

Environmental Management of the Iraqi Marshlands

ESTs FOR DRINKING WATER PROVISION

TRAINER'S HANDBOOK



**UNITED NATIONS ENVIRONMENT PROGRAMME
DIVISION OF TECHNOLOGY, INDUSTRY AND ECONOMICS
INTERNATIONAL ENVIRONMENTAL TECHNOLOGY CENTRE
UNEP-DTIE-IETC**

With the cooperation of

Global Environment Centre Foundation

**Training Kit
ESTs FOR DRINKING WATER PROVISION**

This training kit responds to the following need:

The improvement and protection of public health in the Iraqi Marshlands through the application of Environmentally Sound Technologies (ESTs) particularly for Drinking Water Provision

It is financed by:

**UNEP –DTIE-IETC
The United Nations Environment Programme,
Division of Technology, Industry and Economics,
International Environmental Technology Centre**

Acknowledgements

Acknowledgements and appreciation are due to the following persons who have contributed to the production of this Training Kit:

Mr. Hirofumi Hashiyama, Osaka Municipal Government, Chapter 3

Mr. Sadamitsu Shiode, Osaka Municipal Government, Chapter 2

Ms. Keiko Wada, Lake Biwa - Yodo River Water Quality Preservation Organization, Chapter 5

Mr. Kimihiko Murakami, The Japan Asian Association and Asian Friendship Society (JAFS), Chapter 8

Mr. Hiroyuki Yamamura, TORAY Industries Inc., Chapter 4

Mr. Yutaka Marumoto, Maibara Municipal Government, Chapter 4

Dr. Shoichi Kunikane, National Institute of Public Health, Chapter 1

Prof. Kiyoshi Yamada, Ritsumeikan University, Chapter 8

Mr. Naonobu Minato, Foundation for Advanced Studies on International Development (FASID), Chapter 6

Mr. Masanori Yagi, FASID, Chapter 6

Mr. Yasushi Hayashi, FASID, Chapter 6

Mr. Shuichi Suzuki, FASID, Chapter 6

Mr. Mahmoud A. Ahmad, Ministry of Municipalities and Public Works (MOMPW), Iraq, Chapter 1

Mr. Jabbar H. Abdulla, MOMMPW, Iraq, Chapter 1

Mr. Kannan Nadar, UNICEF, Chapter 1

Mr. Toshiaki Tanaka, Water Museum, Osaka Municipal Government, Appendix

Mr. Yoshifumi Otani, Global Environment Centre Foundation, Chapters 1 and 4

Dr. Sivapragasam Kugaprasatham, UNEP DTIE IETC, Chapters 1 and 5

SUPPORT FOR ENVIRONMENTAL MANAGEMENT OF THE IRAQI MARSHLANDS

A. Overview of the Iraqi Marshlands and their environmental priorities

The Iraqi Marshlands constitute the largest wetland ecosystem in the Middle East, with considerable environmental and socio-cultural significance. Recent assessments of environmental conditions in Iraq, as reported by UNEP and the UN/World Bank Needs Assessment Initiative for the Reconstruction of Iraq, have identified the destruction of the Iraqi Marshlands as one of the major environmental and humanitarian disasters facing Iraq (United Nations and World Bank, 2003). Critical problems and associated priority needs for the Iraqi Marshlands identified by the Iraqi authorities and the UN assessments include, among others, the following:

Marshland degradation: While the re-flooding of dried areas started in 2003, only 20 to 30 per cent of the original area has been re-inundated to date, with varying degrees of ecosystem recovery. Marsh water is contaminated with pesticides, salts, and untreated industrial discharges and sewage from upstream. Haphazard breaching of embankments has also resulted in contaminated water stagnating in some areas, impacting the recovery of both vegetation and fish. Water quality and marshland management is an urgent priority to protect human health and livelihoods, and to preserve biodiversity and the ecosystems.

Lack of drinking water: The 2003 UN/World Bank Needs Assessment and a public health survey by the US Agency for International Development (US AID) found that the provision of safe drinking water is the critical priority for the residents of the Iraqi Marshlands (United Nations, 2003). While some residents are able to purchase tanker water, many, particularly those living within the marshes, currently obtain drinking water directly from the marshes without treatment (US AID, 2004).

Lack of sanitation: Assessments found that most settlements lack basic sanitation systems, and wastewater is often drained through open channels to the nearest stream or to the street. The presence of human waste in the streets was noted in 50 per cent of villages in the region. Outbreaks of water-borne diseases are prevalent. The provision of wastewater treatment services is therefore a critical necessity for protecting the public health. In addition, the return of displaced persons to the marshland area continues to place an increasing burden on the provision of drinking water and sanitation.

The Iraqi authorities have recognized the above issues as priorities, and have submitted the following as project priorities, among others, to the Donor Conference: Management of Biodiversity in the al Hwaize Marshland (Project number 706), Provision of Treatment Units for Water and Sanitation (Project numbers 592 and 594), and Training Programme Development (Project number 704).

The need for immediate environmental relief in the Iraqi Marshlands was also raised as a priority by the high-level Iraqi delegation to Japan. In December 2003, Prime Minister Koizumi was requested in person to prioritize marshland management and restoration by a visiting Iraqi dignitary. In March 2004, the Iraqi Minister of Environment met with the Japanese Foreign Minister and Environment Minister and, again, requested that Japan prioritize support for marshland management and restoration. **Specifically, the Iraqi Minister of Environment requested assistance in the improvement of water quality, as well as in the provision of technologies, equipment, and training.** To respond to such requests, the Government of Japan

made contributions to the UN Iraq Trust Fund, and earmarked funds for this project. In addition, within the UN Iraq Trust Fund framework, the need for coordination of activities and strategy formulation for longer-term marshland management has been identified.

B. Project goal and components

Owing to the uniqueness of the Iraqi Marshlands ecosystem and its socio-cultural heritage, the technical and programmatic responses needed to address the above priorities may be quite different from those most appropriate for other settings. Also, an underlying factor that hinders the response is the limited capacities of, and availability of credible information for, policy makers, experts, and communities to assess and implement solutions. Given these observations, the goal of this project is to support the sustainable management and restoration of the Iraqi Marshlands by facilitating strategy formulation, monitoring and analysing current conditions, raising capacities for policy and technical management, and implementing environmentally sound technology (EST) options on a pilot basis. This project is an integrated package of five component activities, as follows:

- **Component 1: Support for strategy development and coordination**
This component facilitates strategy development for marshland management by analysing the current policy and institutional frameworks, and by providing initial support to assess the integration of environmental dimensions into the national marshland management coordination mechanism. Stakeholder and donor coordination activities also are supported.
- **Component 2: Data collection and baseline analysis**
This component addresses the need to establish a baseline for the marshland environment, and to collect and analyse the data needed to determine the potential intervention options required to meet the immediate needs for water, sanitation, and marshland management.
- **Component 3: Capacity building**
This component addresses the need to raise the capacity of Iraqi decision-makers in government and communities to develop and implement a policy and strategy framework for marshland management, as well as technical options for immediate mitigation of critical concerns.
- **Component 4: Pilot implementation**
This component addresses the need to identify suitable options, and provides support for the pilot implementation of such options in drinking water, sanitation, and marshland management.
- **Component 5: Awareness raising and follow-up**
This component addresses the need to raise awareness of marshland conditions, and the efforts to manage and restore this critical ecosystem. These issues are described in more detail in the project approach section below.

UNEP experiences relevant to the project, as well as indications of UNEP's implementation capacity, are summarized below:

- **Promotion of environmentally sound technologies (ESTs):** UNEP, through the International Environmental Technology Centre (IETC) of the Division of Technology, Industry, and Economics (DTIE), has provided technical and policy expertise for applications of ESTs in water and wastewater management and wetland management in developing countries. IETC has also supported related capacity-building activities, and provides guidance for decision-makers on appropriate policies and strategies (UNEP IETC, 2004). The Division has directly implemented over 1,000 cleaner technology assessments and demonstrations in 24 developing countries (UNEP DTIE, 2004).

- **Assessments of the Iraqi Marshlands:** Assessments carried out by UNEP have catalogued the degradation of the Iraqi Marshlands for several years, and alerted the international community to its potential destruction. UNEP has been the lead agency in monitoring and reporting on the recovery of the Marshlands (UNEP, 2001 and 2003).
- **Post-conflict assessments:** UNEP has provided environmental assistance to post-conflict countries since the late 1990s by investigating the environmental impacts of conflicts and pre-existing conditions, supporting decision-making, and initiating follow-up action. Locations of post-conflict operations include Afghanistan, Albania, Bosnia and Herzegovina, Kosovo, Liberia, and the Occupied Palestinian Territories (UNEP PCAU, 2004).

UNEP also has the experience and mandate to coordinate policy dialogue so as to ensure that environmental issues are adequately addressed within the scope of problems that encompass both environmental and non-environmental dimensions. Further, given the special constraints on local implementation in Iraq, additional measures taken to ensure the implementation of the Iraqi Marshlands project include the following:

- Establishment of a Project Implementation Unit (PIU) to be anchored within the Ministry of Environment, to provide technical support, to liaise with national and governorate institutions, and to oversee the project at the local level
- Employment of a national project coordinator, to operate out of the PIU
- Building the capacity of Iraqi experts and decision-makers first, and utilizing that capacity for implementation during the second stage of the project
- Contracting with UNOPS for assistance in local implementation, monitoring, and evaluation
- Coordination within Cluster 5 to evaluate the development and use of a common implementation framework
- Coordination with other UN agencies operating in Southern Iraq to carry out pilot projects in complementary and mutually beneficial locations, and to employ their local staff and contractors for implementation assistance on an as-needed basis.

C. Project approach

This project is an integrated package of five components, and specific activities under each component are summarized in the logical framework. The following section provides some key additional information on the linkages among specific activities.

Component 1: Support for strategy development and coordination

The development of a marshland management plan is a long-term process that encompasses various disciplines and perspectives, including transboundary resource allocation, agriculture, industry, food production, land use, socio-cultural heritage, and displaced persons, as well as environmental issues. Formulating such a plan will require individual strategy formulation and coordination within the above areas, consensus building, allocation of substantial resources, political will, and considerable institutional capacity.¹

Nevertheless, there is a current need to strengthen the coordination mechanism, and to provide environmentally sound input and objective analysis. There is also an urgent need to find and apply suitable options for immediate environmental relief, and to build the necessary capacity in Iraq for longer-term environmental management. This project aims to initiate this process by addressing such needs through various activities within this component.

UNEP is in the process of submitting another proposal that focuses on coordination, building upon the results and insights generated from this component. This additional proposal, which is in the UN Iraq Trust Fund pipeline, will support the development of the national, regional, and international strategies and action plans for marshland restoration, utilizing the practical knowledge and capacity from this project as building blocks. Discussions on activities to be undertaken within the next proposal are underway with the relevant Iraqi authorities.

Activities to be undertaken within this component include the following:

- **PIU establishment:** The project will establish the Project Implementation Unit (PIU) within the Ministry of Environment, and provide support to strengthen the institutional capacity of the ministry to address marshland management, and to establish an anchor for this project within Iraq. The PIU will, among other tasks, facilitate dialogue among various line ministries and stakeholders for the coordination of marshland activities, and provide implementation support.
- **Survey of policy and institutional frameworks:** The project will conduct a survey to assess the current policy and institutional frameworks for marshland management, and identify the roles and responsibilities of stakeholders. The clarification of the framework will articulate the decision-making process and actors, and help identify areas where priority actions and support may be needed by the national government and donors.
- **Roundtable organization:** Among UN organizations there is a need for a coordinated response for sound marshland management. To address this need, UNEP organized a Roundtable on Marshland initiatives during 2004 with Iraqi ministries and stakeholders, relevant clusters, and bilateral project personnel. Held in Amman, the Roundtable discussed the current status of various initiatives, both environmental and otherwise, that are taking place in/for the Iraqi Marshlands, and supported the dialogue for management plan development.
- **Support for environmental integration:** UNEP will provide support for assessments that aim to ensure that environmental dimensions are adequately reflected into the ongoing management strategy formulation within the country. Such support is intended to provide objective counter-analyses that are based on sound environmental science and policy perspectives.
- **Donor coordination:** As there are other bilaterally supported initiatives underway for marshland restoration and management, coordination of international activities is important to find and exploit synergies and avoid duplication. (See the section on specific assessments for further detail.) Such coordination has already been initiated, beginning with a meeting in early 2004 sponsored by the Italian government. UNEP

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_11431

