

Overview

(1) Background and objectives

Background to the consideration of environmental assistance for Iraq

Iraq used its rich oil reserves to fuel modernization, and thanks to its efforts in education, once boasted a relatively highly educated populace. However, as a result of the Iraq War and subsequent conflict, the country is in a state of increasing ruin, and is in urgent need of reconstruction assistance from the international community through international organizations and country-to-country cooperation. There are particularly high expectations for environmental assistance owing to its symbolic significance for Iraq's reconstruction, and the Ministry of the Environment is considering concrete methods of contributing to Iraq's reconstruction in the environmental field. While only limited information can be obtained until security begins to improve, Japan needs to examine areas in which it could contribute in the future, and formulate policies for meeting its responsibilities in accordance with its status in the international community.

The purpose and objectives of the Special Committee

Iraq suffers from a wide range of environmental problems, including environmental degradation stemming from ill-advised development under the former regime, delayed development or functional decline of environmental infrastructure due to lack of funds, and reckless exploitation of natural resources. Resolution of these problems requires that members of the international community cooperate to provide assistance in line with their respective capabilities. Japan should accordingly identify the fields in which its technology, resources, and frameworks can be used most effectively and efficiently. Insofar as Japan is expected to examine measures and concrete possibilities for providing assistance in the environmental field as an aspect of the reconstruction of Iraq, the purpose of the Special Committee is to investigate the current status of Iraq's environment and gather information on assistance initiatives in the environmental field being implemented by international organizations and other parties, and based on these investigations, consider the forms of environmental assistance that Japan could provide.

(2) Iraq's environmental problems and assistance needs

The destruction of Iraq's southern marshlands

Iraq's southern marshlands were once one of the greatest expanses of marshland in the western half of Eurasia and a valuable habitat for wildlife including some endangered species.

The area has also served an important role as a stopover site for migrating birds and as a constituent part of the Persian Gulf's fishing industry. However, Saddam Hussein's regime constructed dikes and canals to divert water from the marshes and drain them, causing 90% to dry up. The draining of the marshes has had a disastrous impact on the ecosystem, and has endangered the survival of a number of indigenous species. The marshlands also served as a spawning ground and nursery for marine life, and with the dramatic decline in these capabilities as a result of draining, the Gulf's fishing industry as a whole has suffered severely.

The process and challenges of rehabilitating the marshlands

Work began on destroying the dikes and reflooding the marshes almost as soon as the Iraq War ended, and about 40% were reflooded within a year. However, because of the haphazard way in which this reflooding was carried out, rehabilitation of the marshes has been patchy, with some localities showing rapid restoration of vegetation, while others have been slower to recover, and still others showing no signs of recovery whatsoever. The repopulation of reflooded marshlands by the Marsh Arabs has also begun, and this returnee population also faces many problems related to quality of life and public hygiene.

Impact of neighboring country watershed management on marshland rehabilitation

The aquatic environment of Iraq's southern region is fed by rivers whose uppermost reaches lie in Turkey, middle reaches in Syria, and lower reaches in Iraq. Turkey has constructed dams on both the Euphrates and Tigris Rivers, and Syria has constructed dams on the Euphrates and some of its tributaries. Iran too is exploiting water sources on its side of the marshes, significantly affecting the volume of water flowing into the Iraqi side.

Current status of household waste management

Up to the Iraq War, household refuse was collected by dustcarts in Baghdad and other major cities. Though quality declined after the Gulf War, this system was apparently still working relatively effectively; however since the Iraq War, this system has ceased to function, and urban household refuse is now dumped on roadsides. As for treatment, open dumping was the norm for urban domestic refuse; in rural areas where no collection systems existed, refuse was burned outdoors or dumped in the surrounding countryside. No hygienic final treatment systems currently exist in Iraq.

Problems related to special types of waste

Most hospitals in central Baghdad used to use incinerators to dispose of medical waste, but due to lack of funds, fuel and parts during and after the Iraq War, most have fallen into disuse, as a result of which large amounts of medical waste remain uncollected and abandoned. The War and subsequent plundering and other destructive acts have also generated large

amounts of construction and military waste. No progress has been made on the clearing up of destroyed and abandoned vehicles and vessels.

Current status of water supply

Before the Gulf War, Iraq's water supply system employed what was at the time up-to-date technology and functioned efficiently. However, with the imposition of economic sanctions, Iraq was unable to expand or update the system, resulting in extensive leaks throughout the network, and a steady decline in the volume and quality of water supply. This, combined with the growth of urban populations, has affected everyday life, with some areas receiving almost no water. Waterborne infectious diseases, which had been eradicated prior to sanctions, also spread again due to the impossibility of importing chlorine disinfectants.

Current status of household wastewater treatment

Metropolitan Baghdad's sewer system covered 80% of the city, while the national average was 28%. Similarly, the wastewater treatment rate was 55% for metropolitan Baghdad, and under 20% in the governorates. Wastewater from households not connected to sewers is treated on an individual basis, but outside metropolitan Baghdad, unsanitary disposal is not uncommon. Moreover, according to a survey conducted immediately after the end of the Iraq War, there were no functional treatment facilities, and untreated sewage and sludge was allowed to flow freely into rivers, water channels, and unoccupied land, causing environmental and health problems. Baghdad's wastewater flows into its only source of water, the Tigris River.

Industrial pollution

Iraq's industry has suffered severe impacts from economic sanctions and lack of investment, causing chronic environmental problems such as the discharge of untreated wastewater from factories, leakage of chemicals into soil and groundwater, and release of harmful exhaust gas and particulate matter into the atmosphere. Many facilities that handled harmful or dangerous substances, including factories, mines and ammunition storage facilities, also suffered war and other damage, and have been subsequently abandoned without the implementation of any appropriate environmental or health protection measures.

Pollution and other problems caused by the petroleum industry

Iraq is blessed with plentiful oil resources, boasting the world's second largest reserves (third according to some statistics). However, exploitation of those reserves has had major impacts on the environment, including the large-scale draining of the southern marshlands. Oil extraction also carries the risk of spilled oil contaminating aquatic environments, and the burning off of by-products such as natural gas generates NO_x, SO_x and greenhouse gases. Under the current circumstances of frequent power cuts causing people to secure energy by

economizing on food, an energy policy needs to be implemented, but that policy will need to employ environment-friendly technology.

Degradation of land and desertification

Drought and marshland drainage have exacerbated degradation of land and desertification. The passage of military vehicles is also thought to damage the fragile vegetation of arid zones and hasten wind erosion.

(3) Ongoing reconstruction initiatives

Japanese assistance for Iraq's reconstruction

Japan has pledged an initial \$1.5 billion in grant aid and up to \$3.5 billion in mainly yen loans as mid- to long-term assistance for Iraq's reconstruction. In addition to direct assistance, Japan is also channeling some of this money to reconstruction-related funds, and via NGOs to emergency aid projects, etc. The Government of Japan has already announced its intention to provide yen loans up to about 76 billion yen for port rehabilitation, irrigation sector support, and thermal power plant rehabilitation.

Environmental initiatives

As an environmental project of the Japan International Cooperation Agency (JICA), in March 2006, 13 trainees were brought to Japan to participate in a group training program on restoration of marshlands in Southern Iraq. JICA has also held third-country training programs in Jordan in areas such as waste management and in water supply, sewerage, and water quality analysis, and has recruited Iraqi trainees for existing group training programs in Japan. In 2004, to plan training programs in the environmental field, JICA researched capacity building needs. It proposed implementation of the following 8 types of training program: "Environmental Assessment and Environmental Impact Assessment (EIA)", "Environmental Research, Statistics and Study Approaches", "Environmental Monitoring", "Management of Protected Areas", "Conservation Biology", "Environmental Awareness", "Environmental Laws, Legislations, Regulations and Agreements", and "Solid Waste Management: Legislative and Technical Aspects". Through the International Reconstruction Fund Facility for Iraq, to which Japan is a donor, UNEP's International Environmental Technology Centre (IETC) has also held training and pilot programs, compiled and analyzed data, and provided coordination support related to marshland management. UNEP's Post Conflict Assessment Unit (PCAU) too has, in addition to providing relevant equipment, helped to nurture human resources in the environmental field in Iraq by providing Iraqi Ministry of Environment personnel with training in areas such as environmental legislation, environmental administration and environmental monitoring technology, and help in drafting environmental legislation and environmental

assessment reports. Other environment-related activities include the provision of refuse collection vehicles and other equipment through grant aid, grassroots-level assistance, donations to international agencies, assistance through NGOs, and the execution of studies for the formulation of reconstruction and rehabilitation projects in Iraq.

Environmental assistance from donors other than Japan

Other than Japan, the United Nations Assistance Mission for Iraq (UNAMI) is providing assistance in the environmental field throughout Iraq. Where the southern marshlands are concerned, various donor agencies are providing assistance according to the issues they have chosen to tackle, with the US Agency for International Development (USAID) focusing particularly on socioeconomic issues, while Italy's Ministry for the Environment and Territory (IMET) is helping on marshland water issues, and the Canadian International Development Agency (CIDA) on ecosystem rehabilitation. UNEP is implementing a pilot project that makes use of appropriate technology in the fields of water supply and sanitation.

(4) Potential for the provision of environmental assistance by Japan

Goals of assistance for rehabilitation of the southern marshlands

The ultimate goal of such assistance should be to ensure the survival of both the nature and human community of the region through returning the vegetation and ecosystem to its former state and rebuilding the foundations on which the Marsh Arabs structured their livelihoods. From the social viewpoint, this will require support for rehabilitating human communities and promoting wise use of the marshes; from the scientific viewpoint, it will require the effective use of endemic biological resources, and application of technology that can be easily sustained on limited funds, energy and chemical substances; and from the international viewpoint, it will require coordination with other countries in the Tigris and Euphrates drainage basins, and exchange of information and division of roles through international teamwork. Consideration also needs to be given to such matters as the sustainable use of biological resources, the coupling of the social system with marshland rehabilitation, the ranking of assistance priorities based on sound knowledge of current living standards, and the preservation of biodiversity through taking a cautious approach to the introduction of non-native species.

Goals of assistance in the fields of water supply, sanitation, and waste

Iraq's water supply is relatively well-developed, with urban areas being equipped with networks of water pipelines. However, because facilities have become rundown owing to maintenance issues, the short-term goal should be the rehabilitation of existing facilities and water supply pipelines, while the mid- to long-term goal should be to increase the water

supply capacity. Under the current circumstances of almost total lack of working water treatment facilities, large volumes of sewage are flowing into the Tigris and Euphrates river systems, particularly in Baghdad. Accordingly, there is an urgent need for initiatives to build sewage treatment facilities in major cities such as Baghdad and Basra and reduce the unsanitary disposal of sewage in other governorates and autonomous regions through the use of household sewage treatment systems. Where waste management is concerned, a large workforce recruited as a job creation strategy is already engaged in the task of refuse collection. As such, in addition to the provision of refuse collection equipment, Japan should also consider such assistance as the construction of sewage treatment plants and formulation of long-term waste management policy.

Goals of assistance in other environmental fields

Top priority must first be put on the restoration of basic living standards of the Iraqi people, after which it will be important to set staged targets and implement plans for raising the quality of life of inhabitants while protecting the environment in conjunction with economic development. Because atmospheric pollution and global warming are mutually connected, energy generation needs to be comprehensively handled with a view to long-term issues such as greenhouse gas reduction. An urgent task is the removal and detoxification of harmful and dangerous substances in environmental hotspots, followed by decontamination of soil and prevention of groundwater pollution by harmful substances in the locations concerned.

Assistance for raising environmental management capacity

As Iraq's political system undergoes major changes, the creation of legislation and building of institutions is a matter of maximum priority. Environmental statistics constitute fundamental data for considering environmental policy and standards, while monitoring and evaluation are important means for measuring the effectiveness of environmental policy. As such, there is an urgent need to improve the capabilities of the Iraqi Ministry of Environment in these fields, while in the mid- to long-term view, the nurturing of highly competent environmental specialists is also called for. Another need, in view of the fact that Iraq has, owing to its long isolation from the international community, not become a signatory to international conventions in the environmental sphere, is the acceptance of these conventions and the implementation of environmental management based on those treaties through international cooperation. Moreover, in view of the risk that a rush of aid for the reconstruction of Iraq could, depending on the way it is applied, lead to further environmental degradation, there is also a need to establish mechanisms, such as environmental assessment, for ensuring that sufficient attention is paid to the environmental and social aspects of development.

(5) Potential for future assistance in the environmental field

• Cooperation that can be provided under the current circumstances

The Committee recommends the following as forms of cooperation that can be provided under the current circumstances: (1) promotion of assistance projects that can be implemented under the current circumstances, (2) planning of projects to be implemented once the political situation stabilizes, (3) active participation in frameworks for donor coordination, and (4) promotion of teamwork between research institutes and universities.

1. Promotion of assistance projects that can be implemented under the current circumstances

Firstly, assistance projects that can be implemented outside Iraq, such as training or the investigation of needs by inviting relevant Iraqi personnel for hearings in foreign locations, could be effective, but these 2 elements should be combined so that trainees are at the same time used as information sources for the investigation of needs. Secondly, Japan should pursue projects that can be implemented without the on-site involvement of Japanese personnel, such as the provision of equipment through grant aid, and support for reconstruction activities being conducted mainly by Iraqis themselves. Thirdly, project preparations such as mid- to long-term infrastructural assistance to be financed by yen loans and other sources should be considering the guiding principles of the guidelines of the environmental and social considerations of Japan's ODA. Fourthly, continued support should be provided for implementation of the second stage of UNEP's marshland management project as an assistance initiative aimed at the rehabilitation of Iraq's southern marshlands.

2. Planning of projects to be implemented once the political situation stabilizes

The building of partnerships with local agencies capable of conducting activities within Iraq is of vital importance. This calls for consideration firstly of such policies as the promotion of supervisor-level exchanges through inviting supervisors to Japan as trainees, and the building of official government ties through high-level meetings and other means. Another measure would be to establish a structure outside Iraq for the on-site implementation of projects as soon as the political situation stabilizes sufficiently to allow entry, and use this structure to train Iraqi personnel while conducting research for the formulation of projects.

3. Active participation in frameworks for donor coordination

Japan should actively pursue opportunities for participation in donor gatherings to cultivate complementary and non-overlapping ties with other donors that secure a role for Japan. It is of vital importance for Japan to prepare for such meetings by drafting a list of priorities and negotiating for the allocation of roles, cooperation, etc. in accordance with these priorities.

Possibilities for Japan to contribute technologically to projects being implemented by both the UN and donor country agencies should also be considered.

4. Promotion of teamwork between research institutes and universities

Joint research by Japanese and Iraqi universities and research institutes on shared themes aimed at resolving Iraq's environmental problems should be promoted both for the role it could play in improving the capabilities of Iraqi researchers and its importance for identifying future assistance needs.

- **Mid- to long-term cooperation**

The Committee recommends the following as forms of mid- to long-term cooperation: (1) drafting of assistance plans for specific environmental fields; (2) formulation and implementation of cooperation projects; (3) support for participation in frameworks related to global environmental issues; and (4) support for the creation of structures aimed at preventing environmental degradation caused by reconstruction development.

1. Drafting of assistance plans for specific environmental fields

Assistance plans for specific environmental fields should be drafted in preparation for when law and order in Iraq is stable enough to permit their implementation. Such plans should clearly explain the distinctive features of Japanese assistance and its merits compared with that of other donors. This will require the drafting of strategic plans based on a sound examination of available Japanese environmental technologies to identify those that could be applied effectively to Iraq's geographical, social and economic circumstances.

2. Formulation and implementation of cooperation projects

Japan should identify feasible projects that utilize its strengths, such as personnel training and the localization of Japanese technology. A concrete example would be contribution to the rehabilitation of Iraq's southern marshlands from such perspectives as (1) rehabilitation of the marshland ecosystem that pays due consideration to the recycling of resources, (2) reconstruction of the foundations of everyday life of the marshland dwellers, and (3) activating mechanisms for the coordination of cross-border water resource management. Japan should also consider how it can team up with international organizations and other donors to provide efficient assistance.

3. Support for participation in frameworks related to global environmental issues

It is important for Japan to support Iraq's participation in frameworks related to global environmental issues being implemented by the international community. Because becoming a signatory to such conventions will impose international obligations whose fulfillment will

require the building of relevant capabilities within the organizations concerned, Japan should consider the planning of programs for the comprehensive raising of capacity from institutional, structural, and human resources-related perspectives. Japan should also consider assistance aimed at the sustained conservation of the southern marshlands after rehabilitation through arguing their international importance and the need to protect them internationally under the Ramsar Convention.

4. Support for the creation of structures aimed at preventing environmental degradation caused by reconstruction development

In view of the anticipated large-scale reconstruction development throughout Iraq, there is a need to support initiatives aimed at addressing the environmental issues expected to emerge from such development. Where projects implemented by Japan are concerned, there is a need to ensure that due consideration is paid to environmental and social concerns through establishing appropriate environmental assessments, environmental and social considerations, and other systems and implementation guidelines, and training required personnel. This in turn will require assistance from both legislative and human resources training perspectives to build institutions within the Iraqi government itself for addressing environmental and social considerations, and to improve its capacity for the implementation of plans, environmental monitoring, and compliance with laws and so forth.