral approach covering all relevant sectors including planning, health, education, electricity and so forth, the presentations to follow will only cover those related to basic social services as outlined previously.

The second day was organized by sector whereby each presented its proposed Phase I interventions. A few exceptions apart, presentations started at the strategic level (i.e. ministry level) and then extended to the services level (i.e. Governorate level).



Mr. Zagros Fatah, DG KRG MoPDC presenting the formulation process of the KRG's "Reduction of the Incidence of Waterborne Diseases" programme



#### 6.2 Health

#### MINISTRY OF HEALTH

MoH started the session by presenting a "Water and Food Inspection" proposal. One of the major underlying causes of the recent cholera outbreak was the inadequate inspection and control of potable water supplies and, to a lesser extent, fodder items.

This project aims at monitoring the current situation as an integral element of the KRG's preparedness plan with a view to limit the reoccurrence of last summer's cholera outbreak and of other waterborne diseases. Project activities would include the

establishment of 3 field working teams of MoH's preventive health department consisting of 2 medical doctors and 1 paramedic each with the purpose of closely monitoring potable water supplies and fodder items

The project would result in direct benefits for the entire region's population totalling some 5 million inhabitants against a total estimated implementation cost of US\$ 960,000 and an implementation period of 2 years.



Dr. Abdul Rahman Yones, KRG Minister of Health Answering Questions Following the Presentation of Ministry of Health





Dohuk Governorate Official Delivering a Presentation on "Waterborne Infectious Diseases Control"

#### **DOHUK GOVERNORATE**

Dohuk Governorate presented a "Waterborne Infectious Diseases Control" proposal. In the absence of safe sanitation means in conjunction with tapped water supplies, more than 50% of the diseases and mortality rates among young children are reported to be waterborne.

This project aims at: reviewing the current Control of Diarrhoeal Diseases (CDD) programme policies and activities in Dohuk Governorate; strengthening the capacity of the medical doctors and health workers and the use of new ORS formula and zinc supplementation; strengthening the communication capacity of PHCs health workers and raising community awareness on proper personal hygiene practices. This is expected to result in the proper diagnosis and management of diarrhoeal disease cases with emphasis on preventive measures

among health workers across the governorate.

Project activities include launching a surveillance programme targeting diarrhoea cases in all health facilities, in particular registration forms tracking with respect to all diarrhoea cases and formulation of standard procedures for collection of V.C. samples from all watery diarrhoea cases.

The project would result in direct benefits for the Governorate totalling some 828,947 inhabitants against a total estimated implementation cost of US\$ 1.8 million and an implementation period of 1 year. The project is expected to generate some US\$ 12.43 million in annual savings on the region's health sector expenditures.



#### 6.3 Municipalities

#### MINISTRY OF MUNICIPALITIES

MoM started the session by presenting a "Kurdistan Region WATSAN Master Plan" proposal. The project comprises the backbone for any future work by being the only possible tool for ensuring a coherent and aligned approach. The lack of a comprehensive WATSAN master plan has led to:

- ◆Lack of a methodological approach constraining the KRG's ability to prioritize and implement its requirements
- ♦Inadequate WATSAN services are rapidly becoming critical factors that limit further economic development
- ♦Inadequate WATSAN services limit the provision of basic health and hygiene services
- ♦A WATSAN master plan is a necessity for guiding all sector related interventions in a coherent manner.

This project aims at: reducing the incidence of waterborne diseases; reducing the use of contaminated shallow wells; advancing water security for 5 million inhabitants; contributing towards environmental preservation; improving the deteriorated health and socioeconomic conditions of the region; providing

the KRG with the required planning tools for informed decision making and implementation of priority projects; complementing a cross-sectoral policy approach to respond to the growing demands for water in the context of finite supplies; coordinating the development of water supply and sanitation systems to optimize economic and social welfare without compromising the sustainability of the ecosystem; and reducing incentives for rural-urban migration.

Project activities include: data collection and records documentation; technical studies; formulation of master plan proposals; feasibility studies and environmental impact assessments; selection of master plan proposals; development of sector interventions under a phased development plan; development of sector intervention budget planning; preliminary designs and documentation for the immediate phase of implementation; and capacity building.

The project will result in indirect benefits to the entire region's population totalling some 5 million inhabitants against a total estimated implementation cost of US\$ 11 million and an implementation period of 2 years.



Active Participation of Audience Following MoM Presentation

#### **ERBIL GOVERNORATE**

Erbil Governorate presented a "Khabat, Kawrgosikl, Shakholan, Sofaya and Chama Dubz Water Supply Project" proposal. The project area is suffering from an immense shortage in water supply, resulting in the widespread use of unsafe and untreated water. Women and children, particularly girls, spend a significant portion of their day fetching water from contaminated sources, private vendors and other sources.

This project aims at: reducing the incidence of waterborne diseases through water supply assets supplying safe potable water to 60,000 inhabitants; increasing safe potable supply services by 9,000,000 litres per day; restoring wastewater services to pre-1982 levels; developing operation and maintenance capacity of the KRG WATSAN sector; creating some 25,000 man-days of temporary employment opportunities for the poor and

vulnerable segments of the population and lifting the burden of fetching water off the shoulders of women and children, freeing up time to pursue other beneficial activities.

Project activities include: preparation of project studies, designs and technical specifications; provision of 7 water treatment facilities of capacities ranging between 200 and 100 cubic meters per hour, and delivering a training programme for system Operation and Maintenance (O&M) staff.

The project will result in direct benefits for the 60,000 inhabitants of the project area against a total estimated implementation cost of US\$ 8.4 million and an implementation period of 1 year. The project is expected to generate some US\$ 900,000 in annual savings on the region's health sector expenditures.



UNDP Team Consultations in the Preparation Period

#### **SULAYMANIA GOVERNORATE**

Sulaymania Governorate presented a "Sulymania City Asbestos Water Distribution Network Replacement" proposal. The project area's water distribution network totals some 950 km of pipelines, constructed of different materials, of which 2.7% was constructed some 65 years ago. Furthermore, a significant portion of the network is constructed of asbestos cement pipelines. This results in lengthy delays for the complex repair process of any defective parts and therefore shutdown of the service until parts are sourced. Moreover, highly contaminated infiltration water tends to ingress into the imperfect asbestos cement pipelines resulting in contamination of potable water supplies.

This project aims at: reducing the incidence of waterborne diseases by supplying safe potable water to 100,000 inhabitants; restoring wastewater services to pre-1982 levels; developing O&M capacity of the KRG

WATSAN sector; creating temporary employment opportunities for the poor and vulnerable segments of the population and lifting the burden of fetching water off the shoulders of women and children, thereby freeing up time for other beneficial activities.

Project activities include: construction and equipping of all required works including replacement of some 26 km of asbestos cement water distribution pipelines by another material and delivering a comprehensive capacity building and training programme for O&M staff.

The project will result in direct benefits for the 100,000 inhabitants of the project area against a total estimated implementation cost of US\$ 4.75 million and an implementation period of 1 year. The project is expected to generate US\$ 1.5 million in annual savings on the region's health sector expenditures.

#### **DOHUK GOVERNORATE**

Dohuk Governorate presented a "Dohuk City Water Distribution Network Replacement" proposal. The Dohuk city water supply system consists of a water distribution network of some 400 km of pipelines, constructed of different materials, of which 40% was constructed some 45 years ago. The aging factor has compounded the already imperfect distribution network making repair and maintenance virtually impossible in many cases. The imperfect network results in substantial losses totalling some 40%, resulting in water shortages. Furthermore, ingress of highly contaminated infiltration water resulting from the widespread use of on-site sanitation facilities results in an alarming degree of contamination of the potable water supplies.

This project aims at: reducing the incidence of waterborne diseases; providing safe and stable potable water supply to 100,000

inhabitants; developing O&M capacity of the KRG WATSAN sector; creating employment opportunities for the poor and vulnerable segments of the population and lifting the burden of fetching water off the shoulders of women and children, thereby freeing up time to engage in other beneficial activities.

Project activities include: construction and equipping of all required works including replacement of some 100 km of asbestos cement water distribution pipelines and delivering a comprehensive capacity building and training programme for O&M staff.

The project will directly benefit 62,000 inhabitants of he project area against a total estimated implementation cost of US\$ 7 million and an implementation period of 1 year. The project is expected to generate US\$ 930,000 annually in savings on the region's health sector expenditures.



Dr. Dindar Zebari, the KRG Coordinator to the United Nations, Highlighting the Importance of the Programme: "Reduction of the Incidence of Waterborne Diseases"

### **\**

#### **6.4 Water Resources**

#### MINISTRY OF WATER RESOURCES

MoWR started the session by presenting a "Water Quality Monitoring Programme for Dokan, Darbandikhan and Dohuk Lakes" proposal. The absence of a comprehensive surface water quality monitoring programme has resulted in a lack of adequate surface water data and information, which in turn constrains proper decision making. This affects several sectors including potable water supply, agriculture and others. Against this backdrop MoWR has identified the urgent need for a comprehensive water quality monitoring programme for Dokan, Darbandikhan and Dohuk Lakes.

This project aims at: reducing the incidence of waterborne diseases; contributing towards surface water protection and therefore water security for some 1.5 million inhabitants;

improving the deteriorated health and socioeconomic conditions of the project area; providing the means and tools to the KRG for informed decision making and to better plan and implement priority projects; and increasing land available for agriculture.

Project activities include: reconnaissance and field investigations; field survey and data collection; procurement of water quality testing equipment; sampling and water analysis, and reporting.

The project will provide indirect benefits to the entire project area population of some 1.5 million inhabitants against a total estimated implementation cost of US\$ 3.3 million and an implementation period of 10 months.

#### **SULAYMANIA GOVERNORATE**

Sulaymania Governorate presented a "Groundwater Quality Mapping" proposal. Very limited attention has been paid to monitoring, development, conservation, protection, etc, of groundwater resources to date, which in conjunction with the lack of conventional sewerage systems and widespread use of on-site sanitation facilities results in heavy contamination of groundwater. Excessive extraction of groundwater results in increasing salinity levels and, hence, constrains its treatability.

This project aims at: reducing the incidence of waterborne diseases; contributing towards groundwater preservation and reducing the use of contaminated shallow wells and thereby improving water security for some 600,000 inhabitants; contributing towards

environmental preservation; improving the deteriorated health and socio-economic conditions of the project area; and providing the KRG with the necessary tools for informed decision making; and reducing incentives for rural-urban migration.

Project activities include: field survey for selecting locations for the monitoring of wells; drilling a number of monitoring wells across the governorate; data collection, and data analysis and reporting.

The project will directly benefit 600,000 people in the project area against a total estimated implementation cost of US\$ 2.25 million and an implementation period of 1 year.

#### **DOHUK GOVERNORATE**

Dohuk Governorate also presented a "Groundwater Quality Mapping" proposal. Hitherto there has been very little emphasis on groundwater quality in the Kurdistan Region. The cholera outbreak of 2007 and its diagnosis as being waterborne resulting from the use of contaminated groundwater underlines the necessity of urgent measures to be pursued with respect to aquifer mapping, monitoring their quality and overseeing their preservation and environmental protection.

This project aims at: reducing the incidence of waterborne diseases; contributing towards groundwater preservation and reducing the use of contaminated shallow wells, thereby improving water security for half a million inhabitants; contributing towards environmental preservation; improving the deteriorated health and socio-economic

conditions of the project area; providing the KRG with the necessary tools to better plan and prioritize the infrastructure projects in the Kurdistan Region; and reducing incentives for rural-urban migration.

Project activities include: field surveys for delineating aquifers and selecting monitoring wells locations; registration and monitoring of sites and areas that may induce groundwater pollution; recognition of possible groundwater divides within aquifers; drilling a number of monitoring wells across the governorate; data collection, and data analysis and presentation.

The project will result in direct benefits for some 500,000 inhabitants of the project against a total estimated implementation cost of US\$ 2.25 million and an implementation period of 1 year.



Presentation by Dohuk Governorate

#### INFORMATION MANAGEMENT AND MINE ACTION PROGRAMS (IMMAP)

IMMAP presented a "Water Resources Information Management" proposal. The KRG Water Sector currently possesses very limited IM/GIS capacity and unregistered wells are growing in number. There is an urgent need to clarify the coverage of registered and unregistered wells.

The project will provide indirect benefits to the entire Kurdistan Region population totalling 5 million inhabitants against a total estimated implementation cost of US\$ 1 million and an implementation period of 1 year.

#### 6.5 Environment

#### MINISTRY OF ENVIRONMENT

#### **Environmental Survey Programme for Dokan and Darbandikhan Lakes**



Dohuk: Dazzling Landscape

Mitigating environmental hazards is severely hampered by the absence of adequate environmental data, information and tools. The current levels of point pollution of Dokan and Darbandikhan lakes result in negative impacts on the water quality, aquatic life, agriculture and the ecosystem at large. Therefore, there is an urgent need to undertake comprehensive water environmental survey programme for both lakes.

This project aims at: reducing the incidence of waterborne diseases; Improving surface water quality and increasing water security for 1.5 million people; contributing towards environmental protection, aquatic life

preservation and ecosystem balance; improving the deteriorated health and socio-economic conditions of the project area; increasing the availability of land for agriculture; and providing the means and tools to the KRG for informed decision making, better planning and implementing priority projects.

Project activities include: reconnaissance and field investigations; field survey and data collection; and sampling and water analysis.

The project will indirectly benefit some 1.5 million inhabitants against a total estimated implementation cost of US\$ 260,000 and an implementation period of 1 year.

#### Radiation Assessment in Kurdistan Region

The absence of adequate environmental data and information on air, soil and groundwater radiation has resulted in a state of ambiguity regarding the current situation of the region in terms of radioactive contamination. Given historical incidents, MoE identified the urgent need to embark on a comprehensive radiation assessment programme for the Kurdistan Region, which can be a prelude for a larger scale survey for the whole of Iraq.

This project aims at: collecting all information pertaining to radioactivity in the region; developing the necessary sector capacities; development of proper directives (maps, reports, guidelines and public awareness programmes); laying the groundwork for a survey to cover the rest of Iraq, and ensuring compliance with International relevant standards. Upon successful implementation, the project will result in:

♦Identification of the background radiation levels and their sources.

- ♦Determination of the concentration of radioactive elements in the region.
- ◆Training of sufficiently skilled field professionals.
- ♦Production of scientifically approved radioelement maps and reports to serve in the current and future development programs.
- ♦Identification of hazardous areas and postulating measures of mitigation and rectification.

Project activities include: establishing surveying teams to cover the entire region; training team members to ensure proper execution of the programme, and collecting and analysing groundwater, air and soil samples.

The project will provide indirect benefits to the entire population of the region totalling some 5 million, against a total estimated implementation cost of US\$ 6.8 million and an implementation period of 2 years.

#### **Kurdistan Central Environmental Laboratories**

The absence of adequate environmental laboratories severely hampers MoE activities. The ability to establish pollution levels and control means and to evaluate the assimilation capacity of local environmental components is limited. Technical data required for preparing scientific inputs for KRG's environmental policies and strategic plans is largely absent. The capacity to advise decision makers environmental assessments of development plans is limited, as well as the ability to embark on new projects based on EIA (Environmental Impact Assessment) studies.

This project aims at: reducing the incidence of waterborne diseases; improving the currently

deteriorated environmental quality; contributing towards the pursuit of holistic multi-dimensional approaches for all sector interventions, and providing the means and tools for better environmental planning.

Project activities include: providing the required equipment, apparatus and reagents and delivering a comprehensive capacity building and training programme for operating the equipment.

The project indirectly benefit the entire population of the region totalling some 5 million, against a total estimated implementation cost of US\$ 7 million and an implementation period of 9 months.



Awareness Campaign in Schools Source: KRG - MoE

# 7. Day 3: Briefings by the International Community and Closing Statements and Speeches

The last day of the conference was dedicated to the International Community to brief the participants on their past and ongoing support to the KRG, as well as future plans related to the delivery of basic social services, with particular reference to water and sanitation. This was followed by closing statements of representatives of the United Nations, the Federal Government of Iraq and the Kurdistan Regional Government.

Presentations and speeches were delivered by several government officials and donor organizations including: Government of the Czech Republic; Government of Japan; Government of the Russian Federation; Government of South Korea; and Government of the United States of America. These highlighted their support to the KRG to date and their future support plans.





#### **CLOSING STATEMENTS**

Closing statements to the conference were provided by: Ambassador Talal Al-Khedery on behalf of the Minister of Foreign Affairs of Iraq, Mr. Hosyar Zebari; Mr. Ghandanfar Rafeek of the Ministry of Planning and Development Cooperation; and Mr. Mahmoud Osman, KRG Representative on the Iraq Strategic Review Board (ISRB).

All speakers thanked the hosts and organizers of the conference and were looking forward to concrete actions to follow-up on the extensive discussions during the conference.



#### **CLOSING SPEECHES**

Following the the International Community briefing and the closing statements, closing

speeches were given by the UNCT and the  $\ensuremath{\mathsf{KRG}}.$ 



#### **UNITED NATIONS**

On behalf of Mr. Steffan De Mistura, The Special Representative of the United Nations Secretary General, Mr. Paolo Lembo, UNDP-Iraq Country Director, extended his thanks to the KRG for hosting such an unprecedented and successful conference. The conference exhibited an unsurpassed participation level including KRG officials, officials from Central Government, International Community, UNCT and citizens all of which share a common vision

towards a better future for the Kurdistan region, which proves, among others, a remarkable level of partnership.

Mr. Lembo underlined that this event was very successful in delivering several messages to the UNCT not the least important of which that the UNCT needs to spearhead and coordinate the efforts of all contributors bringing the required harmony and synergy.

Underlining the importance of water to the regional, national and global economy, Mr. Lembo stated that water is everyone's business and particular attention needs to be paid to the coordinated and equitable usage of water. He further added that during the past days it became obvious that the KRG is in dire need to embark on preparing an Integrated Water Resources Management Plan that would comprises the only feasible manner in which the entire spectrum of water consuming sectors could be consolidated in a holistic and harmonized manner. This plan would be guided by the individual sectors' plans and therefore,

would catalyze the preparation of these. He further underscored the importance of paying more attention to wastewater, the "Silent Energy".

Mr. Lembo closed by kindly requesting the KRGs comments and suggestions on the initial draft of the technical paper addressing "Financing Integrated Water Resources Management, From Value to Finance", which explores new horizons for the Iraqi water sector, and which was shared with all participants, in order to custom tailor this to the KRG requirements.



#### **KURDISH REGIONAL GOVERNMENT**

Mr. Omer Fattah, the KRG's Deputy Prime Minister, said, "This event is the first of its kind in Iraq and demonstrates the proactive stance of the KRG concerning development. We appreciate the contributions of all participants", He added, "Today, we need the support of the international community not to protect us from attempted genocide, but to help us progress and achieve social development". Mr. Fattah expressed the UNCT with particular reference to UNDP for supporting this unsurpassed event.

Mr. Fattah reiterated the KRG's commitment to supporting the initiative and stated that "you are drafting an important chapter in the history or Kurdistan" with your envisaged contribution towards the development of this important part of Iraq. "We hope the projects that you may support would be an example to follow on a nationwide level", he added.

According to Mr. Fattah, "While Kurdistan suffered the doings of the old regime for a while, now the Kurdish people are suffering the consequences of years of neglect and dilapidated infrastructure covering a wide spectrum of sectors such as water, electricity,

wastewater, solid wastes, health, education and so forth, I request our partners including donor agencies and the UN to expedite their response in order to respond to the current crisis situation in a timely fashion",.

"It is apparent that this year the situation will be far worsened by the encountered drought. This will have major impacts on all aspects of life in the Kurdistan region. In order for the KRG to address these problems, we are calling for the support of our partners; donor organizations; governments; UN with the particular support of UNDP", said Mr. Fattah. Mr. Fattah further stated: "Again we request you, Excellencies, to support the KRG with developing new water treatment and distribution systems, wastewater collection and treatment systems due to the major impact this sector has on the wellbeing of the people of Kurdistan".

Mr. Fattah closed his speech by adding: "We are grateful for your participation and potential support and thank you for your support to Kurdistan and ensure you that the KRG will be a main partner in your envisaged support initiatives".

# 8. The Way Forward

#### RECOMMENDATIONS

Based on the extensive presentations, consultations and situation analysis during the first two days of the conference, the following represents the main recommendations:

◆ For the short, medium and long term action plan, the International Community's support is called upon for

implementing the proposed Phase I interventions together with any additionally defined future activities.

♦ It became apparent that limited progress has been achieved since last year's cholera outbreak in connection with addressing the root causes of the outbreak. Therefore, in the unfortunate

event of reoccurrence of cholera or a similar waterborne disease outbreak this summer, last years approach may be very suited. Although last summer's approach was custom tailored to address the outbreak in Sulaymania, a similar approach can be formulated for other locations. This is as follows;

#### Water and Sanitation Sectors Intervention Action Plan, Emergency / Immediate Term Plan

#### A. Ensure Increased Safe Potable Water Supply

a. In coordination with Ministry of Water Resources and as deemed possible, release of more water, preferably 24/7, from Dokan Dam to ensure uninterrupted operation of Dokan water treatment facility and, as such, decrease dependence on shallow groundwater wells and private vendors.

b. Increase water tankering to piped water un-served dwellings. Inhabitants should be entitled to the Basic Water Requirement Only (i.e. about 15 litres per inhabitant per day) to alleviate demand.

- c. Tankered water should be provided to the population free of charge.
- d. Emergency stand-by power generation sets to be provided to Sanchennare waterworks and Dokan water treatment facility to ensure uninterrupted operation.
- e. Provide extensive chlorine monitoring programme at consumer interfaces in order to adjust chlorine dosing at source

to achieve a chlorine residual around 0.5 ppm.

- f. Increase distribution of chlorine tablets and floaters to private wells' owners.
- g. Launch an extensive community campaign targeting the population delivering several messages including "limit use of private wells", "boil water before use" and the like.

#### **B.Divert Current Wastewater Outfalls Upstream Dokan Water Treatment Facility**

a. Clustering and/or collection of the various outfalls into a single or several sumps.

b. Construct an urgent gravity sewer line

convening the sumps' content to the downstream of Dokan water treatment facility.

OR

c. Provide a submersible pump and force main for each collection pump and discharge to the downstream the Dokan water treatment facility.

#### C.Enhanced Water Quality Monitoring and Surveillance Systems

- a. Establishment of joint Department of Health (DoH) and Department of Water Supply (DoWS).
- b. Increase the number of monitoring teams in order to cover all monitoring and surveillance requirements (i.e. raw water,

source, networks, storage tanks, wells, etc).

- c. Provide all essential water quality laboratory requirements including reagents, laboratory supplies, vehicles, fuel, etc.
- d. Enhancement of logistical support to water quality monitoring teams.
- e. Enhance detailed laboratory data analysis means, recommendations and reporting to ensure availability of the necessary tools to decision makers.

#### **Follow-Up Actions**

The following represent UNDP's proposed set of follow-up actions:

Follow-up with donor organizations for possible funding to Phase I of the KRG's plan.

UNCT will provide technical support to the KRG for further developing Phase I of the KRG's programme.

UNCT will provide technical support to the KRG for further developing Phase I of the KRG's programme interventions.

UNCT will provide technical support to the KRG for custom tailoring an intervention action plan for addressing the unfortunate event of reoccurrence of a similar outbreak.

# Annex I CONFERENCE AGENDA



#### Improving Basic Social Services in KRG 14 16 April 2008 Draft Agenda

| 14 April   | Conference opening & Programmatic Waterborne diseases and relevant se |                                |
|--|---|--------------------------------|
| 9:00 - 9:30  | Registration of participants  |                                |
| Session 1  | Opening   |                                |
| Stage:<br>Government of Ir<br>UNDP Iraq CD             | aq: KRG PM, KRG DPM, KRG MoP, OCUNA,                                  | Central Government             |
| 9:30 - 9:45  | Introduction: Dr. Zebari – KRG Coordina                               | tor to UN                      |
| Speeches:  |   |                                |
| 9:45 - 10:30   | H.E. KRG Prime Minister Delivered by H.                               | E Minister of Health           |
| 10:30 - 10:50  | UNDP Iraq Country Director  |                                |
| 10:50 - 11:20  | Central Government Senior Official                                    |                                |
| 11:20 - 12:30  | Coffee Break & Press Conference (Stage                                | members only)                  |
| Session 2  | Approach and relevant sectors overview                                |                                |
| Stage:<br>KRG: KRG Coordi<br>Dohuk Gov<br>UNDP Iraq CD | inator to UN, MoP, MoH, MoM, MoE, MoWR                                | , Erbil Gov, Sulymania Gov,    |
| Presentations<br>12:30 - 13:15                         | MoH – H.E Minister of Health  | Q&A Session                    |
| 13:15 - 14:30  | Lunch Break   |                                |
| 14:30 - 15:15  | MoWR, H.E Minister of Water Resources                                 | Q&A Session                    |
| 15:15 - 15:30  | Coffee Break  |                                |
| 15:30 - 16:15  | MoE, H.E Minister of Environment                                      |                                |
| 16:15 - 16:30  | Governor, Erbil Governorate   |                                |
| 16:30 - 16:45  | Governor, Sulymania Governorate                                       | Q&A Session                    |
| 16:45 - 17:00  | Governor, Dohuk Governorate   | Q&A Session                    |
| 17:00 - 17:15  | Day one wrap-up (Dr. Zebari – KRG Coo                                 | Q&A Session<br>rdinator to UN) |

| 15 April   | Proposed sectoral interventions within the proposed programme  |
|--|--|
| 9:00 - 9:15  | Opening and Introduction of second day objectives (KRG Coordinator to UN)  |
| 09:15 - 09:30  | Sector Facilitator Introduction (MoP, DG)  |
| Session one  | Health Sector  |
| Stage:<br>Dr. Zebari – KRG<br>Dohuk, MoH<br>UNDP Iraq CD | Coordinator to UN , MoP, Relevant DG's of Erbil, Suleymaniyah and  |
| 09:15 - 10:15  | Presentation by MoH<br>Presentation by Dohuk Governorate   |
| 10:15 - 10:45  | Questions  |
| 10:45 - 11:00  | Coffee Break   |
| Session Two  | Water Resources  |
| Stage:   | Coordinator to UN, MoP, Relevant DG's of Erbil, Suleymaniyah and   |
| 11:00 - 11:45  | Presentation by MoWR Presentation by Sulaymaniyah Governorate Presentation by Dohuk Governorate                                  |
| 11:45 - 12:15  | Questions  |
| Session Three  | Environment  |
| Stage:<br>Dr. Zebari – KRG<br>Dohuk, MoE<br>UNDP Iraq CD | Coordinator to UN, MoP, Relevant DG's of Erbil, Suleymaniyah and   |
| 12:15 - 13:00  | Presentation by MoE  |
| 13:00 - 13:30<br>13:30 - 14:30                           | Questions<br>Lunch   |
| Session Four   | Municipalities   |
| Stage:<br>Dr. Zebari – KRG<br>Dohuk, MoM<br>UNDP Iraq CD | Coordinator to UN, MoP, Relevant DG's of Erbil, Suleymaniyah and   |
| 14:30 - 15:15<br>15:15 - 15:30                           | MoM – H.E Minister of Municipalities<br>Coffee Break   |
| 15:30 - 16:30  | Presentation by MoM Presentation by Erbil Governorate Presentation by Sulaymaniyah Governorate Presentation by Dohuk Governorate |
| 16:30 - 17:00  | Questions  |
| 17:00 - 17:15  | Day two wrap-up (Dr. Zebari – KRG Coordinator to UN)   |

| 16 April      | Donors and UNCT briefing on initiative support                         |
|---------------|--|
| 9:00 - 9:15   | Opening & Introduction (Dr. Zebari – KRG Coordinator to UN)            |
| 9:15 - 9:45   | UNDP Presentation  |
| 09:45- 10:30  | Donors Briefing on initiative support, Donor Presentations & Questions |
| 10:30 - 10:45 | Coffee Break   |
| 10:45 - 11:00 | Donors Briefing on initiative support, Donor Presentations & Questions |
| 11:00 - 13:00 | Closing speeches UNDP Central Government KRG                           |
| 13:00 - 14:00 | Lunch  |

# Annex II Prioritized Phase I Programme Activities/Projects



| No.              | Sector/<br>Sub<br>Sector | Project Area/<br>Location                                    | Project Title   | Project<br>Value<br>(USD<br>Million) | Project<br>Duration<br>(months) | Project<br>Direct<br>Beneficiaries<br>(Inhabita.) | Employment<br>Opportunities<br>Created (work-<br>days) | Resulting<br>Regional<br>Annual<br>Savings<br>(USD<br>million) |
|------------------|--------------------------|--|---|--------------------------------------|---------------------------------|---|--|--|
| 1.1              | HEALI                    | Kurdistan Wide   | Water and Food<br>Inspection  | 0.960                                | 24                              | 5,000,000   | NA   | NA   |
| 1.2              |                          | Dohuk<br>Governorate   | Water - Born<br>Infectious<br>Diseases Control                                    | 1.800                                | 12                              | 828,947   | NA   | 12.43  |
| 2                |                          | IPALITIES  | 1   |                                      |                                 | 1   |  |  |
| <b>2.1</b> 2.1.1 | Water                    | Dohuk<br>Governorate   | School Water and<br>Sanitation<br>Facilities<br>Rehabilitation<br>Programme       | 9.000                                | 24                              | 100,000   | 50,000   | 1.500  |
| 2.1.2            |                          | Kurdistan Wide   | Kurdistan<br>Regional WATSAN<br>Master Plan                                       | 11.500                               | 24                              | 5,000,000   | NA   | NA   |
| 2.2              | Water 9                  |  |   |                                      |                                 |   |  |  |
| 2.2.1            |                          | Amadiya City,<br>Dohuk<br>Governorate                        | Amadiya Central<br>Water Treatment<br>Facility                                    | 65.000                               | 24                              | 170,000   | 200,000  | 2.550  |
| 2.2.2            |                          | Aqra City,<br>Dohuk<br>Governorate                           | Aqra Central Water Treatment Facility   | 75.000                               | 24                              | 220,000   | 225,000  | 3.300  |
| 2.2.3            |                          | Ba adra City,<br>Dohuk<br>Governorate                        | Ba adra City<br>Water Supply  | 1.550                                | 6                               | 5,000   | 5,000  | 0.075  |
| 2.2.4            |                          | Bardarash City,<br>Dohuk<br>Governorate                      | Bardarash City<br>Water Supply  | 3.500                                | 12                              | 10,000  | 11,000   | 0.150  |
| 2.2.5            |                          | Dohuk City,<br>Dohuk<br>Governorate                          | Central Dohuk<br>Water Treatment<br>Facility                                      | 140.00<br>0                          | 24                              | 662,000   | 420,000  | 9.930  |
| 2.2.6            |                          | Dohuk City,<br>Dohuk<br>Governorate                          | Dohuk City Water<br>Distribution<br>Network<br>Replacement                        | 7.000                                | 12                              | 62,000  | 21,000   | 0.930  |
| 2.2.7            |                          | Kalakji City,<br>Dohuk<br>Governorate                        | Kalakji City Water<br>Supply  | 2.200                                | 6                               | 5,000   | 7,000  | 0.075  |
| 2.2.8            |                          | Sheladizy City,<br>Amadiya<br>District, Dohuk<br>Governorate | Sheladizy City<br>Water Supply  | 2.100                                | 12                              | 15,000  | 6,000  | 0.225  |
| 2.2.9            |                          | Sumail City,<br>Dohuk<br>Governorate                         | Sumail City Water<br>Distribution<br>Network                                      |                                      |                                 |   |  |  |
| 2.2.10           |                          | Zakho City,<br>Dohuk<br>Governorate                          | Replacement  Zakho City Water Distribution Network Replacement                    | 3.000                                | 10                              | 20,000  | 9,000  | 0.300  |
| 2.2.11           |                          | Diyana Sub-<br>District, Erbil<br>Governorate                | Replacement Badlyan Rural Water Supply Project                                    | 0.315                                | 6                               | 2,000   | 900  | 0.030  |
| 2.2.12           |                          | Khalifan Sub-<br>District, Erbil<br>Governorate              | Banoka, Jonara,<br>Senawa and Kany<br>Golk Multy Rural<br>Water Supply<br>Project | 0.775                                | 6                               | 2,000   | 2,500  | 0.030  |

| No.    | Sector/<br>Sub<br>Sector | Project Area/<br>Location                             | Project Title   | Project<br>Value<br>(USD<br>Million) | Project<br>Duration<br>(months) | Project<br>Direct<br>Beneficiaries<br>(Inhabita.) | Employment<br>Opportunities<br>Created (work-<br>days) | Resulting<br>Regional<br>Annual<br>Savings<br>(USD<br>million) |
|--------|--------------------------|---|---|--------------------------------------|---------------------------------|---|--|--|
| 2.2    |                          | IPALITIES (conti<br>Supply (continue                  |   |                                      |                                 |   |  |  |
| 2.2.13 | waters                   | Salahaddin  | Darabizmara   |                                      |                                 |   |  |  |
|        |                          | Sub-District,<br>Erbil<br>Governorate                 | Water Supply<br>Project   | 0.315                                | 6                               | 800   | 900  | 0.012  |
| 2.2.14 |                          | Erbil City, Erbil<br>Governorate                      | Erbil City Water Distribution Network Replacement   | 4.150                                | 12                              | 30,000  | 13,000   | 0.450  |
| 2.2.15 |                          | Erbil City, Erbil<br>Governorate                      | Eskan Quarter<br>Water Distribution<br>Network<br>Replacement                             | 0.500                                | 12                              | 7,000   | 1,500  | 0.105  |
| 2.2.16 |                          | Hareer Sub-<br>District, Erbil<br>Governorate         | Graw Khailany<br>Rural Water<br>Supply Project  | 0.500                                | 6                               | 3,000   | 1,500  | 0.045  |
| 2.2.17 |                          | Erbil<br>Governorate                                  | Khabat,<br>Kawrgosikl,<br>Shakholan,<br>Sofaya, Chama<br>Dubz Water<br>Supply Project     | 8.400                                | 12                              | 60,000  | 25,000   | 0.900  |
| 2.2.18 |                          | Erbil City, Erbil<br>Governorate                      | Rapareen Quarter<br>Water Distribution<br>Network<br>Replacement                          | 0.750                                | 12                              | 35,000  | 2,000  | 0.525  |
| 2.2.19 |                          | Erbil City, Erbil<br>Governorate                      | Ronake and<br>Mantekawa Water<br>Distribution<br>Network<br>Replacement                   | 0.250                                | 6                               | 25,000  | 750  | 0.375  |
| 2.2.20 |                          | Erbil City, Erbil<br>Governorate                      | Salahadeen<br>Quarter Water<br>Distribution<br>Network<br>Replacement                     | 0.500                                | 8                               | 8,000   | 1,500  | 0.120  |
| 2.2.21 |                          | Erbil City, Erbil<br>Governorate                      | Setaqan Quarter<br>Water Distribution<br>Network<br>Replacement                           | 1.000                                | 12                              | 8,000   | 3,000  | 0.120  |
| 2.2.22 |                          | Shorish Sub-<br>District, Erbil<br>Governorate        | Smaq Shirny<br>Bichuk, Hajy<br>Wsuy Gichake and<br>Gawra Rural<br>Water Supply<br>Project | 0.500                                | 6                               | 800   | 1,500  | 0.012  |
| 2.2.23 |                          | Sulymania City,<br>Sulymania<br>Governorate           | Central Water<br>Supply Workshop  | 5.135                                | 12                              | 1,200,000   | 15,000   | NA   |
| 2.2.24 |                          | Darbandikhan<br>District,<br>Sulymania<br>Governorate | Darbandikhan<br>Water Treatment<br>Facility   | 3.825                                | 12                              | 33,000  | 12,500   | 0.495  |

|        |                          | r   |   |                                      |                                 |   |  |  |
|--------|--------------------------|---|---|--------------------------------------|---------------------------------|---|--|--|
| No.    | Sector/<br>Sub<br>Sector | Project Area/<br>Location<br>IPALITIES (conti       | Project Title   | Project<br>Value<br>(USD<br>Million) | Project<br>Duration<br>(months) | Project<br>Direct<br>Beneficiaries<br>(Inhabita.) | Employment<br>Opportunities<br>Created (work-<br>days) | Resulting<br>Regional<br>Annual<br>Savings<br>(USD<br>million) |
| 2.2    |                          | Supply (continue                                    |   |                                      |                                 |   |  |  |
| 2.2.25 | water                    | Dokan District,<br>Sulymania<br>Governorate         | Dokan Water<br>Treatment Facility   | 2.615                                | 12                              | 8,000   | 8,000  | 0.12   |
| 2.2.26 |                          | Pebaz Sub-<br>District,<br>Sulymania<br>Governorate | Pebaz Water<br>Treatment Facility   | 1.660                                | 12                              | 5,000   | 5,000  | 0.075  |
| 2.2.27 |                          | Sulymania<br>Governorate                            | Reabilitation and<br>Extension of<br>Sulymania<br>Governorate<br>Water Supply<br>System | 9.625                                | 24                              | 400,000   | 29,000   | 6  |
| 2.2.28 |                          | Sulymania City,<br>Sulymania<br>Governorate         | Rehabilitation of<br>Exsisting Dokan-<br>Sul Water Supply<br>Project                    | 25.500                               | 12                              | 400,000   | 77,000   | 6  |
| 2.2.29 |                          | Solymania City,<br>Solymania<br>Governorate         | Extension of Dokan Water Treatment Facility   | 18.200                               | 12                              | 400,000   | 55,000   | 6  |
| 2.2.30 |                          | Sulymania City,<br>Sulymania<br>Governorate         | Sarchennare<br>Waterworks<br>Feasibility Study  | 1.500                                | 6                               | 320,000   | NA   | NA   |
| 2.2.31 |                          | Sulymania City,<br>Sulymania<br>Governorate         | Rehabilitation of<br>Sarchennare<br>Waterworks  | 12.000                               | 8                               | 320,000   | 36,000   | 4.8  |
| 2.2.32 |                          | Sulymania City,<br>Sulymania<br>Governorate         | Sulymania City Asbestos Water Distribution Network Replacement                          | 4.750                                | 12                              | 100,000   | 14,000   | 1.5  |
| 2.2.33 |                          | Sulymania City,<br>Sulymania<br>Governorate         | Sulymania City<br>Water Distribution<br>Network<br>Replacement                          | 50.500                               | 24                              | 320,000   | 152,000  | 4.872  |
| 2.3    | Wastev                   |   |   |                                      |                                 |   |  |  |
| 2.3.1  |                          | Zakho City,<br>Dohuk<br>Governorate                 | Zakho City Main<br>Sewerage System  | 6.000                                | 24                              | 72,000  | 18,000   | 1.080  |
| 2.3.2  |                          | Zakho City,<br>Dohuk<br>Governorate                 | Zakho General<br>Hospital<br>Wastewater<br>Treatment Facility                           | 1.400                                | 6                               | 300,000   | 4,000  | NA   |
| 2.3.3  |                          | Erbil City, Erbil<br>Governorate                    | Erbil<br>Slaughterhouse<br>Wastewater   | 3,000                                | 24                              | 35.000  | 0.000  | 0.275  |
| 2.3.4  |                          | Erbil City, Erbil<br>Governorate                    | Treatment Facility Erbil City Integrated Wastewater Project                             | 3.000<br>223.50<br>0                 | 24<br>48                        | 25,000  | 9,000  | 0.375<br>15  |
| 2.3.5  |                          | Halabja District,<br>Sulymania<br>Governorate       | Halabja<br>Wastewater<br>Treatment Facility   | 9.000                                | 12                              | 20,000  | 27,000   | 0.300  |
| 2.3.6  |                          | Khurmal Town,<br>Sulymania<br>Governorate           | Khurmal<br>Wastewater<br>Treatment Facility   | 7.000                                | 12                              | 16,000  | 21,000   | 0.240  |

| No.    |       | Sector/ Project Area,<br>Sub Sector Location |              | Project Title                                   | Project<br>Value<br>(USD<br>Million) | Project<br>Duration<br>(months) | Project<br>Direct<br>Beneficiaries<br>(Inhabita.) | Employment<br>Opportunities<br>Created (work-<br>days) | Resulting<br>Regional<br>Annual<br>Savings<br>(USD<br>million) |
|--------|-------|--|--------------|---|--------------------------------------|---------------------------------|---|--|--|
| 2      |       | ICIPALITI                                    |              |   |                                      |                                 |   |  |  |
| 2.3    | Wast  | ewater (c                                    |              |   |                                      |                                 |   |  |  |
| 2.3.7  |       | Koya Disti                                   | , I          | Koya Wastewater                                 |                                      |                                 |   |  |  |
|        |       | Erbil Gove                                   |              | Treatment Facility                              | 10.000                               | 12                              | 25,000  | 30,000   | 0.375  |
| 2.3.8  |       | Qaladza T<br>Sulymania<br>Governora          | a            | Qaladza Wastewater<br>Treatment Facility        | 8.000                                | 12                              | 18,000  | 24,000   | 0.27   |
| 2.3.9  |       | Rania Dist                                   | rict,        | Rania Wastewater                                |                                      |                                 | , , , , , ,                                       | ,  |  |
|        |       | Sulymania<br>Governora                       |              | Treatment Facility                              | 10.000                               | 12                              | 180,000   | 20,000   | 2.7  |
| 2.3.10 |       | Said Sadio                                   |              | Said Sadiq                                      |                                      |                                 |   |  |  |
| 2.2.44 |       | Sulymania                                    | ate          | Wastewater<br>Treatment Facility                | 8.000                                | 12                              | 20,000  | 24,000   | 0.3  |
| 2.3.11 |       | Sirwan To<br>Sulymania                       | ,            | Sirwan Wastewater                               |                                      |                                 |   |  |  |
|        |       | Governora                                    |              | Treatment Facility                              | 8.000                                | 12                              | 20,000  | 24,000   | 0.3  |
| 2.3.12 |       | Soran Dis                                    |              | Soran Wastewater                                | 0.000                                | 12                              | 20,000  | 24,000   | 0.5  |
|        |       | Erbil Gove                                   | , I          | Treatment Facility                              | 15.000                               | 12                              | 40,000  | 45,000   | 0.6  |
| 2.3.13 |       | Sulymania                                    |              | Sulymania City Main                             |                                      |                                 | ,   | ,  |  |
|        |       | Sulymania                                    |              | Sewage Culvert                                  |                                      |                                 |   |  |  |
|        |       | Governora                                    |              |   | 6.000                                | 24                              | 100,000   | 18,000   | 1.5  |
| 2.3.14 |       | Sulymania<br>Sulymania                       | a ''         | Sulymania City<br>Wastewater                    |                                      |                                 |   |  |  |
| 2.4    | 0.114 | Governora                                    |              | Treatment Facility Feasibility Study            | 2.000                                | 8                               | 320,000   | NA   | NA   |
| 2.4    | Solid | Waste  |              | B 1 1 6" 6 1" 1                                 |                                      |                                 |   |  |  |
| 2.4.1  |       | Dohuk Cit<br>Dohuk<br>Governora              |              | Dohuk City Solid<br>Waste Management<br>Project | 9.000                                | 24                              | 110,000   | 27,000   | NA   |
| 2.4.2  |       | Erbil City,                                  | Erbil        | Erbil Solid Waste                               |                                      |                                 | ,   | ,  |  |
|        |       | Governora                                    | ate          | Management Project                              | 9.000                                | 24                              | 1,250,000   | 27,000   | NA   |
| 2.4.3  |       | Rwandooz<br>District, E<br>Governora         | Erbil        | Rwandooz Solid<br>Wastes Management<br>Project  | 3.200                                | 12                              | 20,000  | 5,000  | 0.272  |
| 2.4.4  |       | Daratoo S                                    |              | Daratoo Solid Waste                             | 3.200                                |                                 | 20,000  | 3,300  | 0.272  |
|        |       | District, E<br>Governora                     | Ērbil        | Management Project                              | 5.000                                | 12                              | 50,000  | 15,000   | NA   |
| 2.4.5  |       | Kasnazan<br>District, E<br>Governora         | Ērbil        | Kasnazan Solid Waste<br>Management Project      | 2.100                                | 12                              | 24,000  | 7,000  | NA   |
| 2.4.6  |       | Khabat Di<br>Erbil Gove                      | strict,      | Khabat Solid Waste<br>Management Project        | 11.350                               | 12                              | 100,000   | 34,000   | NA<br>NA   |
| 2.4.7  |       | Qushtappa<br>District, E                     | a Sub-       | Qushtappa Solid Waste Management                | 11.550                               | 12                              | 100,000   | 34,000   | IVA  |
|        |       | Governora                                    | ate          | Project   | 1.850                                | 12                              | 16,000  | 6,000  | NA   |
| 2.4.8  |       | Shaqlawa<br>Erbil Gove                       | District,    | Shaqlawa Solid Waste<br>Management Project      | 3.000                                | 12                              | 23,000  | 9,000  | NA   |
| 2.4.9  |       | Shawes S<br>District, E<br>Governora         | ub-<br>Erbil | Shawes Solid Waste<br>Management Project        | 2.100                                | 12                              | 23,000  | 6,000  | NA   |

| No.   | Sector/<br>Sub<br>Sector | Project Area/<br>Location                         | Project Title  | Project<br>Value<br>(USD<br>Million) | Project<br>Duration<br>(months) | Project<br>Direct<br>Beneficiaries<br>(Inhabita.) | Employment<br>Opportunities<br>Created (work-<br>days) | Resulting<br>Regional<br>Annual<br>Savings<br>(USD<br>million) |
|-------|--------------------------|---|--|--------------------------------------|---------------------------------|---|--|--|
| 3     |                          | RESOURCES   |  |                                      |                                 |   |  |  |
| 3.1   | Policy                   |   | 1  |                                      |                                 |   |  |  |
| 3.1.1 |                          | Kurdistan Wide                                    | Development of<br>Integrated Water<br>Resources<br>Framework       | 6.000                                | 36                              | 5,000,000   | NA   | NA   |
| 3.2   | Dams                     |   |  |                                      |                                 |   |  |  |
| 3.2.1 |                          | Koya/TaqTaq,<br>Erbil<br>Governorate              | Elingakh Dam<br>Project  | 6.000                                | 24                              | 50,000  | 22,000   | NA   |
| 3.2.2 |                          | Zaweta, Dohuk<br>Governorate                      | Gali Bradol Dam<br>Project   | 6.000                                | 24                              | 60,000  | 22,000   | NA   |
| 3.2.3 |                          | Sharbazher,<br>Sulymainia<br>Governorate          | Khewata Dam<br>Project   | 96.250                               | 24                              | 100,000   | 360,000  | NA   |
| 3.2.4 |                          | Sharbazher,<br>Sulymainia<br>Governorate          | Khewata Dam<br>Design  | 5.500                                | 6                               | 100,000   | 20,000   | NA   |
| 3.2.5 |                          | Shaqlawa, Erbil<br>Governorate                    | Qapakiyan Dam<br>Project   | 7.250                                | 24                              | 20,000  | 22,000   | NA   |
| 3.2.6 |                          | Amedi/Sarsank,<br>Dohuk<br>Governorate            | Sibna Dam No. 1<br>Project   | 6.000                                | 24                              | 65,000  | 18,000   | NA   |
| 3.2.7 |                          | Amedi/Sarsank,<br>Dohuk<br>Governorate            | Sibna Dam No. 2<br>Project   | 6.000                                | 24                              | 65,000  | 18,000   | NA   |
| 3.3   | Ground                   |   | 1  |                                      |                                 |   |  |  |
| 3.3.1 |                          | Dohuk<br>Governorate                              | Groundwater<br>Quality Maping                                      | 2.250                                | 12                              | 500,000   | NA   | NA   |
| 3.3.2 |                          | Dohuk<br>Governorate                              | Erbil Intergranular<br>Aquifer Study                               | 1.000                                | 8                               | 500,000   | NA   | NA   |
| 3.3.3 |                          | Erbil,<br>Sulymainia and<br>Dohuk<br>Governorates | Rehabilitation of<br>Springs and<br>Shallow Wells<br>Programme     | 5.500                                | 12                              | 200,000   | 16,000   | 3  |
| 3.3.4 |                          | Sulymania<br>Governorate                          | Chamabsmila Subsurface Dam Pre-Feasibility Study                   | 1.000                                | 8                               | 100,000   | NA   | NA   |
| 3.3.5 |                          | Sulymania<br>Governorate                          | Groundwater<br>Quality Mapping                                     | 2.250                                | 12                              | 600,000   | NA   | NA   |
| 3.3.6 |                          | Sulymania<br>Governorate                          | Groundwater<br>Artificial Recharge<br>in Peramagroon<br>Area Study | 1.000                                | 8                               | 320,000   | NA   | NA   |
| 3.3.7 |                          | Sulymania<br>Governorate                          | Rania<br>Intergranular<br>Aquifer Study                            | 1.000                                | 8                               | 100,000   | NA   | NA   |
| 3.3.8 |                          | Sulymania<br>Governorate                          | Sharazoo-Halabja<br>Intergranular<br>Aquifer Study                 | 1.000                                | 8                               | 75,000  | NA   | NA   |

| No.   | Sector/<br>Sub<br>Sector | Project Area/<br>Location               | Project Title  | Project<br>Value<br>(USD<br>Million) | Project<br>Duration<br>(months) | Project<br>Direct<br>Beneficiaries<br>(Inhabita.) | Employment<br>Opportunities<br>Created (work-<br>days) | Resulting<br>Regional<br>Annual<br>Savings<br>(USD<br>million) |
|-------|--------------------------|---|--|--------------------------------------|---------------------------------|---|--|--|
| 3     | WATER                    | <b>RESOURCES</b> (cor                   | ntinued)   |                                      |                                 |   |  |  |
| 3.4   | Water (                  | Quality                                 |  |                                      |                                 |   |  |  |
| 3.4.1 |                          | Dohuk and<br>Sulymania<br>Governorate   | Griminess<br>Sweeper<br>Equipment  | 4.400                                | 10                              | 1,500,000   | 10,000   | NA   |
| 3.4.2 |                          | Sulymainia and<br>Dohuk<br>Governorates | Water Quality Monitoring Programme for Dokan, Darbandikhan and Dohuk Lakes     | 3.300                                | 10                              | 1,500,000   | NA   | NA   |
| 4     | ENVIRO                   | ONMENT                                  |  |                                      |                                 |   |  |  |
| 4.1   |                          | Dokan and<br>Darbandikhan<br>Lakes Area | Environmental<br>Survey<br>Programme for<br>Dokan and<br>Darbandikhan<br>Lakes | 0.260                                | 12                              | 1,500,000   | NA   | NA   |
| 4.2   |                          | Erbil City,<br>Kurdistan Wide           | Environmental<br>Training Centre   | 13.600                               | 48                              | 5,000,000   | NA   | NA   |
| 4.3   |                          | Erbil City,<br>Sulaymaniyah,<br>Dohuk   | Kurdistan Central<br>Environmental<br>Laboratories                             | 7.000                                | 9                               | 5,000,000   | NA   | NA   |
| 4.4   |                          | Kurdistan Wide                          | Radiation<br>Assessment in<br>Kurdistan Region                                 | 9.350                                | 24                              | 5,000,000   | NA   | NA   |

# Annex III CONFERENCE PARTICIPANTS



# **Conference Participants**

|   | Prime Minister's Office |                                       |  |  |
|---|-------------------------|---------------------------------------|--|--|
|   | Name Title              |                                       |  |  |
| 1 | Mr. Adnan M. Qadir      | Minister of Labour and Social affairs |  |  |
| 2 | Dr. Anwar Abdellah      | DG of Health Affairs                  |  |  |
| 3 | Mr. Mariwan Badrkhan    | Advisor to the PM                     |  |  |
| 4 | Mr. Bahnam K.           | Professor                             |  |  |
| 5 | Mr. Staffor Clarry      | Humanitarian Affairs Advisor          |  |  |
| 6 | Mr. Arjun Clarry        | Humanitarian Affairs Advisor          |  |  |

|    | Ministry of Environment      |                                |  |  |
|----|------------------------------|--------------------------------|--|--|
|    | Name Title                   |                                |  |  |
| 7  | Mr. Dara Mohammed Saeed      | The Minister                   |  |  |
| 8  | Mr. Buland Ibrahim Dizay     | Ministry's Advisor             |  |  |
| 9  | Mr. Shamal Abdulrahman Mufty | Consultant, Minister's Advisor |  |  |
| 10 | Mr. Anees Abdulahad Nabaty   | DG Technical Department        |  |  |
| 11 | Mr. Sharmeen Hamad Khorshaw  | DG Awareness                   |  |  |
| 12 | Dr. Azad Mustafa Khidir      | DG Relations                   |  |  |
| 13 | Mr. Ali Hassan Ahmad         | Advisor                        |  |  |

|    | Ministry of Health         |  |  |  |
|----|----------------------------|--|--|--|
|    | Name Title                 |  |  |  |
| 14 | Dr. Zrian Othman           | Minister                                 |  |  |
| 15 | Dr. Jameel Ali Rasheed     | DG Health Affairs                        |  |  |
| 16 | Dr. Abdulla Mustafa Jalaby | Director of Preventive Health Department |  |  |
| 17 | Dr. Khais Qadir Ahmad      | Director of CDC                          |  |  |

|    | Ministry of Municipalities |                                 |  |
|----|----------------------------|---------------------------------|--|
|    | Name                       | Title                           |  |
| 18 | Mrs. Nazareen M. Wosu      | Minister                        |  |
| 19 | Mr. Nihad I. Al-Alim       | DG of Water and Sewerage        |  |
| 20 | Mr. Mohammed A. Mahmood    | Deputy DG of Water and Sewerage |  |
| 21 | Mr. Mariwan Faizy          | Deputy DG of Water and Sewerage |  |
| 22 | Mr. Ninos H. Braymok       | Expert                          |  |
| 23 | Mrs. Noor N. Mohsin        | Engineer                        |  |
| 24 | Mrs. Ann Mirani            | Advisor                         |  |
| 25 | Dr. Thomas Renhan          | Municipality Expert             |  |
| 26 | Mr. Robert Katzensen       | Urban Planning Expert           |  |
| 27 | Mr. Loay Fraukh            | Water and Sewage Expert         |  |
| 28 | Mr. Barham Ismail          | Consultant                      |  |

|    | Ministry of Water Resources |  |  |
|----|-----------------------------|--|--|
|    | Name                        | Title  |  |
| 29 | Mr. Tahseen Qader           | Minister   |  |
| 30 | Mr. Mohammed Amin Faris     | General Director of Irrigation and Surface water |  |
| 31 | Mr. Akram Ahmad Rasool      | General Director of Dams                         |  |
| 32 | Mr. Dlear Umer Abdulla      | General Dirctor of Study & Design                |  |
| 33 | Mr. Mahmood Aziz Ahmad      | General Director of Ground Water                 |  |
| 34 | Mr. Sardar Ibrahim Qanbar   | Expert Engineer                                  |  |
| 35 | Mrs. Aram Ibrahim Qanbar    | Relationship Manager MoWR                        |  |
| 36 | Mr. Joseph Donahue          | Chief Executive Officer                          |  |
| 37 | Mr. Richard Shadeed         | Technical Advisor                                |  |
| 38 | Mr. Nabaz T. Abdullah       | Consultant                                       |  |

|    | Ministry of Planning     |   |  |  |
|----|--------------------------|---|--|--|
|    | Name Title               |   |  |  |
| 39 | Mr. Othman Shwani        | Minister                                    |  |  |
| 40 | Mr. Zagros Fatah Siwaily | DG Department of Coordination & Cooperation |  |  |
| 41 | Mr. Jamal Ameen          | Head of Statistic Office                    |  |  |
| 42 | Mr. Saleh Toma           | Advisor to MOP                              |  |  |
| 43 | Mr. Sherwan Asad Qader   | DG Public Investment Projects               |  |  |
| 44 | Mr. Moaed Qoja           | Head of Quality Control Department          |  |  |
| 45 | Dr. Fuad Hussein         | President Office Manager                    |  |  |

|    | Suleimanieh Governorate   |  |  |  |
|----|---------------------------|--|--|--|
|    | Name Title                |  |  |  |
| 46 | Jootyar Noori Abdula      | DG   |  |  |
| 47 | Mrs. Nawroz Mustafa Amin  | Manager of Planning Dept. of Sulaymanya City |  |  |
| 48 | Mr. Khasro Kamal          | DG Municipality                              |  |  |
| 49 | Dr. Sherko Abdulah        | DG Health                                    |  |  |
| 50 | Mr. Bahaadin Ibrahim      | DG Rural Water                               |  |  |
| 51 | Mr. Dyar Mohammed Ali     | DG Rural Water                               |  |  |
| 52 | Mr. Omid Mohammed Mustafa | Director of Ground Water Consultant          |  |  |

|    | Dohuk Governorate          |  |  |  |
|----|----------------------------|--|--|--|
|    | Name Title                 |  |  |  |
| 53 | Mr. Gorgees Shlemoon Khaey | Governor of Dohuk                        |  |  |
| 54 | Mr. Mostafa El-Emam        | Advisor to the Governor                  |  |  |
| 55 | Dr. Abdalla Saad           | Director General of Health               |  |  |
| 56 | Dr. Nazar M. Salim Numan   | Professor of Geology/University of Dohuk |  |  |
| 57 | Mr. Faris Haji Salim       | Head of Planning Department              |  |  |
| 58 | Mr. Delshad Abdulrahman    | Director of Environment Office           |  |  |

|    | Erbil Governorate         |                     |  |
|----|---------------------------|---------------------|--|
|    | Name                      | Title               |  |
| 59 | Mr. Nawzad Hadi Mawlod    | Governor of Erbil   |  |
| 60 | Mr. Tahir Abdullah Othman | Deputy Governor     |  |
| 61 | Mr. Sarhang Jalal Saeed   | Protection Director |  |

|    | Central Government                      |  |  |
|----|---|--|--|
|    | Name                                    | Title  |  |
| 62 | Mr. Mamand Rasul                        | DG Administrative Affairs-Office of Iraq<br>President  |  |
| 63 | Mr. Sagvan Murad Jundi                  | DG Protocol- Office of Iraq President  |  |
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| 156 | Rafiq                 | Kurdistan Report      |  |  |  |  |
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| 158 | Hama Mamand           | Radio new             |  |  |  |  |
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