

## Summary

<b>I. Outline of the Project</b>	
<b>Country :</b> People's Democratic Republic of Algeria	<b>Project title :</b> The Project for Capacity Development of Environmental Monitoring in Algeria
<b>Issue/Sector :</b> Environment	<b>Cooperation scheme :</b> Technical Cooperation
<b>Division in charge:</b> Environmental Management Division II <b>Dept. Division</b> Global Environment Department	<b>Total cost :</b> 260 million yen
<b>Period of Cooperation</b>	<b>(R/D):</b> Dec. 2005 – Nov.2008
	<b>(Extension):</b> <b>(F/U) :</b>
	<b>Partner Country's Implementing Organization :</b> The National Observatory for Environment and Sustainable Development(ONEDD), The Ministry of Land Planning, Environment and Tourism (MATET)
	<b>Supporting Organization in Japan :</b> Ministry of Environment

### 1. Background of the Project

The Ministry of Land Planning, Environment and Tourism (MATET) prepared the "Environment National Strategy" and the "National Environment Action Plan for Sustainable Development (NAPE-SD)" under the process of preparing "The Report on the Environmental State and Future" in 2000. The "Environment National Strategy" identified twelve challenges to achieve the following three objectives: 1) To integrate the environmental viability into the programs of the socio-economic development of the country, 2) To achieve a sustainable growth, and reduce poverty, and 3) To secure the public health. The National Observatory for Environment and Sustainable Development, ONEDD, was established under MATET as a part of the NAPE-SD in 2003. The mission of ONEDD is to support the decision making of the environmental administration, and to provide services in the field of laboratory analysis through collecting the information on the current condition of the environment and industrial activities and research of the environment. When outline of the water and sediment pollution in the Oued El Harrach was reported as a result of field studies conducted by the JICA short-term experts dispatched from 2004, ONEDD recognized the needs to strengthen his capacity to conduct the environmental monitoring. Consequently, the Government of Algeria requested to the Government of Japan a technical cooperation project for capacity development of ONEDD in environmental monitoring.

### 2 . Project Overview

The Project focused on the strengthening of environmental monitoring capacity of the Central Regional Laboratory (CRL), which is a part of the ONEDD, located in Alger.

#### ( 1 ) Overall Goal

- 1) ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations with the Central Regional Laboratory (Alger) plays a leading role.
- 2) National environmental protection policy is promoted and counter-measures are recommended.
- 3) Counter-measures to prevent environmental pollution in Oued El Harrach industrial areas are deployed.

#### ( 2 ) Project Purpose

Environmental monitoring capacity of the Central Regional Laboratory (Alger) is strengthened.

### ( 3 ) Outputs

- 1) Laboratory management to ensure a high-quality operation is in place.
- 2) Skills and knowledge in field survey and sampling management are acquired.
- 3) Skills and knowledge in organic chemical analysis are acquired.
- 4) Skills and knowledge in inorganic chemical analysis are acquired.
- 5) Skills and knowledge in microbiological analysis are acquired.
- 6) Skills and knowledge in developing and maintaining database are acquired.
- 7) Skills and knowledge for environmental evaluation, analysis and recommendation utilizing the obtained data are acquired.
- 8) Technical knowledge for the de-pollution and remediation are acquired.
- 9) Knowledge on environmental quality standards, regulations, and institutional/administrative setup for de-pollution and remediation are acquired.

### ( 4 ) Inputs

#### Japanese side :

Short-term Expert 18    Equipment 73,500,000 yen

Trainees received 7    Local cost 26,200,000 yen

#### Algerian Side :

Counterpart 22    Local Cost 381,000 Euro

2 vehicles for field samplings    Construction of Provisional Laboratory Facilities

<b>II. Evaluation Team</b>		
<b>Members of Evaluation Team</b>	Dr. Mitsuo YOSHIDA, Team Leader Senior Advisor, Institute for International Cooperation, JICA Ms. Eriko TAMURA, Member Senior Program Officer, Environmental Management Division 2, Global Environment Department, JICA Ms. Shinobu MAMIYA, Member, Permanent Expert, International Development Associates, Ltd.	
<b>Period of Evaluation</b>	4/ 10/ 2008~ 21/ 10/ 2008	<b>Type of Evaluation:</b> Terminal Evaluation

### III. Results of Evaluation

#### 1 . Project Performance

##### -Inputs and Outputs

The Project has mostly fulfilled the input along with the plan stated in the R/D and PDM. Some delays have been observed for equipment provision by the Japanese side which was affected by the delay of new lab facilities to be constructed by the Algerian side.

Output 1 has been partly achieved. The acting director of the laboratory was appointed and the organizational chart was created, but the meetings of laboratory members were held regularly in 2006 and 2007, but frequency was decreased in 2008. The mutual-training mechanisms through “physico-chemistry section” built-in the CRL

have helped to increase the individual technical capacity of C/Ps. Further efforts should be made, especially to improve the information sharing mechanism among laboratory staff and to streamline the decision making process.

Output 2 has been satisfactorily achieved. The number of collected samples is increasing by year. SOPs for field survey and sampling were prepared and used by C/P who were able to provide trainings for those laboratory engineers / technicians at Oran and Constantine Regional Laboratories as well as the monitoring station using SOPs.

Output 3 has been partly achieved. The number of organic parameters analyzed at CRL has been increased and SOPs for those parameters have been completed. Further efforts should be made to improve the accuracy of data in analysis and the performance on GC/MS and FTIR.

Output 4 has been satisfactorily achieved. Knowledge and skills of some C/Ps have been advanced through trainings from the previous technical assistance by Japan and Germany. Eighteen (18) inorganic parameters can be analyzed by CRL. And their SOPs have also been completed. With continuous efforts to improve the accuracy of data in analysis, their skills and knowledge in inorganic chemical analysis have greatly advanced.

Output 5 has been mostly achieved. Due to the delay in constructing the laboratory facilities, activities under the Output 5 has just started from April, 2008. Two C/Ps are now able to analyze for total and fecal coliform using ISO 9308-1 membrane filter and SOPs for the coliform testing was prepared. There have not been any orders from clients received so far, while sea water at bathing beach (more than 23 samples) was analyzed. Continuous efforts should be made to ensure the accuracy.

Output 6 has been mostly achieved. The C/P was assigned from ONEDD/HQ and designed the architecture of database for CRL. The volume of data input into the database has been increased from 700 in 2006 to 2000 in 2008. In order for efficient utilization of database, a permanent staff should be allocated in CRL. For the security measures to protect the data from computer virus should be installed shortly.

Output 7 has been partly achieved. The report on the monitoring results with Oued El Harrach based on the available data was prepared and circulated internally and C/P made presentation about the water pollution in the Project site. Further experiences and exercises in this field are essential for comprehensive understandings and application.

Output 8 has been partly achieved. Technical information on de-pollution and remediation and water quality management plan was introduced by JET. C/Ps are now able to research and obtain the necessary information by using internet. For comprehensive understandings about the de-pollution technology, continuous efforts should be made.

Output 9 has been mostly achieved. Two seminars and workshops on environmental quality standards,

environmental impact assessment, environmental administration, enforcement and environmental monitoring were conducted in July 2007 and April 2008 for those participants from CRL, officials of ONEDD/HQ, MATET and other ministries, and those from Wilaya environmental departments and received a large impact. Importance of environmental quality standards and institutional setup for de-pollution has been recognized among relevant officers in MATET and Wilaya environmental departments. After the first workshop in 2007, soil quality standard was drafted by MATET. Furthermore, these opportunities served to strengthen the network of those concerned in the environmental sectors. Continuous efforts should be made to firmly establish the administrative mechanism.

### **-Project Purpose**

The Project Purpose has been mostly achieved. Combined efforts of the Algerian and the Japanese sides have contributed to improve the overall performance of the CRL and the environmental monitoring capacity of the CRL has been apparently strengthened. The number of orders from clients has been greatly increased by year and the number of samples analyzed has also been increased as shown below. An increasing trend of new clients by year implies that the quality of services by CRL has been ensured(Indicator 1).

		2005	2006	2007	2008 <sup>1</sup>
Number of Samples Analyzed	Heavy Metals	50	337	351	142
	Other Parameters	53	431	351	242
Number of Clients	Heavy Metals	2	21	18	23
	Other Parameters	3	20	39	44

The report produced by the CRL was drafted by those staff of CRL. The Team could not identify the comprehensive environmental report with Oued El Harrach pollution problems (Indicator 2). C/Ps at CRL is now able to provide technical advice to other regional laboratories, such as Oran and Constantine. In addition, they also provide the training to the staff of monitoring stations as well. For those occasions, SOPs prepared by the Project were effectively utilized and distributed for those participated in the training (Indicator 3). In order to sustain the current level of achievements, continuous efforts to strengthen the laboratory management and to improve the quality control of analyzed data are needed.

### **-Implementation Process**

- The monitoring was regularly conducted but not necessarily through the joint work of both Japanese and Algerian sides. Some of activities could have been carried out effectively, if some modifications have been reflected on the PDM at the time of Mid-Term Evaluation.
- During the first half of the Project period, some delays in the project implementation were observed. These delays are attributable to the delay of procurement of equipment and chemicals, malfunction of gas chromatograph, etc. Other delays are attributable to the delay of the appointment of the laboratory director, and the delay in decision making process. The communication between ONEDD/HQ and CRL should have been improved and the information should be effectively shared among C/Ps in CRL in order to increase the internal collaboration in ONEDD.

<sup>1</sup> The data included in 2008 were from January up to September 2008.

- Many C/Ps expressed that they acquired not only the specific technical knowledge and skills, but also the effective way to apply the obtained knowledge and skills for further enhancement of laboratory activities

## **2 . Summary of Evaluation Results**

### **( 1 ) Relevance**

The relevance of the Project is considerably high. According to the PNAE-DD, the environmental monitoring is one of the priority issues in the Algerian environmental sector. The Government of Algeria sets up the national project to establish the national environmental monitoring network. And there is an increasing concern on the sustainable development and environmental protection in Algeria since the environmental pollutions were detected in various areas including heavy metal contamination of Oued El Harrach, Alger and the role and responsibility of ONEDD, will be enhanced. Japanese Official Development Assistance (ODA) policy puts high priority on environmental protection toward the assistance for Algeria. In this respect, the Project's Overall Goal and the Project Purpose have been consistent with the policy of the Government of Algeria, its needs of the target population, and the policy of Japanese ODA.

### **( 2 ) Effectiveness**

The effectiveness of the Project is relatively high. The Project Purpose has been mostly achieved. And Nine (9) Outputs have been effectively contributing to achieve the Project Purpose. Outputs 2~5 were intended to strengthen the technical expertise of individual engineer on environmental chemical analysis. Output 1, 6 and 7 was intended to strengthen the organizational capacity by effective management of laboratory, lab data management and development of ability on data interpretation. Outputs 8 and 9 were intended to strengthen the consultation abilities based on the results of environmental monitoring for decision-makers. It has notified that the communication and information sharing between CRL and ONEDD/HQ have not been conducted effectively, and the initiative by the laboratory management level may not be strong enough to overcome problems encountered. Therefore, the Algerian side should expand the scope to strengthen the organizational capacity of CRL, and the institutional framework by collaboration with ONEDD/HQ, the network of affiliated laboratories and Wilaya environmental departments.

### **( 3 ) Efficiency**

The efficiency of the Project is considered as relatively low. Much time has been spent on the completion of provisional laboratory facilities to carry out the environmental chemical analysis and this has caused the delay of equipment provisions and activities to be carried out, especially for the first half of the Project period. Relatively slow decision-making and insufficient information sharing caused by present condition of management system of CRL have made it difficult to establish the strong and resilient cooperation among C/Ps. The initiative of Project management should be strengthened to resolve issues to be coped with.

### **( 4 ) Impact**

Impact of the Project is expected to be relatively large and it is likely that the one of Overall Goals will be achieved if the strong initiative of ONEDD/HQ on their part is effectively demonstrated. Other positive impacts are observed. With strengthened cooperation with CRL, DEWA has taken more strict action to control the coastal area of the Oued El Harrach through reinforcing the inspection toward industrial factories. The Project influenced policy makers to realize the need to set up the legal framework for environmental quality

standard and the draft soil quality standard has been prepared. The importance in treatment of laboratory waste water introduced by JET was highly recognized by the C/Ps of CRL who have been in process of establishing the system to properly treat the laboratory waste water by itself. No negative impact has been observed.

### **( 5 ) Sustainability**

The sustainability of the Project can be secured through continuous efforts to strengthen the laboratory management with an initiative of ONEDD/HQ. There is a pressing need to strengthen the environmental monitoring, and it is very likely for the ONEDD to play a major role with financial support from the government. In order to cope with that, the ONEDD/HQ and CRL should continue their efforts to improve their laboratory management and to establish the effective mechanism among stakeholders. Most of knowledge and technologies transferred through the Project activities are appropriate in the context of Algeria and it is very likely to be adopted. If those staff trained under the Project remained and to serve to expand the knowledge and skills for those at other regional laboratories, the technical sustainability will also be secured.

## **3 . Factors promoting sustainability and impact**

### **( 1 ) Factors concerning to Planning**

- Coping with the timely needs in the environmental monitoring of Algeria
- Appropriateness of the subjects selected for technology transfer to C/Ps
- Appropriate setting of the Project area for a model field of environmental pollution monitoring
- Responding the needs from other regional laboratories of ONEDD

### **( 2 ) Factors concerning to the Implementation Process**

- Effective utilization of seminars in order to disseminate the information and to establish the network among stakeholders
- Revising the timing of dispatch of the Japanese Experts for consecutive supports from Japan

## **4 . Factors inhibiting sustainability and impact**

### **( 1 ) Factors concerning to Planning**

- Constraints in local settings for smooth procurement procedure of equipment and chemicals

### **( 2 ) Factors concerning to the Implementation Process**

- Insufficient involvement of high-level officials of ONEDD/HQ and MATET
- Delay of construction of new laboratory and difficulties for timely rehabilitation of facility and hardware for CRL

## **5 . Conclusion**

Overall evaluation based on the Five Evaluation Criteria, Relevance and Effectiveness of the Project reached satisfactory level, and various positive impacts were observed. On the other hand, the efficiency of the Project is not very remarkable and Sustainability is still remained a challenge for the Algerian side. Thus, it can be said that the Project has mostly been able to fulfill its Purpose within the Project period, but further continuous efforts are indispensable for ensuring the sustainability of ONEDD/CRL. The Team identified that one of the largest constraints for efficient implementation of the Project is significant delay of the establishment of new Central Regional Laboratory (Alger) of ONEDD, that included not only the construction of lab-facilities but

also the staff allocation and organizational setup, that was committed by the Algerian side before the commencement of the Project (R/D). Construction of provisional laboratory cabin, limited recruitment of lab engineers, assignment of acting lab director were made in the meantime as alternative measures for securing the activities of the Project, but the delay of initial plan interfered with smooth implementation of the Project and eventually affected the sustainability. However, the Team highly evaluated remarkable elevation of environmental monitoring capacity of ONEDD, and technical C/Ps of CRL, particularly in terms of their technical capacities, ownership, and self-motivation, which were more or less deprived before the ONEDD-JICA technical cooperation since March 2004.

## **6 . Recommendations**

### **(1) Laboratory Analyses**

Further enhancement of the acquired analytical techniques and the strengthening of capacity of environmental monitoring by CRL, are needed in the course of implementation of actual environmental monitoring activities.

### **(2) Laboratory Coordination**

The coordination among analytical labs should be promoted in order to improve the integration and interpretation of monitoring data.

### **(3) Management**

Establishing appropriate laboratory management system within ONEDD left a room for improvement. More frequent communication between CRL and ONEDD/HQ is recommended. Periodical internal meetings and in-house seminar are necessary for effective management and information exchange.

### **(4) Dissemination**

Activities for diffusing monitoring and analytical techniques acquired by the CRL in the Project to other regional laboratories of ONEDD should be accelerated in order to establish a nation-wide monitoring network. Practical trainings by the engineers of CRL to other laboratories should be intensified in the future. And continuous supports and resource allocation to CRL by ONEDD/HQ and MATET are vital.

## **7 . Lessons Learned**

### **(1) Careful Planning of the Project Schedule**

It should take a flexible approach about revising the Project implementation schedule for technical transfer if delays of preparation of the lab facility and/or procurement of equipment are presumed. Capacities of suppliers of equipment and schedules for procurement of equipment should be carefully assessed at the designing stage of the Project.

### **(2) Importance of Capacity Assessment**

The level of technology to be transferred in the Project should be set based on the actual capacity of the C/Ps and surrounding organizational/institutional conditions. At the designing stage of the Project, partner country sometimes overestimates their own capacities, since they do not have clear images for the new technologies to be acquired in the Project. In addition, the partner country is too ambitious to acquire new knowledge in the short period of time. Thus, the capacity of C/Ps in the initial stage of the Project should be carefully assessed for successful implementation of the technology transfer.

## **8 . Follow-up Situation**

The Government of Algeria requested to the Government of Japan a technical cooperation project for capacity development of ONEDD in environmental de-pollution and remediation. The adoption of the request is now under consideration by reflecting the results of terminal evaluation.