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**EVALUATION STUDY ON JAPAN'S ASSISTANCE
TO WATER RESOURCES DEVELOPMENT SECTOR
IN THE KINGDOM OF MOROCCO**

**FINAL REPORT
SUMMARY**

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SUMMARY

1 EVALUATION PURPOSE

The purpose of this evaluation study is firstly to comprehensively review Japan's ODA activities in Morocco's water resources development sector for agricultural use and potable water, secondly, to provide recommendations for formulating and implementing more effective and efficient ODA activities in the future, and thirdly to fulfill the accountability to the Japanese public by publicly announcing the results of the study.

This study identified all the ODA activities in Morocco's water resources development sector for agriculture and potable water as a set of program. The objects of this study are the ODA activities from fiscal 1999 to 2001, including loan, grant aid, and technical assistance.

The targeted ODA activities were not implemented under a comprehensive program, but were individually adopted, appraised and implemented upon reviewing each Moroccan request. However, water resources development for agriculture and potable water has been regarded as one of Japan's ODA priorities since policy consultation between Japan and Morocco in 1998. Based on documents from the policy consultation, this evaluation study assumes that these ODA activities were implemented under shared objectives described below:

Sector Objective: Improve living standard of people (small farmer, or inhabitant in rural areas) by improving agricultural productivity and supplying potable water

Sub-Sector Objective: 1) construction of irrigation facilities, 2) secure water source (by construction of medium-scale dam), 3) construction of potable water supply facilities (3)-1 construction of potable water supply facilities in medium-scale cities, 3)-2 construction of potable water supply facilities in rural areas), 4) operation & maintenance of water facilities

The study verified whether the objectives of Japan's assistance for Morocco were consistent with upper-level ODA policies, Morocco's needs in the water sector, and the worldwide tendency toward assistance in the water sector. The study also examined the achievements ("results") of Japan's assistance between 1999 and 2001 on an "input" and "output" basis. Changes in related indicators in Morocco during this period, and other donors' policies and achievements in this sector were also studied for reference purposes. Furthermore, the study checked whether or not the process for

formulating and implementing the ODA activities were aligned with Morocco's needs.

2 WATER SECTOR IN MOROCCO

(1) Outline of Morocco's Water Resources

Average annual precipitation in Morocco is 150 billion m³, varying year by year between 50 billion m³ and 400 billion m³. Annual evaporation is, on average, 121 billion m³. For the remaining 29 billion m³, there are about 20 billion m³ water resources which are technically and economically exploitable. These exploitable resources are comprised of 16 billion m³ of surface water and 4 billion m³ of groundwater.

In all Morocco, 103 large scale dams have been constructed with total storage capacity of 15.7 billion m³. In addition, groundwater exploitation facilities, as well as 13 water transfer systems, have been constructed. As a result, an annual average of 13 billion m³ of water is already developed.

Morocco's irrigable area is 1.664 million ha, which comprises 1.364 million ha of perennial irrigation area and 0.30 million ha of seasonal/flood irrigation area. The perennial irrigation area is made up of 0.88 million ha of large scale irrigation and 0.484 million ha of medium-small scale irrigation. As of 2002, realized perennial irrigation reached 1.0162 million ha, 0.6826 million ha of which is large scale irrigation and 0.3336 million ha of which is medium-small scale irrigation.

For urban areas, the individual dwelling distribution rate is 87 % (2001) and production of potable water reached 845 million m³ in 2001, increased by 1.8% compared to 2000. ONEP (Office National de l'Eau Potable) covered 80% of its production, and with the remainder coming from private companies such as Elyo. As for distribution of water in urban areas, locally autonomous public corporations, private companies and ONEP take charge. In 2001, there were 15 local public corporations, with 1.038 million customers, which was 40% of the national total. In Casablanca and Rabat two private companies, LYDEC and REDAL, have 0.811 million customers (31%) in total. For the rest, 281 distribution center managed by ONEP with the customers of 0.742 million (29%) distribute water.

In rural areas, only 14% of the rural population had public water supply facilities in 1990. Out of the 40,000 villages throughout the country, 46% had less than 200 inhabitants per village, and barely 6% had more than 1,000 habitants. Such small village populations have been a major factor in restricting implementation of potable water supply project in rural areas. At present, Program of Group Potable Water Supply to Rural Population (PAGER) is in progress and the access rate to public water supply system in rural areas had increased from 14% to 50% by 2002.

(2) Morocco's Policy on Water Resources Development

The Government of Morocco puts forth policies in accordance with the national development plan. It is now implementing the 2000-2004 five-year plan. Stabilization of the macro-economy and economic development were prioritized in the preceding five-year plan, whereas, in the latest plan, social issues such as poverty reduction, education and regional gap, etc. are also emphasized.

The population in 1999 was 28.2 million. In the 2000-2004 five-year plan, the population growth rate is assumed at 1.6% per annum, resulting in a projected population of 30.5 million in 2004, and 33.2 million in 2010. The proportion of young people less than 15-years old is high (31.6% as of 2001). The proportion of population in urban areas is predicted to reach 62% in 2010, from 50% in 1992. Based on such demographics, the plan assumes that further needs will arise in sectors such as; 1) education, 2) employment, 3) health and sanitation, 4) water resources, 5) roads, 6) housing and 7) food. The plan sets out specific medium to long term targets for each sector.

Targets for the water resources sector in the plan are as follows: dams and drilled wells will be constructed so as to meet anticipated demand in 2020. Potable water supply will be doubled before 2010 to cope with the 4% per annum demand increase. The rate of the urban population connected to potable water networks in their homes will be raised to 94% in 2010 from 85% in 1999. The access rate to public water supply system in rural areas will also be increased from 38% in 1999. In addition, privatization of water resources development sector will be promoted.

Water Law specifies the establishment of Basin Agencies which evaluate, plan and manage the water resources in their respective river basin, in order to strengthen the institutional condition of water management. Other principles stated in the Law are; 1) water as public domain, 2) regulation of development, distribution, and sale of potable water, 3) improvement of agricultural water development and use, and 4) security against illegal water resources development or conduct which causes water pollution, etc.

The country of Morocco is divided into 6 major river basins, with long-term water resources development policies planned and stipulated in Integrated Master Plans. Establishing these plans mainly aims to estimate water demand from different sectors such as potable and industrial water, irrigation and hydropower generation, and to determine optimal integrated scheme of the water resources development.

In the 2000-2004 five-year national development plan, the objectives of the hydraulic sector are set as; 1) contribution to potable water supply in both urban and rural areas, 2) contribution to provisions supply, 3) rehabilitation and maintenance of hydraulic facilities, 4) improvement and maintenance of water quality, 5) protection of people and property against inundation and flood, 6) development of hydro-potential for power generation, and 7) equitable distribution of water throughout the country and regional development.

The objectives of the irrigation sector in the five-year plan are; 1) new irrigation development, and 2) improvement of irrigation efficiency (rehabilitation and modernization).

The objectives of the potable water supply sector are set as; 1) 89% of urban population connected to potable water network in their homes by 2004, 2) 62% access rate to public water supply system in rural areas by 2004, 3) appropriate maintenance of production and distribution facilities for potable water, 4) improvement of ONEP's self-financing, and 5) improvement of water quality and economical production of water.

(3) Worldwide Tendency Related to Water Resources Development

The worldwide tendency of water resources development can be recognized as evolution process of discussion through setting up targets for access to safe drinking water and basic sanitation in Millennium Development Goals and Johannesburg Plan of Implementation, the Hague Declaration, the WCD (World Commission on Dams) report, and the succeeding international conferences such as the Third World Water Forum or Evian G8 Summit. International organizations such as UN-related organizations, the World Bank, the Africa Development Bank and EU, also follow these principles and incorporate them into each organization's strategy.

The important point to be considered here is that there is wide spread consensus on the importance of securing potable water. Moreover, 1) decentralization of water services, 2) demand control including appropriate pricing, 3) decision making by all stakeholders' participation, 4) mainstreaming gender, 5) conservation of environment, and 6) integrated water management which embraces all of these elements with consideration of finite nature of fresh water resources and protection of ecosystem are also considered important. The global focus has been shifting from development of water resources and related infrastructure to policies and strategies based on integrated water management.

3 RESULT OF EVALUATION

(1) Relevance of Purposes

Japan's cooperation toward Morocco's water resources development for agricultural use and potable water between 1999 and 2001 was mostly consistent with Japan's ODA policies (such as ODA Charter and Mid-Term Policy on ODA) and the water resource development policies of Morocco. Particularly, construction of potable water supply facilities in rural areas was related to basic human needs and highly relevant to those policies.

Also, Japan's cooperation was consistent with the international goal of increasing access to clean water, although Japan's cooperation did not directly include integrated water resource management, institution building, or macro-level water pricing which are now key issues of the global consensus on water-related strategies.

It should be noted that the government of Morocco is in the middle of drafting its "National Water Plan" which is based on a comprehensive review of the existing water resource development plan. Therefore, it is important that future cooperation strategies should reflect the result of this review.

(2) Effectiveness of Results

As for input, Japan's cooperation in terms of monetary amount was largely concentrated on the sub sectors; construction of potable water supply facilities in medium-scale cities, and construction of irrigation facilities. In terms of the numbers of the projects, input was concentrated on the sub sector; construction of potable water facilities in rural areas. Most of the projects implemented under the scheme of Grant Assistance for Grassroots Project in this sector were water supply projects in rural areas. As far as the projects for which Loan Agreement or Exchange of Notes were signed between 1999 and 2001 are concerned, the amount was the largest in the sub sector; construction of potable water facilities in rural area, with the next being; construction of water supply facilities in medium-scale cities, followed by the sub sector; secure water source, and finally the sub sector; construction of irrigation facilities. Recently, the amount and number of the projects have been shifting toward construction of water supply facilities, especially for rural areas, the need for which remains high.

Realization of output was confirmed in every sub sector. However, following the Feasibility Study conducted by the cooperation from Japan, construction of the medium-scale dam proposed in the study was not realized due to insufficient funds, and there seems to be no prospect for realization at this moment. Regarding outcome, attribution to increases in agricultural productivity, potable water supply and improvement of living standards of the people at national/regional level was not directly confirmed from the statistical indicators studied. However, the fact that potable water supply projects benefited 1.4million people nationwide, directly and indirectly, and that water supply related indicators improved substantially at the national level, it can be reasonably assumed that these projects had positive impacts on improvement of water-supply in Morocco.

(3) Appropriateness of Process

At the planning and implementation stages of the cooperation in the water resource development sector, coordination and consultation among the Ministry of Foreign Affairs, JICA (Japan International Cooperation Agency) and JBIC (Japan Bank for International Cooperation) were conducted properly. Consultations with the Moroccan government related to individual projects requested by Morocco were conducted in an appropriate manner. Long-term experts played a role in helping to plan rural water supply projects. In the meantime, official consultations regarding overall sector policies were not conducted except for policy consultations in 1999. As for NGOs and other donors, though consultations and coordination were carried out on an individual project-basis, formal consultations regarding comprehensive policies in this sector were not held.

It can be said that the process was appropriate for the most part. Although, it is necessary to enforce consultation regarding overall cooperation strategies in this sector with the Moroccan government, other donors, and NGOs as it is mentioned in ODA Charter and Mid-Term Policy on ODA.

4 RECOMMENDATIONS

(1) Recommendations from Evaluation on Purposes

To reconsider future direction of cooperation in surface and ground water development, based on the review of water resources development plan by the Moroccan government.

Since the Moroccan government is currently drafting its National Water Plan, Japan's cooperation policies have to be formulated in a way which is consistent with that plan. It is likely that potentially exploitable water sources listed in the current river basin-based Integrated Master Plan will be revised downward. Therefore, in particular, cooperation toward large scale irrigation and medium to large scale dam projects should be carefully examined in view of their necessities and alternatives, based on the overall National Water Plan.

To consider the possibility of adding cooperation toward demand management, and institutional and organizational reforms as future priority areas.

It is expected that Morocco will focus not only on increase of water supply but also on further demand management in the future, considering the decrease in potential water resources, depletion of underground water due to over development, sedimentation in dams, and deterioration of water quality. Although it is not easy to see tangible outputs in the short-term through cooperation in these fields, it is desirable that future water-related projects be designed with an eye toward organizational and institutional development through the dispatch of experts, training, etc., among various schemes of Japanese ODA.

To consider the possibility of adding sewage facility construction in medium-sized cities as future priority areas.

While construction of potable water facilities has been accelerated in medium-sized cities with the assistance from Japan and other donors, sewage system infrastructure did not make much progress. Prompt action is desirable since the quality of water and environment have deteriorated due to the increase in civil sewage resulting from population increase and the concentration of population in cities. ONEP now covers the sewage sector and is making an investment plan covering the area in-charge. Cooperation toward their plan could be considered.

(2) Recommendations from Evaluation on Process

To enhance consultation between Japanese side (the Japanese Embassy and implementing agencies) and Moroccan government, NGOs, and other donors.

As noted, the consultation between Moroccan government on individually- requested project bases was carried out properly. However, overall policies in this sector were not officially discussed except for the policy consultation. In upcoming years, it will be more effective to analyze policy level issues with a wider perspective covering the entire water sector, and to tackle these problems, rather than

addressing various issues individually. It is expected that ODA Task Force organized in 2003 will initiate the respective agencies' collaboration and consultation not only with the Moroccan government but also with NGOs and other donors.