

## 添 付 資 料

1. ミニッツ及び付属書 (英文、仏文)
2. ワークショップ資料集
3. 主要面会者リスト
4. 議事録
5. 機材リスト
6. PDM改訂後のプロジェクト概要

1. ミニッツ及び付属書 (英文、仏文)

Minutes of Meeting  
Between  
The Algerian Mid-Term Evaluation Team  
And  
The Japanese Mid-Term Evaluation Team  
On  
The Technical Cooperation Project for Capacity Development  
Of  
Environmental Monitoring in Algeria

The Japanese Mid-Term Evaluation Team (hereinafter referred to as 'the Japanese Team'), organized by Japan International Cooperation Agency (hereinafter referred to as 'JICA') and headed by Dr. Mitsuo Yoshida, visited Algeria from January 29 to February 13, for the purpose of conducting the joint mid-term evaluation on the Technical Cooperation Project for Capacity Development of Environmental Monitoring in Algeria (hereinafter referred to as 'the Project') on the basis of the Record of Discussions signed on September 5, 2005.

During its stay in Algeria, the Team had a series of discussions and exchanged views with the Algerian Mid-Term Evaluation Team (hereinafter referred to as 'the Algerian Team') headed by Mr. Bachir Slimani and Mr. Abdelkader Benhadjoudja.

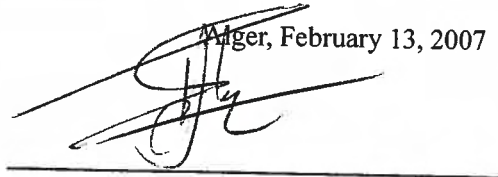
As a result of discussions, the Algerian Team and the Japanese Team mutually agreed upon the Joint Evaluation Report and Revised PDM / PO attached as annexes.

This Minutes of Meeting including annexes is prepared in two versions. The main version is written in English and the other version is written in French. In case of any divergence of interpretation, the English version shall prevail.

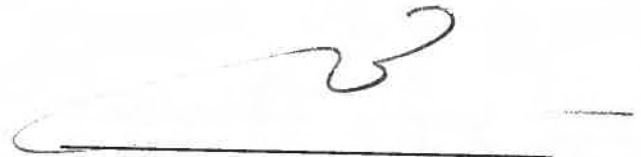
Alger, February 13, 2007



Dr. Mitsuo Yoshida  
Leader  
Japanese Mid-Term Evaluation Team,  
Senior Advisor,  
Japan International Cooperation Agency  
(JICA)



Mr. Bachir SLIMANI  
Director General  
National Observatory for Environment  
and Sustainable Development (ONEDD)  
Algeria



Mr. Abdelkader Benhadjoudja  
Chief of Minister's Cabinet,  
Ministry of Land Planning and  
Environment (MATE)  
The People's Democratic Republic  
of Algeria

- AnnexI Joint Evaluation Report
- AnnexII Revised PDM
- AnnexIII Revised PO
- AnnexIV List of Attendants

ANNEX 1

Joint Evaluation Report of Mid-Term Evaluation  
On  
The Technical Cooperation Project for Capacity Development  
Of  
Environmental Monitoring in Algeria

February 2007

National Observatory for Environment and Sustainable Development (ONEDD)  
and  
Japan International Cooperation Agency (JICA)

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The Technical Cooperation Project for Capacity Development  
of Environmental Monitoring  
in Algeria

Joint Evaluation Report of Mid-Term Evaluation

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Appendix 1 Performance Grid

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## 1. Introduction

### (1) Purpose

Mid-term evaluation is conducted at the mid-point of the Project in order to examine the achievements/outputs and process of the project, focusing on efficiency and relevance among the Five Evaluation Criteria<sup>1</sup>. Based upon the evaluation result, the original project plan, Project Design matrix (PDM) and Plan of Operation (PO), may be revised or the operation structure strengthened if necessary.

### (2) Joint Evaluation Team

The Joint Evaluation Members of the Mid-Term Evaluations are as follows:

#### 1) The Algerian team

Mr. Abdelkader BENHADJOUJJA	Team Leader	Chief Minister's Cabinet Ministry of Land Planning and Environment
Mr. Bachir SLIMANI	Member	Director General National Observatory for Environment and Sustainable Development (ONEDD)
Mr. Abderrahmane LALEG	Member	Assistant of Director General National Observatory for Environment and Sustainable Development (ONEDD)

#### 2) The Japanese team

Dr. Mitsuo Yoshida	Team Leader	Senior Advisor, Institute for International Cooperation, JICA
Ms. Izumi Tsuchihata	Member	Assistant Resident Representative, JICA France Office
Ms. Eriko Tamura	Member	Senior Program Officer, Environmental Management Team 2, Group 2, Global Environment Department, JICA
Mr. Terumi Mizuno	Member	Techno Chubu Company Ltd.

<sup>1</sup> Project evaluation method proposed by DAC (Development Assistance Committee of OECD)

## (3) Schedule

Date		JICA (Yoshida, Tsuchihata, Tamura)	Consultant(Mizuno)	Activities
January				
28	Sun		Departure from Japan	
29	Mon		Arrival at Alger Meeting with Ohi	
30	Tue		C/P interview	(1)Introduction of mid-term evaluation to Mr. Slimani, Mr. Laleg and other counterpart personnel listed in R/D, (2)Survey on the inputs related to the Project(assignment of counterparts (herein after C/P), equipment, allocation of budget),(3)Survey on the indicators described in PDM, (4)Sending questionnaires to other regional laboratories
31	Wed		C/P interview	(1)Group interviews for C/P,(2) Individual interviews for all technical counterparts
February				
1	Thu		Drafting of report	
2	Fri		Drafting of report	
3	Sat		C/P interview	same as the above
4	Sun	Departure from Japan	Laboratory inspection and survey on indicators	
5	Mon	Departure from France Internal meeting	Internal meeting of Japanese Evaluation Team	
6	Tue	9:00 EOJ, 10:00 MOFA, 11:00 MATE, 15:00 Mr. Shimizu, Ambassador		
7	Wed	14:30 JCC (Joint Coordination Committee)		(1)Introduction of mid-term evaluation(Dr. Yoshida), (2)Presentation on the progress of PO(Mr.Ohi), (3)Presentation on achievement of the indicators

			in PDM (Mr. Mizuno), (4)Discussion
8	Thu	Leave for France (Tsuchihata)	Drafting of report
9	Fri	Draft of report	
10	Sat	C/P interview(Mr. Benhadjoudja,Mr. Slimani, Mr.Laleg, Mr. Benagoudjil,Mr.Laleg)	
11	Sun	Workshop* JCC(Discussion on the report)	* (1)Outline of the Project(Mr. Laleg) (2)Outcomes of the project by CP (Field measurement & sampling, Laboratory analyses, Data analysis) (3)Hg report by Ohi, (4)Presentation by Dr. Yoshida
12	Mon	JCC(Confirmation on the report and the future plan)	
13	Tue	(1)Signing the Minutes of Meeting,(2) Planning of the TOR of short term experts for MATE,(3)12:00 Mr.Shimizu(EOJ) (4)Interviews to GTZ	
14	Wed	Reporting to the JICA France Office	

#### (4) Method

The methodology of the evaluation is Five Evaluation Criteria (Relevance, Effectiveness, Efficiency, Impact, and Sustainability) proposed in 1991 by the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) that JICA has adopted.

This evaluation is conducted in collaboration with evaluation team consisting both Algerian and Japanese sides according to an evaluation grid shown in Annex which includes verification of performance and implementation process, and five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability) prepared by the JICA Mission.

To gather information, the mission will make best use of insight/visions already existing in the relevant documents notably from technical cooperation report, progress report, working papers, and verify them through a well-prepared meetings / interviews, questionnaires to ONEDD staff members and JICA Expert Team (hereinafter described as JET).

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## 2. Outline of the Project

### (1) Background

The Ministry of Land Planning and Environment prepared the “Environment National Strategy” and the “National Environment Action Plan for Sustainable Development” under the process of preparing The “Report on the Environmental State and Future” in 2000. The “Environment National Strategy” identified the twelve challenges to achieve the following three objectives:

- to integrate the environmental viability into the programs of the socio-economic development of the country
- to achieve a sustainable growth, and reduce poverty
- to protect public health and citizens

The National Observatory of Environment and Sustainable Development, ONEDD, was established as a part of the “National Environment Action Plan for Sustainable Development” in 2002. The mission of ONEDD is to support the decision making of the environmental administration, and its activities include collection of 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 Harrash was reported as a result of field studies conducted by the JICA short-term experts dispatched from 2003 to 2005, ONEDD recognized that its capacity was not enough for implementing environmental monitoring.

The Government of Algeria requested to the Japanese government a technical cooperation project for capacity development of ONEDD in environmental monitoring, and the Record of Discussion on the Project was signed on September 5, 2005.

### (2) Project Summary

#### 1) Overall Goals

- 1 ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations. The Central Regional Laboratory (Alger) plays a leading role in national environmental monitoring network.
- 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.

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### 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 Knowledge and for the de-pollution and remediation are acquired

### 4) Implementing Agency

National Observatory for Environment and Sustainable Development  
(ONEDD)

### 3. Project Achievement

Project achievement of Project Purpose and the Outputs are summarized respectively as follows.

#### (1) Overall Goals

Narrative Summary	Planned		Summary of Activities
		Indicators	
Overall Goal			
1. ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations. The Central Regional Laboratory (Alger) plays a leading role in national environmental monitoring network	1.1 Realization of national monitoring system based on the National Environmental Strategy. 1.2 Establishment of National Environmental Database (SNIE) 1.3 Regional laboratories in Oran and Constantine carry out environmental monitoring utilizing the standard procedures employed in the Central Regional Laboratory (Alger) 1.4 The Central Regional Laboratory (Alger) develops the quality of the reference laboratory in Algeria.		
2. National environmental protection policy is promoted and counter-measures are recommended	2.1 Counter-measures are recommended concretely 2.2 Partnership among ministries related to environmental regulation are established		
3. Counter-measures to prevent environmental pollution in Oued El Harrach industrial areas is deployed	3. Decrees and public orders based on the measures against environmental polluters in the Oued El Harrach industrial areas are enforced.		

#### (2) Project Purpose

Narrative Summary	Indicators	Summary of Activities
Environmental monitoring capacity of the Central Regional Laboratory (Alger) is strengthened.	The Central Regional Laboratory (Alger) is able to response to the requisition about the environmental monitoring from various clients	The Central Regional Laboratory (Alger) responded to the requisition about the chemical analysis and measurements from 12 clients and two district environment departments in 2006.
	The Central Regional Laboratory (Alger) is able to publish comprehensive environmental report(s) on the Oued El Harrach pollution problems, which promotes appropriate counter-measures for environmental protection and remediation of the area.	The Central Regional Laboratory (Alger) carried out the sampling 6 times in Oued El Harrach in 2006; however the monitoring results have not been published.

	C/P is able to implement technical advice to ONEDD's other regional laboratories in Algeria.	C/P gave technical advice about the sampling and sample preservation to the clients. While the regional laboratories in Oran and Constantine have been already equipped with major monitoring equipment, they are inactive because of lack of technical capacity. Training needs for their laboratory staffs was high.
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### (3) Outputs

Planned		Summary of Activities	Performance <sup>2</sup>
1. Laboratory management to ensure a high-quality operation is in place	1.1 Organizational arrangement, mandate for staff and directional authority are clearly defined.	The laboratory director was appointed in January 2007. Organization of the laboratory and mandate for staff are under preparation.	-
	1.2 Meeting of laboratory members is organized regularly	Laboratory meetings are held an average of twice a month since August 2006. A weekly meeting was proposed by the newly appointed laboratory director in February 2007.	+
	1.3 Operation plan is prepared	No activity	-
	1.4 Operation is carried out based on the operation plan	No activity	-
2. Skills and knowledge in field survey and sampling management are acquired	2.1 C/P is able to perform field survey including sampling	C/P has been implementing the regular monitoring at 9 sites in the Project area since August 2006. Total 28 water and sediment samples were taken with the Algerian standard method. Total number of samples C/P had collected from the Project area was 338 in 2006.	+

<sup>2</sup> +: Performance is acceptable in accordance with the Plan

-: Performance is not acceptable in accordance with the Plan

<sup>3</sup> Before the commencement of the Project

	2.2 C/P is able to perform sample management (preparation, storing, labelling, etc.)	<table border="1"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of total samplings</td> <td>63</td> <td>338</td> </tr> </tbody> </table> <p>SOP for field survey and sampling is under preparation.</p>	Year	2005	2006	Number of total samplings	63	338	+
Year	2005	2006							
Number of total samplings	63	338							
3. Skills and knowledge in organic chemical analysis are acquired	3.1 C/P is able to perform organic chemical analysis of compounds specified in the Algerian standards	<p>C/P is able to measure COD and oil &amp; grease with the Algerian standard method instead of the previous simplified method. C/P also started measurement of oil &amp; grease based on DIN. Suspended substances were analyzed with the Algerian standard for the first time.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of organic parameters measured or analyzed with the Algerian standard</td> <td>0</td> <td>3</td> </tr> </tbody> </table>	Year	2005	2006	Number of organic parameters measured or analyzed with the Algerian standard	0	3	-
Year	2005	2006							
Number of organic parameters measured or analyzed with the Algerian standard	0	3							
	3.2 Analytical protocol is established.	<p>SOPs for suspended substances, COD, BOD, total organic carbon, oil &amp; grease, Kjeldahl nitrogen and alkyl mercury were prepared.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of SOPs for organic parameters</td> <td>0</td> <td>7</td> </tr> </tbody> </table>	Year	2005	2006	Number of SOPs for organic parameters	0	7	+
Year	2005	2006							
Number of SOPs for organic parameters	0	7							
	3.3 Accuracy of data obtained from the analysis maintains within the accepted range	<p>Introduction of the analytical data sheet decreased the mistakes in the data processing.</p>	-						
4. Skills and knowledge in inorganic chemical analysis are acquired	4.1 C/P is able to perform inorganic analysis of compounds specified in the Algerian standards	<p>C/P started analyzing total mercury in water and sediment with JIS in August 2006. C/P is able to analyze total phosphorus, phosphate and Cr(VI) with the Algerian standard method instead of the previous simplified method.</p>	+						

		<table border="1"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of inorganic parameters analyzed with the Algerian standard</td> <td>8</td> <td>12</td> </tr> </tbody> </table>	Year	2005	2006	Number of inorganic parameters analyzed with the Algerian standard	8	12	
Year	2005	2006							
Number of inorganic parameters analyzed with the Algerian standard	8	12							
	4.2 Analytical protocol established	is SOPs for Cd, Cr, Ni, Pb, Cu, Zn, total phosphorus, F and Cr(VI) were prepared.	+						
		<table border="1"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of SOPs for inorganic parameters</td> <td>0</td> <td>9</td> </tr> </tbody> </table>	Year	2005	2006	Number of SOPs for inorganic parameters	0	9	
Year	2005	2006							
Number of SOPs for inorganic parameters	0	9							
	4.3 Accuracy of data obtained from the analysis maintains within the accepted range	Accuracy of heavy metal analysis was improved by identifying the minimum limit of determination and the minimum limit of detection for Cd, Cr, Ni, Pb, Cu, Zn, Hg with an atomic absorption spectrophotometer, and obtaining the technique for reporting digits	+						
		<table border="1"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of the parameters with minimum limit of determination and the minimum limit of detection</td> <td>0</td> <td>7</td> </tr> </tbody> </table>	Year	2005	2006	Number of the parameters with minimum limit of determination and the minimum limit of detection	0	7	
Year	2005	2006							
Number of the parameters with minimum limit of determination and the minimum limit of detection	0	7							
5. Skills and knowledge in microbiological analysis are acquired	5.1 C/P is able to perform microbiological analysis specified in the Algerian standards	No activity	-						
	5.2 Analytical protocol established	No activity	-						
	5.3 Accuracy of data obtained from the analysis maintains within the accepted range	No activity	-						
6. Skills and knowledge in development and maintaining database are acquired	6.1 Architecture of the database for the Central Regional Laboratory (Alger) is designed	The data input format for 47 parameters of the regular monitoring results in the Project area was designed with spreadsheet software in July 2006.	-						
	6.2 The database is established	The regular monitoring results (700 data) in the Project area obtained in 2006 were inputted.	+						

		<table border="1"> <tr> <td>Year</td> <td>2005</td> <td>2006</td> </tr> <tr> <td>Number of the input data</td> <td>0</td> <td>700</td> </tr> </table>	Year	2005	2006	Number of the input data	0	700	
Year	2005	2006							
Number of the input data	0	700							
	6.3 Data collected from the analysis is stored in the database, and is available when requested.	The accumulated data can be easily accessed and processed.	+						
7. Skills and knowledge for environmental evaluation, analysis and recommendation utilizing the obtained data are acquired	<p>7.1 C/P is able to produce environmental reports based on the monitoring results (results of survey analysis and interpretation)</p> <p>7.2 C/P is able to present the analytical results base on monitoring results at seminars and meetings, etc.</p>	<p>Water pollution in the Project site was reported based on the first year's regular environmental monitoring. However individual working paper on analytical results have not been prepared nor presented in seminar or workshop.</p> <p>C/P made presentation about the water pollution in the Project site at the 3rd seminar in February 2007 for the first time.</p>	-						
8. Knowledge and experience for the de-pollution and remediation are acquired.	C/P is able to present the information for de-pollution and remediation of the Project area at seminars and meetings, etc.	No activity	-						

#### 4. Evaluation Results

A summary of the Mid-Term Evaluation on the basis of the Process and Five Criteria is as follows:

##### (1) Implementation Process

Implementation process is partly smooth.

There was insufficient communication between the headquarters of ONEDD and the Laboratory. The difficulty in communication has been observed between C/P and JET during the absent period of JET, which left some technical problems unsolved.

Delay of the appointment of the Laboratory director caused by the postponement of new laboratory's construction has prevented achieving the Output 1 from producing. The JICA expert in charge of organic mercury analysis had to hold training without using the previously equipped gas chromatograph because of its malfunction.

## (2) Relevance

Relevance of the Project is high.

### 1) Relevance to the national policy

The Ministry of Land Planning and Environment enacted twelve laws during past five years and the national environmental strategy was reviewed every two years based on the achievement of the policy. Priorities of the establishment of environment monitoring network and de-pollution of the Oued El Harrash are very high in the “National Action Program for Sustainable Development”. Therefore the project purpose and the overall goals of the Project meet the national policy of Algeria.

### 2) Relevance to interest of beneficiaries

ONEDD is a government agency dedicating to the environmental monitoring in Algeria. The most important mission for ONEDD is to report the state of environment in order to contribute the to the Ministry of Land Planning and Environment as a policy maker’s decision support tool. The Laboratory is also expected to be a reference laboratory on environmental monitoring in Algeria. The purpose of the Project directly matches the needs of the beneficiaries mentioned above.

### 3) Relevance to the Japan’s ODA (Official Development Assistance) policy

JICA specifies “environmental protection” as one of the most important issues in providing assistance to Algeria. Japan has advanced technologies in environmental chemical analysis and pollution control as well as a lot of experiences in developing environmental monitoring network, which shows high relevancy of technical cooperation by Japan. In these aspects the Project is in line with the Japan’s ODA policy.

## (3) Effectiveness

Effectiveness of the Project is relatively high.

Considering the progress of the project and the inputs from both Japan and Algeria, the project purpose is likely to be achieved by the end of the project period if the Algerian side makes all possible efforts for achieving the outputs based on the Plan of Operation. Both side efforts during the Project implementation have enabled the Laboratory to implement a regular environmental monitoring in the Project area by itself. Procedures for field measurement and sampling, and some of the chemical analyses were standardized by preparing standard operation procedures (SOP) based on the Algerian standard methods. The standardization has remarkably contributed to

enhance the reliability of monitoring data. The requests of chemical analysis and the effluent monitoring from industries and district environments department have been increasing after the commencement of the Project.

#### (4) Efficiencies

Efficiency is considered to be intermediate.

The number of JICA experts was appropriate and they were qualified enough to be perform the activities. Timing of dispatch was inappropriate because the JET's absent period was longer than that of on site technical transfer. Though the accessories of gas chromatograph were provided by JICA, the instrument has been left without using because of the malfunction. Other equipment has been introduced in accordance with the progress of the Project. Two trainings in Japan provided C/P to learn Japanese environmental administration and de-pollution & remediation technologies as well as to improve technical skills in chemical analyses. The result of capacity assessment indicated that most of the C/P's capacities have been enhanced after the commencement of the Project. JET spent extra trainings for some C/Ps who have less experience in chemical analysis. Delay in appointment of a laboratory director prevented to achieve the Output 1.

#### (5) Impact

Positive impacts were found.

The Laboratory contracted an effluent monitoring with a pharmaceutical company running near the Oued El Harrash and more than 10 industries have requested the Laboratory to analyze mainly heavy metals in their effluent and sediment. The Austrian-based wastewater treatment company changed contracted the laboratory for analyzing heavy metals from the laboratory in Austria to the Laboratory after the confirmation of the reliability of analytical data. Several district environment departments also requested chemical analyses of effluent to the Laboratory. The number of request from outside for chemical analysis has been increasing. Other two regional laboratories in Oran and Constantine requested to the Laboratory a technical training for their laboratory staffs.

#### (6) Sustainability

Sustainability is predicted to be high.

##### 1) Institutional sustainability



The Algerian decree on classified establishments (Decree No. 88-149) specifies for all industries to conduct monitoring of waste discharged in the environment, and the Algerian decree on environment inspector (Decree No. 98-227) specifies the competence of local government for inspecting the pollution control and monitoring of the industries. Under this institutional framework, several district environment departments requested effluent and sediment analysis to the Laboratory. Further collaboration of ONEDD with district environment departments is expected to facilitate more efficient legal enforcement.

## 2) Organizational sustainability

Each regional laboratory has to make its own annual working plan, and they have to submit the report of achievement by the end of fiscal year. The Laboratory is expected to be involved into this management system of ONEDD with the newly appointed Laboratory director.

## 3) Financial sustainability

The revenue of the Laboratories from the effluent monitoring and chemical analysis was about DA 2.5 million in 2006. A part of the revenue was used for the Laboratory activities. Gradual increase of the revenue would be expected if the Laboratory will become to analyze more parameters.

## 5. Conclusions

A series of technical cooperation activities in the Project during past 15 months enhanced the capacity of ONEDD Alger Laboratory in environmental monitoring. Based on the capacity acquired, the Laboratory has analyzed approximately 2,700 parameters of 450 water and sediment samples by the end of January 2007 using atomic adsorption spectrometer, spectrophotometer, and other physico-chemical devices, which mainly correspond to the Outputs 2 and 4 defined by the PDM. The Laboratory has now had a regular monitoring plan for water quality of Oued El Harrach. The technical cooperation in the Outputs 2 and 4 defined by the PDM, can be evaluated very successful in the first half period of the project term.

However technical cooperation activities about organic chemical analyses planned in the Activity 3 are behind schedule due to malfunctioned gas chromatography (GC) instrument equipped by Algerian side. The delay shall be recovered after repairing the GC and equipping new GC-MS that will be installed to new laboratory by JICA in March 2007.

Other three components of project activities, establishment of lab database (Output 6), enhancing interpretation skill (Output 7), and acquiring the knowledge on de-pollution technologies (Output 8), are now in the beginning stage of technical cooperation, which are main target subjects in the second half period of the project term. It cannot be confirmed now whether the component on microbiological analysis (Output 5) is involved into the Project, which shall be identified from an availability of shielded room in new laboratory building based on the agreement of R/D.

Eleven laboratory members, the counterparts to the JET, were initially allocated for smooth implementation of the Project by the ONEDD authority, while two members have left from the Laboratory. Establishing an institutional setup of the Laboratory proposed in the Output 1 of PDM is significantly delayed because of a lack of authorized laboratory management system. Insufficient human resource and delay of establishing a institutional setup of the Laboratory have become serious weakness for implementing the Project.

The relevance of the Project has been confirmed again because of high priority of environmental monitoring by the Algerian government and steady needs on environmental analysis and self monitoring from industries. The efficiency of the technical cooperation activities especially including technology transfer program in the Project has been proved in comparison with the other ONEDD regional laboratories where the lab performances are inactive because of insufficient technical capacity. The effectiveness of the Project is secured if eight Outputs are achieved not only technical

aspect but in administration/management aspect. Positive impacts of the Project have already appeared in the mid-point of the project term, e.g. increase of consignment chemical analysis from external parties such as district environment department and private firms, which is expected to secure the sustainability of the Laboratory.

At mid-point of the Project, the performance for achieving Project Purpose defined by the PDM shows fairly appropriate progress in technical side, in particular field monitoring/sampling (Output 2) and inorganic chemical analysis (Output 4), but rather inappropriate in administrative/management side (Output 1). Thus the performance of the project is almost in line with the plan only in technical side. The Project Purpose, as evaluated by the original indicators, is not likely to be achieved by the end of the project term unless appropriate number of laboratory staff, laboratory management and proposed facilities are provided by the Algerian side.

## 6. Recommendations

- (1) It is recommended to establish a new laboratory facility functionally according to the plan given by Algerian side. Strict technical management of the new laboratory is recommended. Contamination shall be more carefully prevented especially in the trace element and microbiological analyses. Toxic wastes generated from the Laboratory shall be managed properly. Laboratory safety measures shall be taken. Laboratory management guideline shall be prepared (Output 1).
- (2) It is recommended to equip at least one vehicle for smooth operation of field measurement and sampling by ONEDD.
- (3) The laboratory administrative management system shall be established soon under the leadership of newly assigned acting director of the Laboratory. It is recommended to increase laboratory member for enhance to the activities of the Project in the second half of the Project. It is recommended to prepare a job description for each laboratory member and clarify their role and responsibility (Output 1).
- (4) Technology transfer from JET to C/P on organic chemical analysis, in particular the methods using GC and GC-MS should be strengthened (Output 3).
- (5) The laboratory database (Output 6) should incorporate not only the regular monitoring data but spot sample analytical data with their locality information (latitude, longitude).
- (6) Dispatching schedule of JICA experts should be planned in the condition of minimizing the interval of absence of JICA Expert Team in order to secure efficient technical cooperation.

(7) The Laboratory is recommended to develop a partnership with the researchers and specialists in Algerian institutes/universities for formulating scientific/technical collaboration.

(8) In the first half period of the project term was the stage of training and technology transfer, while the second half period shall be a collaboration stage among lab members under the assistance of the JICA Expert Team. The capacities on data management (Output 6), quality control and interpretation (Output 7) will be acquired and improved through such collaborative works.

Grid for Mid-term Evaluation (February 2007)  
ONEDD-JICA Project for Capacity Development of Environmental Monitoring in Algeria

Performance		Planned (PDM attached to R/D signed on April 2005)	Summary of Activities	Performance
Narrative Summary		Indicators		
Overall Goal				
1. ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations. The Central Regional Laboratory (Alger) plays a leading role in national environmental monitoring network		<p>1.1 Realization of national monitoring system based on the National Environmental Strategy.</p> <p>1.2 Establishment of National Environmental Database (SNIE)</p> <p>1.3 Regional laboratories in Oran and Constantine carry out environmental monitoring utilizing the standard procedures employed in the Central Regional Laboratory (Alger)</p> <p>1.4 The Central Regional Laboratory (Alger) develops the quality of the reference laboratory in Algeria.</p>		
2. National environmental protection policy is promoted and counter-measures are recommended		<p>2.1 Counter-measures are recommended concretely</p> <p>2.2 Partnership among ministries related to environmental regulation are established</p>		
3. Counter-measures to prevent environmental pollution in Oued El Harrach industrial areas is deployed		<p>2. Decrees and public orders based on the measures against environmental polluters in the Oued El Harrach industrial areas are enforced.</p>		
Project Purpose Environmental monitoring capacity of the Central Regional Laboratory (Alger) is strengthened.		<p>1. The Central Regional Laboratory (Alger) is able to response to the requisition about the environmental monitoring from various</p>	<p>1. The Central Regional Laboratory (Alger) responded to the requisition about the chemical analysis and measurements from 12 clients and two district environment departments in 2006.</p>	

※ +: Performance is acceptable in accordance with the Plan  
※ -: Performance is not acceptable in accordance with the Plan

	<p>clients</p> <p>2. The Central Regional Laboratory (Alger) is able to publish comprehensive environmental report(s) on the Oued El Harrach pollution problems, which promotes appropriate counter-measures for environmental protection and remediation of the area.</p> <p>3. C/P is able to implement technical advice to ONEDD's other regional laboratories in Algeria.</p>	<p>2. The Central Regional Laboratory (Alger) carried out the sampling 6 times in Oued El Harrach in 2006, however the monitoring results have not been published.</p> <p>3.1. C/P gave technical advice about the sampling and sample preservations to the clients.</p> <p>3.2. While the regional laboratories in Oran and Constantine have been already equipped with major monitoring equipment, they are inactive because of lack of technical capacity. Training needs for their laboratory staffs was high.</p>							
<p>Output</p> <p>1. Laboratory management to ensure a high-quality operation is in place</p>	<p>1.1. Organizational arrangement, mandate for staff and directional authority are clearly defined.</p> <p>1.2. Meeting of laboratory members is organized regularly</p> <p>1.3. Operation plan is prepared</p> <p>1.4. Operation is carried out based on the operation plan</p>	<p>1.1. The laboratory director was appointed in January 2007. Organization of the laboratory and mandate for staff are under preparation.</p> <p>1.2. Laboratory meetings are held an average of twice a month since August 2006. A weekly meeting was proposed by the newly appointed laboratory director in February 2007.</p> <table border="1" data-bbox="1029 250 1121 965"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of regular laboratory meetings</td> <td>0</td> <td>21</td> </tr> </tbody> </table> <p>No activity</p> <p>No activity</p>	Year	2005	2006	Number of regular laboratory meetings	0	21	<p>-</p> <p>+</p> <p>-</p> <p>-</p>
Year	2005	2006							
Number of regular laboratory meetings	0	21							
<p>2. Skills and knowledge in field survey and sampling management are acquired</p>	<p>2.1. C/P is able to perform field survey including sampling</p>	<p>2.1. C/P has been implementing the regular monitoring at 9 sites in the Project area since August 2006. Total 28 water and sediment samples were taken with the Algerian standard method. Total number of samples C/P took in the Project area was 338 in 2006.</p>	<p>+</p>						

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	<p>2.2. C/P is able to perform sample management (preparation, storing, labelling, etc.)</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of sampling times</td> <td>0</td> <td>14</td> </tr> <tr> <td>Number of samples taken with the Algerian standard</td> <td>0</td> <td>28</td> </tr> </tbody> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of sampling times</td> <td>63</td> <td>338</td> </tr> </tbody> </table> <p>2.2. SOP for field survey and sampling are under preparation.</p>	Year	2005	2006	Number of sampling times	0	14	Number of samples taken with the Algerian standard	0	28	Year	2005	2006	Number of sampling times	63	338
Year	2005	2006															
Number of sampling times	0	14															
Number of samples taken with the Algerian standard	0	28															
Year	2005	2006															
Number of sampling times	63	338															
<p>3. Skills and knowledge in organic chemical analysis are acquired</p>	<p>3.1. C/P is able to perform organic chemical analysis of compounds specified in the Algerian standards</p> <p>3.2. Analytical protocol is established.</p> <p>3.3. Accuracy of data obtained from the analysis maintains within the accepted range</p>	<p>3.1. C/P is able to measure COD and oil &amp; grease with the Algerian standard method instead of the previous simplified method. C/P also started measurements of oil &amp; grease based on DIN. Suspended substances were analyzed with the Algerian standard for the first time.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of organic parameters measured or analyzed with the Algerian standard</td> <td>0</td> <td>3</td> </tr> </tbody> </table> <p>3.2. SOPs for suspended substances, COD, BOD, total organic carbon, oil &amp; grease, Kjeldahl nitrogen and alkyl mercury were prepared.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of SOPs for organic parameters</td> <td>0</td> <td>7</td> </tr> </tbody> </table> <p>3.3. Introduction of the analytical data sheet decreased the mistakes in the data processing.</p>	Year	2005	2006	Number of organic parameters measured or analyzed with the Algerian standard	0	3	Year	2005	2006	Number of SOPs for organic parameters	0	7			
Year	2005	2006															
Number of organic parameters measured or analyzed with the Algerian standard	0	3															
Year	2005	2006															
Number of SOPs for organic parameters	0	7															

<p>4. Skills and knowledge in inorganic chemical analysis are acquired</p>	<p>4.1. C/P is able to perform inorganic analysis of compounds specified in the Algerian standards</p> <p>4.2. Analytical protocol is established</p> <p>4.3. Accuracy of data obtained from the analysis maintains within the accepted range</p>	<p>4.1. C/P started analyzing total mercury in water and sediment with JIS in August 2006. C/P is able to analyze total phosphorus, phosphate and Cr(VI) with the Algerian standard method instead of the previous simplified method.</p> <table border="1" data-bbox="454 246 582 963"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of inorganic parameters analyzed with the Algerian standard</td> <td>8</td> <td>12</td> </tr> </tbody> </table> <p>4.2. SOPs for Cd, Cr, Ni, Pb, Cu, Zn, total phosphorus, F and Cr(VI) were prepared.</p> <table border="1" data-bbox="726 246 821 963"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of SOPs for inorganic parameters</td> <td>0</td> <td>9</td> </tr> </tbody> </table> <p>4.3. Accuracy of heavy metal analysis was improved by identifying the minimum limit of determination and the minimum limit of detection for Cd, Cr, Ni, Pb, Cu, Zn, Hg with an atomic absorption spectrophotometer, and obtaining the technique for reporting digits</p> <table border="1" data-bbox="1053 246 1204 963"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of the parameters with minimum limit of determination and the minimum limit of detection</td> <td>0</td> <td>7</td> </tr> </tbody> </table>	Year	2005	2006	Number of inorganic parameters analyzed with the Algerian standard	8	12	Year	2005	2006	Number of SOPs for inorganic parameters	0	9	Year	2005	2006	Number of the parameters with minimum limit of determination and the minimum limit of detection	0	7
Year	2005	2006																		
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Number of SOPs for inorganic parameters	0	9																		
Year	2005	2006																		
Number of the parameters with minimum limit of determination and the minimum limit of detection	0	7																		

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5. Skills and knowledge in microbiological analysis are acquired	<p>5.1. C/P is able to perform microbiological analysis specified in the Algerian standards</p> <p>5.2. Analytical protocol is established</p> <p>5.3. Accuracy of data obtained from the analysis maintains within the accepted range</p>	<p>No activity</p> <p>No activity</p> <p>No activity</p>	-						
6. Skills and knowledge in development and maintaining database are acquired	<p>6.1. Architecture of the database for the Central Regional Laboratory (Alger) is designed</p> <p>6.2. The database is established</p> <p>6.3. Data collected from the analysis is stored in the database, and is available when requested.</p>	<p>6.1. The data input format for 47 parameters of the regular monitoring results in the Project area was designed with spreadsheet software in July 2006.</p> <p>6.2. The regular monitoring results (700 data) in the Project area obtained in 2006 were inputted.</p> <table border="1" data-bbox="635 264 703 976"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Number of the input data</td> <td>0</td> <td>700</td> </tr> </tbody> </table> <p>6.3. The accumulated data can be easily accessed and processed.</p>	Year	2005	2006	Number of the input data	0	700	- +
Year	2005	2006							
Number of the input data	0	700							
7. Skills and knowledge for environmental evaluation, analysis and recommendation utilizing the obtained data are acquired	<p>7.1. C/P is able to produce environmental reports based on the monitoring results (results of survey analysis and interpretation)</p> <p>7.2. C/P is able to present the analytical results base on monitoring results at seminars and meetings, etc.</p>	<p>7.1. Water pollution in the Project site was reported based on the first year's regular environmental monitoring. However individual working paper on analytical results have not been prepared nor presented in a seminar or a workshop.</p> <p>7.2. C/P made presentation about the water pollution in the Project site at the 3rd seminar in February 2007 for the first time.</p>	- -						
8. Knowledge and experience for the de-pollution and remediation are acquired.	8. C/P is able to present the information for de-pollution and remediation of the Project area at seminars and meetings, etc.	No activity	-						

	Summary of Activities
<p style="text-align: center;">Planned (PDM attached to R/D signed on April 2005)</p> <p>Activities! : [Laboratory management to ensure a high-quality operation is in place]</p> <p>1.1 Nominate the members of Project Steering Committee.</p> <p>1.2 Define organization and management.</p> <p>1.3 Develop operation plan.</p> <p>1.4 Organize laboratory meeting.</p> <p>1.5 Monitor the implementation based on the operation plan.</p> <p>1.6 Manage chemicals and wastes.</p> <p>1.7 Evaluate the result of implementation based on the operation plan.</p> <p>1.8 Feedback the monitoring results to the Project Steering Committee.</p> <p>1.9 Carry out maintenance of laboratory facility regularly.</p>	<p>1.1 Members of Joint Coordination Committee were nominated based on the R/D.</p> <p>1.2 Organization of the laboratory and job assignment and responsibilities of the laboratory staff were not defined.</p> <p>1.3 Any operation plan has not been developed.</p> <p>1.4 Laboratory meetings have been held an average twice a month by the initiative of C/P. A work plan and results of the analysis were discussed in the meetings.</p> <p>1.5 Implementation has not been monitored based on an operation plan.</p> <p>1.6.1 Chemical reagents in the storage house were stored in order and stock control was well managed.</p> <p>1.6.2 Acid and alkali solutions without containing toxic substances were discharged after neutralized and other liquid wastes are kept in different containers by contents.</p> <p>1.7 The laboratory was operated without any plan.</p> <p>1.8 JCC was held three times. The capacity development plan for the 1<sup>st</sup> year was discussed and agreed at the 1<sup>st</sup> JCC held in December 2005. The first year's activities and capacity development plan for the 2<sup>nd</sup> year were discussed and agreed at the 2<sup>nd</sup> JCC held in June 2006. The Project monitoring results were regularly reported and discussed at the Project administrative level.</p> <p>1.9 Field measurement equipment (pH meter, electro-conductivity meter and DO meter) were correctly calibrated before sampling. Operation and maintenance training of the atomic absorption spectrophotometer, the spectrophotometer and the gas chromatograph was implemented. Maintenance record has not been taken.</p>

<p>Activity 2: [Skills and knowledge in field survey and sampling management are acquired]</p> <p>2.1 Assess existing capacity of field survey and sampling management.</p> <p>2.2 Identify training needs.</p> <p>2.3 Procure and install equipment and material.</p> <p>2.4 Implement training in field survey and sampling management (water, soil and sediment).</p> <p>2.5 Implement training in ground water sampling.</p> <p>2.6 Collect the samples from Project area.</p>	<p>2.1.1 Knowledge and experiences of C/P were evaluated by the interview at the beginning of the Project.</p> <p>2.1.2 Technical skill for the field survey and water sampling was evaluated by observing the field work of C/P.</p> <p>2.1.3 Availability of the sampling equipment in the laboratory was assessed.</p> <p>2.2.1 Various level of training were identifies. However basic trainings in manipulating the sampling and field measurement equipment were implemented to meet the request of C/P participated in the training by their request.</p> <p>2.3.1 Water samplers (stainless bucket, Van-Dom type), sediment sampler (Ekman-barge grab), soil sampler (manual type) water level gauge, water current meter, groundwater sampler and two refrigerators were procured and installed.</p> <p>2.4.1 A lecture on a planning of field survey and sampling was given for 8 C/Ps. Training in water and sediment samplings with the newly procured equipment was implemented for 8 C/P at 6 sites after the demonstration by JET.</p> <p>2.4.2 Training in preparation of SOP was implemented for the C/P in charge of field survey and sampling, but, the SOP has not been completed yet.</p> <p>2.4.3 Training in soil sampling has not been implemented.</p> <p>2.5 A sampling well for ground water monitoring has not been selected.</p> <p>2.6.1 Nine sites were selected as a regular monitoring point among the 12 sites, where the JICA short term expert of JICA selected in 2005. Water and sediment samples were taken at 3 sites in each sampling.</p> <p>2.6.2 Sampling was implemented 6 times, March, July, August, September, November and December in 2006. Lack of a vehicle made it difficult for the laboratory to conduct a regular sampling.</p> <p>2.6.3 Spot samplings were taken in cooperation with industry and district environment department.</p>
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<p>2.7 Develop manual for the analysis .</p> <p>2.8 Prepare working papers survey and sampling results.</p> <p>2.9 Monitor and evaluate the training.</p>	<p>2.7.1 A check list and a field log and record were introduced.</p> <p>2.7.2 The SOP for field survey and sampling was under preparation.</p> <p>2.8.1 Two working papers of field and sampling were prepared in July 2006</p> <p>2.9 Trainings have not been monitored.</p>
<p>Activity 3: [ Skills and knowledge in organic analysis are acquired]</p> <p>3.1 Assess existing capacity of organic analysis.</p> <p>3.2 Identify training needs</p> <p>3.3 Procure and install equipment and material</p> <p>3.4 Implement training in analyzing organic metals (methyl mercury etc.).</p>	<p>3.1.1 Knowledge and experiences of all C/Ps in organic chemical analysis were evaluated by the interview at the beginning of the Project.</p> <p>3.1.2 Availability of the equipment and reagents in the laboratory was assessed and it was found that new equipment and reagents were necessary for analyzing Kjeldahl nitrogen, phenol, organochlorine compounds and total hydrocarbons which were involved in the effluent standard.</p> <p>3.2 Increase in the basic knowledge about chemical analysis was necessary for all C/P. Priority was put on the analysis of organic mercury and organic parameters (COD, SS, Oil &amp; grease) in the wastewater standard.</p> <p>3.3.1 Attachments for the gas chromatograph, chemical reagents and glassware required for alkyl mercury analysis, oil content measurement apparatus were procured and installed.</p> <p>3.3.2 TOC meter, FTIR, GC/MS, ED-XRF, Kjeldahl distilling assembly, gas scrubber, water purification filter, pH meter, DO meter, DO bottle, chromatato-column for hydrocarbon, water bath, water distiller, rotary evaporator, oven, ultrasonic bath, centrifuge, shaker, distillation apparatus, desiccators were procured and some of them were delivered.</p> <p>3.4.1 Whole process of the organic mercury analysis was lectured. Training in the pre-treatment and extraction process required for alkyl mercury analysis in water, biota and sediment was implemented for 3 C/Ps</p> <p>3.4.2 Training in manipulation of the gas chromatograph was implemented for 3 C/Ps.</p> <p>3.4.3 Alkyl mercury has not been analyzed because of the interface problem between the workstation and the gas chromatograph, and contamination of the detector.</p>

<p>3.5 Implement training in analyzing total organic carbon.</p>	<p>3.5.1 Trainings in measurement of COD, suspended substances in water samples were implemented for 3 C/Ps.  3.5.2 A lecture on a basic organic and inorganic chemical analysis was given.  3.5.3 Training in total organic carbon analysis has not been implemented because of a lack of equipment.</p>
<p>3.6 Implement training in analyzing oil &amp; grease.</p>	<p>3.6.1 Training in oil &amp; grease analysis with the DIN, n-hexane extraction method, was implemented for 3 C/Ps.</p>
<p>3.7 Implement training in analyzing hydro carbons, BTX, and aromatic hydro carbons</p>	<p>3.7 Training in analyzing hydro carbons, BTX, and aromatic hydro carbons has not been implemented because of a lack of equipment.</p>
<p>3.8 Implement training in analyzing polychlorinated biphenyls (PCBs), pesticides, and halogenated organics.</p>	<p>3.8 Training in analyzing polychlorinated biphenyls (PCBs), pesticides, and halogenated organics has not been implemented because of a lack of equipment.</p>
<p>3.9 Implement training in analyzing non-volatile organics.</p>	<p>3.9 Training in analyzing non-volatile organics has not been implemented because of a lack of equipment.</p>
<p>3.10 Analyze the samples of the Project area.</p>	<p>3.10 Three parameters (COD, suspended substances, oil &amp; grease) in the 18 water samples and 18 sediment samples taken from the Project area were analyzed.</p>
<p>3.11 Develop manual for the analysis.</p>	<p>3.11 Trainings in preparation of SOPs for alkyl mercury, COD, BOD, hydrocarbons, suspended substances, oil &amp; grease, Kjeldahl nitrogen analysis were implemented.</p>
<p>3.12 Prepare working papers on the results of organic chemical analysis.</p>	<p>3.12 10 working papers of procedures and analysis of the organic parameters (Alkyl-mercury, COD, suspended substances, oil &amp; grease) were prepared.</p>
<p>3.13 Monitor and evaluate the training.</p>	<p>3.13 Trainings have not been monitored.</p>
<p>4.1 Assess existing capacity of inorganic analysis.</p>	<p>Activity 4: [Skills and knowledge in inorganic analysis are acquired]  4.1.1 Knowledge and experiences of all C/P in inorganic chemical analysis were evaluated by the interview at the beginning of the Project.  4.1.2 Availability of the equipment and reagents in the laboratory was assessed and it was found that equipment and reagents were necessary for analyzing CN, F. It was also found that N<sub>2</sub>O gas was necessary for analysis of Al with the atomic absorption spectrophotometer.</p>

<p>4.2 Identify training needs.</p> <p>4.3 Procure and install equipment and material.</p> <p>4.4 Implement training in analyzing heavy metals and toxic elements</p> <p>4.5 Implement training in analyzing ionic compounds and inorganic substances.</p> <p>4.6 Analyze the samples from the Project area.</p> <p>4.7 Develop manual for the analysis</p> <p>4.8 Prepare working papers on the result of inorganic chemical analysis.</p> <p>4.9 Monitor and evaluate the training</p> <p>Activity 5: [Skills and knowledge in microbiological analysis are acquired]</p> <p>5.1 Assess existing capacity of microbiological analysis.</p> <p>5.2 Identify training needs.</p>	<p>4.2.1 Training needs were identified. Priority was put on the logical thinking required for the trace element analysis and obtaining lowest determination limits and detection limits for the analysis of heavy metals.</p> <p>4.2.2 Increase in the basic knowledge about chemical analysis was necessary for the C/P in charge of total phosphorus analysis.</p> <p>4.3.1 A high temperature flame burner head for the atomic absorption, spectrophotometer was procured and install, but, nitrous gas was not supplied.</p> <p>4.3.2 Distillation apparatus for CN and F analysis, micropipette, muffle furnace, mantle heater, pH meter, DO meter, EC meter were procured and delivered.</p> <p>4.4 Trainings in analyzing Cd, Cr, Ni, Pb, Cu, Zn, Hg with the atomic absorption spectrophotometer and analyzing Cr(VI) with the spectrophotometer were implemented.</p> <p>4.5 Trainings in analyzing total phosphorus and phosphate were implemented. Trainings in analyzing CN and F have not been implemented because of a lack of equipment.</p> <p>4.6 Heavy metals, total phosphorus and phosphate in 18 water and 18 sediment samples taken in the Project area were analyzed.</p> <p>4.7 Trainings in preparation of SOP for heavy metal analysis, total phosphorus, F, Cr(VI) were implemented.</p> <p>4.8 Three working papers on analyzing heavy metals and phosphate were prepared.</p> <p>4.9 Training have not been monitored.</p>
<p>5.1.1 Knowledge and experiences of all C/P in microbiological analysis were evaluated by the interview at the beginning of the Project.</p> <p>5.1.2 Availability of the equipment and reagents in the laboratory was assessed.</p> <p>5.2 Training needs have not been because of the delay in new laboratory and no counterpart assigned.</p>	

5.3	Procure and install equipment and material.	5.3	Equipment has not been procured.
5.4	Implement training in microbiological analysis.	5.4	Training in microbiological analysis has not been implemented because of the laboratory was not appropriate for microbiological analysis.
5.5	Analyze the samples from the Project area.	5.5	Microbiological analysis of the samples taken from the Project area has not been implemented.
5.6	Develop manual for the analysis.	5.6	A manual for microbiological analysis has not been prepared.
5.7	Prepare working papers on the results of microbiological analysis.	5.7	A working paper of microbiological analysis has not been prepared.
5.8	Monitor and evaluate the training.	5.8	Training in microbiological analysis has not been monitored.
<p>Activity 6: [ Skills and knowledge in development and maintaining database are acquired ]</p>			
6.1	Define specifications of the database.	6.1	Specification of the database was developed with Microsoft excel for Windows XP.
6.2	Develop a database.	6.2	Results of regular monitoring have been accumulated in the database.
6.3	Implement user training for the database.	6.3.1	A data input form was prepared for the regular monitoring in the Project area.
		6.3.2	Workshop on and the environmental monitoring program with the aim of developing laboratory database was held in July 2005 with the participation of six laboratory staffs in the eastern and western regional laboratories.
6.4	Monitoring and evaluation of the training is carried out.	6.4	The training has not been monitored.
<p>Activity 7: [ Skills and knowledge for environmental evaluation, analysis and recommendation utilizing the obtained data acquired ]</p>			
7.1	Develop environmental survey plan of El Harrash river.	7.1	The environmental survey plan of the Project area was developed in January 2006.
7.2	Coordinate with the district environment department to inspect the suspected pollutants as necessary.	7.2	A couple of coordination with the district environment department to inspect the suspected pollutants was implemented.
7.3	Analyze and evaluate the data.	7.3	Training in data interpretation was implemented by using the results of monitoring and the results of the industrial effluent analysis.

<p>7.4 Develop inventory of pollution of El Harrash river basin.</p> <p>7.5 Discuss and interpret the results of data analysis.</p> <p>7.6 Prepare the comprehensive environmental report(s) on the Oued El Harrach pollution problems.</p> <p>7.7 Prepare other technical reports related to Activities.</p> <p>7.8 Evaluate the report(s).</p> <p>7.9 Organize and participate workshops and seminar.</p> <p>7.10 Publish annuals and reports.</p>	<p>7.4 Inventory of pollution in the Project area has not been developed.</p> <p>7.5 Trainings in interpretation of analyzed data were implemented by using the result of monitoring results and the results of the industrial effluent analysis.</p> <p>7.6.1 A comprehensive environmental report(s) on the Oued El Harrach pollution problems has not been prepared.</p> <p>7.7 Any technical report related to the activities has not been prepared.</p> <p>7.8 Any technical report related to the activities has not been prepared.</p> <p>7.9 Workshops and seminars have not been organized.</p> <p>7.10 An annual report has not been published.</p>
<p>Activity 8: Knowledge and for the de-pollution and remediation are acquired</p> <p>8.1 Introduce about the experience on de-pollution and remediation</p> <p>8.2 Present the recommendations for de-pollution of the Project area</p> <p>8.3 Disseminate the knowledge for de-pollution and remediation</p>	<p>8.1 The experience on de-pollution and remediation has not been introduced.</p> <p>8.2 Recommendation for de-pollution of the Project area has not been given.</p> <p>8.3 The knowledge for de-pollution and remediation has not been disseminated.</p>

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Grid for Mid-term Evaluation (February 2007)  
ONEDD-JICA Project for Capacity Development of Environmental Monitoring in Algeria

## Process evaluation

Evaluation Items	Evaluation Questions	Criteria and Method for Judgement	Findings	Data Collection
1. Performance	1.1 Have Project inputs from ONEDD and Japan been implemented as planned?	Comparison of plan and actual situation of the amount and timing of input	No All Project inputs except the gas chromatograph have been executed as planned. Major modification from the original plan. <ul style="list-style-type: none"> <li>Two C/Ps have left ONEDD.</li> <li>Organic mercury has not been analyzed because of the malfunction of the gas chromatograph.</li> </ul>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaire</li> </ul>
	1.2 Have Project activities been carried out as planned?	<ul style="list-style-type: none"> <li>Comparison of the plan and actual situation of the progress of each activity</li> <li>Confirmation of percentage of the finished activities</li> </ul>	No About half of the activities (33/63) were completed.	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaires</li> </ul>
	1.3 What kind of factors facilitated or impeded the progress of plan?	<ul style="list-style-type: none"> <li>Influences of factors on the Project implementation</li> <li>Progress of the Project compared with the PO</li> <li>Percentage of the finished activities for the planned activities</li> </ul>	Necessity of capacity development of the central regional laboratory (the Laboratory) was recognized through increasing in requisition of analysis from industries and district environment departments.	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaires</li> </ul>
	1.4 Have the Project outputs been produced as planned? Are they likely to be produced during the remaining period of the Project?	<ul style="list-style-type: none"> <li>Achievement of indicators for Output described in the PDM</li> <li>Percentage of produced outputs</li> <li>Progress of each output</li> </ul>	No Two outputs of the eight outputs were produced as planned. Among the remaining outputs, Output 3 (organic analysis) and Output 5 (microbiological analysis) were not likely to be produced by the end of the Project without the inputs (construction of prefabricated new laboratory, and repairing of the gas chromatograph) from ONEDD.	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaires</li> </ul>

2. Project Management and Implementation Process	2.1 Is the Project management system properly working?	<ul style="list-style-type: none"> <li>Achievement of indicators for Output described in the PDM</li> <li>Percentage of produced outputs</li> <li>Progress of each output</li> </ul>	<p>Yes</p> <p>Project management system is specified in R/D and M/M, but it has not been functioned.</p>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaire</li> </ul>
	2.1.1 Are roles of C/Ps in carrying out the Project activities clearly defined and properly working?	Understanding of their roles	<p>No</p> <ul style="list-style-type: none"> <li>Roles of C/Ps were not clearly defined.</li> <li>There was a communication gap between C/Ps because of the absent of organized reporting mechanism in ONEDD.</li> </ul>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaire</li> </ul>
	2.1.2 Is the Project monitoring system properly functioning?	<ul style="list-style-type: none"> <li>Progress of the Project compared with the PO</li> <li>Number of issues to be solved</li> </ul>	<p>No</p> <ul style="list-style-type: none"> <li>Activities and progress during the 1<sup>st</sup> year were reported to the JCC by JET.</li> <li>The result of capacity assessment of individuals was shared with C/P.</li> </ul>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaires</li> </ul>
	2.1.3 Is the decision making process of the Project clearly defined and properly functioning?	<ul style="list-style-type: none"> <li>Progress of the Project compared with the PO</li> <li>Number of issues to be solved</li> </ul>	<p>No</p> <p>Decision making process has not been functioning.</p>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interview</li> <li>Questionnaires</li> </ul>
	2.2 Was the PDM updated?		<p>No</p> <p>PDM was not updated.</p>	<ul style="list-style-type: none"> <li>Reviews of reports</li> </ul>
	2.3 Is communication mechanism among the Project members including between counterparts and JET properly functioning?	<ul style="list-style-type: none"> <li>Progress of the Project compared with the PO</li> <li>Attitude of the counterparts toward the activities</li> </ul>	<p>No</p> <ul style="list-style-type: none"> <li>JET and C/P in the Laboratory have organized a regular weekly meeting on Saturday morning. Two C/Ps working in the headquarters of ONEDD have not participated in them.</li> <li>There was no communication mechanism between C/P and JET during the absent period of JET.</li> </ul>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaires</li> </ul>
	2.4 Do the Ministry of Land Planning and Environment and ONEDD have proper and shared understanding of the Project?	<ul style="list-style-type: none"> <li>Progress of the Project compared with the PO</li> <li>Ownership of the Ministry of Land Planning and Environment and ONEDD</li> </ul>	<p>No</p> <p>Ownership of the MATE for the Project was low.</p>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaires</li> </ul>
	2.5 Are there any problems arising in implementation process of the Project? What are reasons for them?	<ul style="list-style-type: none"> <li>Achievement of the Project purpose</li> <li>Achievement of the outputs</li> <li>Progress of the Project compared with the PO</li> </ul>	<p>Yes</p> <p>It took time for making a decision because the project manager holds government post in the MATE.</p>	<ul style="list-style-type: none"> <li>Reviews of reports</li> <li>Interviews</li> <li>Questionnaires</li> </ul>

3. Relevance	3.1 Are the necessity and priority of the Project high?	Priority and needs	Yes The government of Algeria put high priority on environment protection. Twelve laws on environment were enacted during the last 5 years.	<ul style="list-style-type: none"> <li>• Reviews of reports</li> <li>• Interviews</li> </ul>
	3.2 Were there any political, social or economical changes influencing the Project purpose after commencement of the Project?	Priority and needs	No <ul style="list-style-type: none"> <li>• Government policy has not changed after the commencement of the Project.</li> <li>• Roles and functions of ONEDD have not been changed.</li> </ul>	<ul style="list-style-type: none"> <li>• Reviews of reports</li> <li>• Interviews</li> </ul>
	3.3 Is the Project purpose consistent with Algerian environmental policy?	Priority and needs	Yes Enhancement of environment monitoring network was consistent with the latest Environment National Strategy.	<ul style="list-style-type: none"> <li>• Reviews of reports</li> <li>• Interviews</li> <li>• Questionnaires</li> </ul>
	3.4 Are the overall goal and the Project purpose consistent with the Japanese technical cooperation policy?	Confirmation of priority	Yes Technical cooperation for environment sector meets the Japanese technical cooperation policy.	<ul style="list-style-type: none"> <li>• Web survey</li> <li>• Interview</li> </ul>
4. Effectiveness (Prospect)	3.4 Are there any technical advantages in the Project?	Methodology of technical assistance applied by JET	Yes Environmental monitoring methods of JIS, Japanese Industrial Standard, are almost as same as ISO on which the Algerian standard is based.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	3.6 Is there any overlap of the Project with other donors' Projects?	Overlap among donor Projects	No Any overlap with Projects of other donors was not found.	<ul style="list-style-type: none"> <li>• Web survey</li> <li>• Review of reports</li> <li>• Interviews with GTZ</li> <li>• Questionnaires</li> </ul>
	4.1 Is the Project purpose (as indicators) likely to be achieved by the end of the Project?	<ul style="list-style-type: none"> <li>• Achievement of the outputs</li> <li>• Progress of activities</li> <li>• Developed capacities of the Project administrative counterparts and C/P</li> </ul>	Yes The Project purpose, as evaluated by the original indicators, is not likely to be achieved by the end of the Project unless appropriate number of laboratory staff, laboratory management system and facilities are provided.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	4.2 Is the Project purpose shared by the Project members?	Understanding of PDM by the Project members	No All C/Ps except two C/Ps working in the headquarters of ONEDD understood the project purpose.	<ul style="list-style-type: none"> <li>• Interview</li> <li>• Questionnaire</li> </ul>

	4.3 Are the outputs in the PDM necessary or sufficient to achieve the Project purpose?	Consistency of the monitoring parameters in PDM and those of legal requirements.	Yes All the chemical, biological and physical parameters dealing with the Project are involved in the wastewater standard and the water quality standard for swimming beach in Algeria.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	4.4 Was it outcome of the Project when achievements of the activities are high?	Number or improvement of technical skills provided out of the Project	Yes • The Output 2 and 4 were achieved unexpectedly because of technical cooperation of JICA experts prior to the Project (2002-2005) • The Output 2 was achieved efficiently because of the technical assistance of GTZ prior to the Project.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	4.5 Were there any factors which gave negative or positive influences on the Project?	Influence(s) from outside of the Project activities	Yes (Positive) The satisfactory result of correlation test of heavy metals between WABAG, an Austrian sewage treatment company running in Algeria, and the central regional laboratory conducted in WABAG's laboratory in Austria gave C/P confidence to the job.	<ul style="list-style-type: none"> <li>• Interview</li> </ul>
5. Efficiency	5.1 Did the inputs of the Project properly produced outputs?		Yes Most of the inputs were fully utilized to produce the outputs.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	5.1.1 Were activities sufficient to produce outputs?	<ul style="list-style-type: none"> <li>• Percentage of the produced outputs</li> <li>• Progress of each output</li> <li>• Developed capacities of the administrative management counterparts and C/P</li> </ul>	Yes	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	5.1.2 Were number, qualification, dispatch timing and duration of JET appropriate to produce outputs?	<ul style="list-style-type: none"> <li>• Involvement of the administrative and C/P in the Project</li> <li>• Improved analytical skill of heavy metals</li> <li>• Acquired sampling skills of water, soil and sediment</li> <li>• Acquired analytical skill of organic mercury analysis</li> <li>• Acquired technical skills of QA/QC for environmental monitoring</li> </ul>	No <ul style="list-style-type: none"> <li>• Number of JET was appropriate.</li> <li>• C/P satisfied the quality of JET.</li> <li>• JET should have been dispatched after the baseline assessment of C/P.</li> <li>• The timing of dispatch should have arranged to minimize the duration without JET in the laboratory.</li> <li>• Duration of JET in charge of laboratory database was too short to make some counterparts to understand the techniques.</li> <li>• C/P required longer training period because training schedule were too tight.</li> </ul>	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Performance grid</li> <li>• Questionnaire</li> </ul>

			<ul style="list-style-type: none"> <li>• Acquired technical skills of database development</li> <li>• Acquired technical skills of measuring COD, SS and oil content</li> </ul>	<p>C/P did not spend time for training at the beginning of June because of the requisition of chemical analysis from outside.</p>	
	5.1.3 Were the quantity, specification, quality and input timing of equipment appropriate to produce outputs?	<ul style="list-style-type: none"> <li>• Acquired sampling skills of water, soil and sediment</li> <li>• Acquired analytical skill of organic mercury</li> <li>• Improved analytical skill of heavy metals</li> <li>• Acquired technical skill of oil content measurement</li> <li>• Number of finished activities which use the provided equipment</li> </ul>	<p>Yes</p> <p>Introduction of the sediment sampler facilitated the Activity 2 by enabling the sampling works more effectively and efficiently.</p>	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>	
	5.1.4 Were the programs and timing of the training in Japan appropriate to produce outputs?	<p>Developed capacities of the trainees in Japan</p>	<p>Yes</p> <p>The timing of the 1<sup>st</sup> C/P training was appropriate because a GC/MS, which C/Ps learned during the training, will be installed in Marcy 2007.</p>	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>	
	5.1.5 Were the workshop and the seminar appropriate to produce outputs?	<p>Expectation or needs for workshop and seminar</p>	<p>Yes</p> <ul style="list-style-type: none"> <li>• The 1<sup>st</sup> seminar provided the occasion to share the information on environmental pollution in the Qued El Harrash and the outline of the Project with all the counterparts.</li> <li>• The importance of database in the environmental monitoring was introduced to the 3 regional laboratories in the 2nd seminar.</li> <li>• The water pollution in the Project area was presented by C/P for the first time at the 3<sup>rd</sup> seminar.</li> </ul>	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> </ul>	
	5.1.6 Are the space and infrastructure for JET appropriate for their activities?	<p>Work efficiency of JET</p>	<p>No</p> <ul style="list-style-type: none"> <li>• An office with lock was provided to JET from ONEDD. It was not large enough for JET and the office was not equipped with a telephone line.</li> <li>• Security of the laboratory was secured.</li> </ul>	<p>Observation</p>	
	5.1.7 Were C/Ps assignment appropriate to produce outputs?	<ul style="list-style-type: none"> <li>• Progress of the Project compared with the PO</li> <li>• Number of C/P</li> <li>• Change in number of C/P</li> <li>•</li> </ul>	<p>No</p> <ul style="list-style-type: none"> <li>• Newly assigned C/Ps had basic knowledge of chemistry, but no experience in chemical analysis.</li> <li>• Assignment of each C/P was not officially decided and assignment of the two C/Ps was not clear.</li> </ul>	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>	

	<ul style="list-style-type: none"> <li>Number of problems concerning the administrative counterparts and C/P to be solved</li> </ul>	<ul style="list-style-type: none"> <li>Two C/Ps left ONEDD and one laboratory staff came back to the work from 3 year maternity leave. The total number of C/P is 10.</li> </ul>	
5.2 Is important assumption for outputs still valid?	<p>Change in important assumption after the commencement of the Project</p>	<p>Yes The important assumptions were still valid.</p>	<ul style="list-style-type: none"> <li>Review of reports</li> <li>Interview</li> </ul>
6. Impact (Prospect)	<p>6.1 Regarding the current performance of the inputs, activities and outputs, are the overall goals likely to be achieved as the outcome of the Project?</p>	<p>Yes</p> <ul style="list-style-type: none"> <li>Environmental monitoring in the Qued El Harrash industrial zone has been implemented and monitoring results were accumulated as a database.</li> <li>Requisite of chemical analysis from industries was increasing.</li> <li>Two regional laboratories expect for the Laboratory to assist their capacity building in environmental monitoring.</li> <li>ONEDD took initiatives for arranging the 3 seminars.</li> <li>Two district environment departments requested chemical analysis of wastewater taken as a part of the inspection for industries.</li> </ul>	<ul style="list-style-type: none"> <li>Review of reports</li> <li>Interview</li> <li>Questionnaire</li> </ul>
6.2 Are the overall goals likely to be achieved after achievement of the Project purpose?	<ul style="list-style-type: none"> <li>Extension of monitoring network</li> <li>Needs of National Environment Database (SNIE) in the government</li> <li>Training needs for the regional laboratories</li> </ul>	<p>It is too early to assess the achievement of the overall goals. Possibility will be assessed in a final or ex-post evaluation.</p>	<ul style="list-style-type: none"> <li>Interview</li> </ul>

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	6.3 Were there any change in competence, hierarchy, budget and human resource allocation before and after the commencement of the Project?	Influence(s) of change in inputs of ONEDD on the progress of the Project compared with the PO	No ONEDD proposed almost as same budget as allocated during the past three years.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> </ul>
	6.4 Did the Project give positive or negative influences to the outside such as the public, government organizations, universities and NGOs?	Positive or negative impact(s) to the outside of Project	Yes (Positive) <ul style="list-style-type: none"> <li>• Requisition for heavy metal analysis from district environment departments has been increasing.</li> <li>• Environmental awareness of some industries was increased.</li> <li>• A private pharmaceutical company, SAIDAL, and the central regional laboratory made agreement on regular wastewater monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	6.5 Does the Project expect any other positive and negative effects other than the overall goals? If negative effects are expected, are any mitigation measures planned or implemented?	Influence(s) of effect(s)	Yes Creation of a business chance for environmental monitoring or chemical analysis is expected.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
7. Sustainability (prospect)	7.1 Is policy support likely to continue after the end of the Project?	Consistency of the government policy	Yes The MATA revised the Environment National Strategy every 2 years to strengthen pollution control.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> </ul>
	7.2 Is the Project sustainable from organizational and financial aspects?	<ul style="list-style-type: none"> <li>• Budget allocation for ONEDD in the Ministry of Land Planning and Environment</li> <li>• Budget allocation to monitoring division in ONEDD</li> <li>• Plan of construction of new laboratory building</li> </ul>	Yes Income from the chemical analysis for industries, DA2.5million in 2006. Part of the income was spent on chemical reagents and maintenance of the equipment.	<ul style="list-style-type: none"> <li>• Interview</li> </ul>
	7.2.1 Does ONEDD have organizational ability to maintain the outcomes after the Project?	Capacity of organization (laboratory and administration)	No Organization of the Laboratory has not established.	<ul style="list-style-type: none"> <li>• Review of reports</li> <li>• Interview</li> <li>• Questionnaire</li> <li>• Interview</li> </ul>

	7.2.2 Do ONEDD and the Ministry of Land Planning and Environment have enough ownership of the Project?	<ul style="list-style-type: none"> <li>Understanding of the Project by ONEDD and the Ministry of Land Planning and Environment</li> <li>Response to the Project</li> </ul>	No The MATE had a little ownership.	<ul style="list-style-type: none"> <li>Interview with ONEDD and Ministry officials</li> </ul>
	7.2.3 Is the necessary budget likely to be secured to sustain the Project outputs	<ul style="list-style-type: none"> <li>Increase in budget of laboratory</li> </ul>	Yes/No Budget plan was developed base on an annual operation plan. Budget for vehicle for collecting sampl is necessary	<ul style="list-style-type: none"> <li>Interviews</li> </ul>
	7.2.4 Do C/P implement environmental monitoring by themselves?	<ul style="list-style-type: none"> <li>Progress of the Project compared with the PO</li> <li>Consistency of laboratory management in the new laboratory</li> </ul>	Yes C/P implemented the sampling in the Project are 6 times during the absence of JET.	<ul style="list-style-type: none"> <li>Interview</li> <li>Monitoring report</li> </ul>
	7.2.5 Are maintenance parts for the equipment and reagents supplied on demand?	<ul style="list-style-type: none"> <li>Capacity of laboratory management</li> </ul>	Yes Spare parts and chemical reagents were delivered within 6 weeks after order.	<ul style="list-style-type: none"> <li>Interview</li> <li>Observation of laboratory and store room</li> </ul>
	7.2.6 Is the maintenance system established in the Laboratory	<ul style="list-style-type: none"> <li>Maintenance condition of the equipment (Atomic Absorption Spectrometer, Gas Chromatographs, ion exchange column, pH meter, DO meter etc)</li> <li>Number of requests from local government for sampling or analysis</li> </ul>	No There was not any maintenance record of the equipment in the Laboratory.	<ul style="list-style-type: none"> <li>Interviews</li> <li>Observation of laboratory</li> </ul>
	7.2.6 Do district environment departments expect cooperation with ONEDD?		Yes The number of requests from local government was increasing because of the increased number of parameters the central regional laboratory can analyze.	<ul style="list-style-type: none"> <li>Interview</li> <li>Analysis report</li> </ul>



## PROJECT DESIGN MATRIX (PDM revised)

Name of Project: Capacity Development of Environmental Monitoring in Algeria

Name of Organization: ONEDD Supporting Organization: MATE

Project Site: Alger Implementation Period: November 2005 to October 2008

PDM created through workshop on April 12, 2005. Revised in February 2007 (underlined parts)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b></p> <p>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.</p> <p>2. National environmental protection policy is promoted and counter-measures are recommended</p> <p>3. Counter-measures to prevent environmental pollution in Oued El Harrach industrial areas is deployed</p>	<p>1.1 Realization of national monitoring system based on the National Environmental Strategy.</p> <p>1.2 Establishment of National Environmental Database (SNIE)</p> <p>1.3 The Central Regional Laboratory (Alger) develops the quality of the reference laboratory in Algeria</p> <p>2. The Regional laboratories in Oran and Constantine carry out environmental monitoring utilizing the standard procedures employed in the Central Regional Laboratory (Alger) Partnership among ministries related to environmental regulation are established</p> <p>3. Decrees and public orders based on the measures against environmental polluters in the Oued El Harrach industrial areas are enforced.</p>	<p>1.1, 1.2 National environmental monitoring network</p> <p>1.3.1 Record of supply of reference materials other laboratories</p> <p>1.3.2 Record of technical support, consulting and training, to other laboratories</p> <p>1.3.3 Network with research institutes in Algeria</p> <p>1.3.4 Accredited from international analytical association</p> <p>2. The conditions of environmental monitoring systems in the regional laboratories in Oran and Constantine</p> <p>3.1 List of public orders, list of plans of counter measures submitted by polluters</p> <p>3.2 Decrees and public orders issued for measures against contamination of Oued El Harrach environmental quality data obtained at several survey stations in Oued El Harrach. □</p>	
<p><b>Project Purpose</b></p> <p>Environmental monitoring capacity of the Central Regional Laboratory (Alger) is strengthened.</p>	<p>1. The Central Regional Laboratory (Alger) is able to response to the requisition about the environmental monitoring from various clients</p> <p>2. The Central Regional Laboratory (Alger) is able to publish comprehensive environmental report(s) on the Oued El Harrach pollution problems, which promotes</p>	<p>1. Number of clients, record of consulting and number of reports</p> <p>2.1 Published report</p> <p>2.2 Record of seminar</p>	<p>The Government of Algeria continues and maintains to appropriate the financial supports to ONEDD.</p>

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
	<p>appropriate counter-measures for environmental protection and remediation of the area.</p> <p>3. C/P is able to Implement technical advise to ONEDD's other regional laboratories in Algeria.</p>	<p>3. Record of workshops to ONEDD engineers in other laboratories, record of consulting</p>	
<b>Output</b>			
<p>1. Laboratory management to ensure a high-quality operation is in place</p>	<p>1.1 Organizational arrangement, mandate for staff and directional authority are clearly defined.</p> <p>1.2 Meeting of laboratory members is organized regularly</p> <p>1.3 Operation plan is prepared</p> <p>1.4 Operation is carried out based on the operation plan</p>	<p>1.1 Organizational chart with personnel list, job description</p> <p>1.2 Minutes of lab meeting</p> <p>1.3 Operation plan</p> <p>1.4 Operation/annual report</p>	
<p>2 Skills and knowledge in field survey and sampling management are acquired</p>	<p>2.1 C/P is able to perform field survey including sampling</p> <p>2.2 C/P is able to perform sample management (preparation, storing, labeling, etc.)</p>	<p>2.1 Observation by the experts, sampling manual</p> <p>2.2 Observation by the experts, sampling manual</p>	
<p>3 Skills and knowledge in organic chemical analysis are acquired</p>	<p>3.1 C/P is able to perform organic chemical analysis of compounds specified in the Algerian standards</p> <p>3.2 Analytical protocol is established</p> <p>3.3 Accuracy of data obtained from the analysis maintains within the accepted range</p>	<p>3.1 Observation by the experts, logbook</p> <p>3.2 Analytical manual</p> <p>3.3 Relative standard deviation test, reference material test</p>	
<p>4 Skills and knowledge in inorganic chemical analysis are acquired</p>	<p>4.1 C/P is able to perform inorganic analysis of compounds specified in the Algerian standards</p> <p>4.2 Analytical protocol is established</p> <p>4.3 Accuracy of data obtained from the analysis maintains within the accepted range</p>	<p>4.1 Observation by the experts, logbook</p> <p>4.2 Analytical manual</p> <p>4.3 Relative standard deviation test, reference material test</p>	
<p>5 Skills and knowledge in microbiological analysis are acquired</p>	<p>5.1 C/P is able to perform microbiological analysis specified in the Algerian standards</p> <p>5.2 Analytical protocol is established</p> <p>5.3 Accuracy of data obtained from the analysis maintains within the accepted range</p>	<p>5.1 Observation by the experts, logbook</p> <p>5.2 Analytical manual</p> <p>5.3 Statistical analysis of the data</p>	
<p>6 Skills and knowledge in developing and maintaining database are acquired</p>	<p>6.1 Architecture of the database for the Central Regional Laboratory (Alger) is designed</p> <p>6.2 The database is established</p> <p>6.3 Data collected from the analysis is stored in the database, and is available when requested.</p>	<p>6.1 Specification and algorithm of the database</p> <p>6.2 Database installed</p> <p>6.3 Number of records, number of users</p>	

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Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
7. Skills and knowledge for environmental evaluation, analysis and recommendation utilizing the obtained data are acquired	7.1 C/P is able to produce environmental reports based on the monitoring results (results of survey analysis and interpretation) 7.2 C/P is able to present the analytical results base on monitoring results at seminars and meetings, etc.	7. 1 Report on the results of environmental monitoring 7.2 Proceeding, papers and reports by C/P at local and international seminars and meetings, etc.	
8. <u>Technical</u> knowledge for the de-pollution and remediation are acquired	8. C/P is able to present the information <u>on</u> de-pollution and remediation <u>technologies</u> for the Project area at seminars and meetings, etc	8. Proceedings, papers and reports by C/P at local and international seminars and meetings, etc.	
9. <u>Knowledge on environmental quality standards, regulations, and institutional/administrative setup for de-pollution and remediation</u> are acquired	9. <u>C/P is able to propose an environmental quality standard, regulation and institutional/administrative setup for de-pollution and remediation, etc</u>	9. <u>Proceedings, papers, reports, internal documents by C/P at local and international seminars and meetings, etc.</u>	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Activities 1. ▯ Laboratory management to ensure a high-quality operation is in place</b></p> <p>1.1 Nominate the members of JCC</p> <p>1.2 Define organization and management the Central Regional Laboratory (Alger)</p> <p>1.3 Develop operation plan the Central Regional Laboratory (Alger)</p> <p>1.4 Organize laboratory meeting of the Central Regional Laboratory (Alger)</p> <p>1.5 Monitor the implementation based on the operation plan</p> <p>1.6 Manage chemicals and wastes</p> <p>1.7 Evaluate the result of implementation based on the operation plan</p> <p>1.8 Feedback the monitoring results to the JCC</p> <p>1.9 Carry out maintenance of laboratory facility regularly</p>	<p><b>Input</b></p> <p>▯ Input from JICA</p> <p>(1) Short-term Experts</p> <p>(2) Provision of technical study and analytical devises</p> <p>(3) Provision of database equipment</p> <p>(4) Co-hosting workshops and seminars</p> <p>(5) Individual training in Japan</p> <p>(6) Publication of research outcomes</p> <p>(7) Recruitment of local consultants</p> <p>(8) Ground water sampling well</p> <p>◆ Country-focused technical training (at JICA Kyushu)*</p> <p>* These training are implemented under other project schematics.</p>	<p><b>Input</b></p> <p>▯ Input from ONEDD and MATE</p> <p>▯</p> <p>(1) Assigning C/P personnel</p> <p>(2) Provision of the Central Regional Laboratory (Alger) (Installment of provided machinery and equipment, construction of lab.)</p> <p>(3) Local cost incurred by survey and study</p> <p>(4) Local cost incurred by analytical work at the laboratory</p> <p>(5) Co-hosting of workshops and seminars</p> <p>(6) Publication of research outcomes</p> <p>(7) Organizing the JCC (inclusive of stakeholder organizations)</p>	
<p><b>Activity 2: ▯ Skills and knowledge in field survey and sampling management are acquired</b></p> <p>2.1 Assess existing capacity of field survey and sampling management.</p> <p>2.2 Identify training needs</p> <p>2.3 Procure and install equipment and material</p> <p>2.4 Implement training in field survey and sampling management (water, soil and sediment)</p> <p>2.5 Implement training in groundwater sampling</p> <p>2.6 Collect the Samples from the Project area</p> <p>2.7 Develop manual for <u>the field sampling</u></p> <p>2.8 Prepare working papers survey and sampling results</p> <p>2.9 Monitor and evaluate the training</p>			

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Activity 3: Skills and knowledge in organic analysis are acquired</b></p> <p>3.1 Assess existing capacity of organic analysis.</p> <p>3.2 Identify training needs</p> <p>3.3 Procure and install equipment and material</p> <p>3.4 Implement training in analyzing organic metals (methyl mercury etc.)</p> <p>3.5 Implement training in analyzing total organic carbon</p> <p>3.6 Implement training in analyzing oil and grease</p> <p>3.7 Implement training in analyzing hydro carbons, BTX, and aromatic hydro carbons</p> <p>3.8 Implement training in analyzing polychlorinated biphenyls (PCBs), pesticides, and halogenated organics</p> <p>3.9 Implement training in analyzing nonvolatile organics</p> <p>3.10 Analyze the Samples from the Project area</p> <p>3.11 Develop manual for the analysis</p> <p>3.12 Prepare working papers on the results of organic chemical analysis</p> <p>3.13 Monitor and evaluate the training</p>			<p>Field survey and sampling in industrial sites in the El Harrach river basin can be carried out without any restriction</p>
<p><b>Activity 4: Skills and knowledge in inorganic analysis are acquired</b></p> <p>4.1 Assess existing capacity of inorganic analysis.</p> <p>4.2 Identify training needs</p> <p>4.3 Procure and install equipment and material</p> <p>4.4 Implement training in analyzing heavy metals and toxic elements</p> <p>4.5 Implement training in analyzing ionic compounds and inorganic substances</p> <p>4.6 Analyze the Samples from the Project area</p> <p>4.7 Develop manual for the analysis</p> <p>4.8 Prepare working papers on the results of inorganic chemical analysis</p> <p>4.9 Monitor and evaluate the training</p>			<p>(Same as above)</p>

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Activity 5: Skills and knowledge in microbiological analysis are acquired</b></p> <p>5.1 Assess existing capacity of microbiological analysis Identify raining needs</p> <p>5.2 Procure and install equipment and material</p> <p>5.3 Implement training in microbiological analysis</p> <p>5.4 Analyze the samples from the Project area</p> <p>5.5 Develop manual for the analysis</p> <p>5.6 Prepare working papers on the results of microbiological analysis</p> <p>5.7 Monitor and evaluate the training</p>			(Same as above)
<p><b>Activity 6: Skills and knowledge in developing and maintaining database are acquired</b></p> <p>6.1 Define specifications of the database</p> <p>6.2 Develop a database</p> <p>6.3 Implement user training for the database</p> <p>6.4 Monitoring and evaluation of the training is carried out.</p>			<p><b>Pre-conditions</b></p> <p>□ Algerian Government maintains the current proactive attitude toward environmental policy and its enforcement.</p> <p>□ The mandate of the Central Regional Laboratory (Alger) of ONEDD maintains the same.</p> <p>□ ONEDD recruits and assigns necessary personnel as indicated in the application.</p> <p>□ At least the current level of security situation is maintained so JICA experts can implement their services within the Wilaya of Alger.</p>
<p><b>Activity 7: Skills and knowledge for environmental evaluation, analysis and recommendation utilizing the obtained data acquired</b></p> <p>7.1 Develop environmental survey plan of <u>the Project Area</u></p> <p>7.2 Coordinate with the district environment department to inspect the suspected pollutants as necessary</p> <p>7.3 Analyze and evaluate the data</p> <p>7.4 Develop inventory of pollution of <u>the Project Area</u></p> <p>7.5 Discuss and interpret the results of data analysis</p> <p>7.6 <u>Prepare the comprehensive environmental report(s) on the pollution problems in the Project Area</u></p> <p>7.7 Prepare other technical reports related to the Activities</p> <p>7.8 Evaluate the report(s)</p> <p>7.9 Organize and participate workshops and seminar</p> <p>7.10 Publish annuals and reports</p>			

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Activity 8: ¶ <u>Technical knowledge for the de-pollution and remediation are acquired</u></b></p> <p>8.1 Introduce about the experience on de-pollution and remediation</p> <p>8.2 Present the recommendations <u>on de-pollution and remediation technologies</u> for de-pollution of the Project area</p> <p>8.3 Disseminate the knowledge <u>of de-pollution and remediation technologies</u></p>			
<p><b>Activity 9: ¶ <u>Knowledge on environmental quality standards, regulations, and institutional setup for de-pollution and remediation are acquired</u></b></p> <p>9.1 Organize a seminar on <u>environmental quality standards and regulation</u></p> <p>9.2 Organize a seminar on <u>economic incentive, subsidies, and environmental fund</u></p> <p>9.3 Recommend necessary <u>institutional/administrative setup for de-pollution and remediation</u></p> <p>9.4 Recommend for <u>de-pollution policy and strategy of the Project area</u></p>			

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Plan of Operation (P/O) in Progress revised by the Mid-term Evaluation

ANNEX III

Japanese Fiscal Year		JFY2005				JFY2006				JFY2007				JFY2008				
Month		2	5	8	11	2	5	8	11	2	5	8	11	2	5	8	11	
Outputs	Activities	Year 1				Year 2				Year 3								
1. Laboratory management to ensure a high-quality operation is in place	1.1 Nominate the members of the JCC																	
	1.2 Define organization and management of the Central Regional Laboratory (Alger)																	
	1.3 Develop operation plan of the Central Regional Laboratory (Alger)																	
	1.4 Organize laboratory meeting of the Central Regional Laboratory (Alger)																	
	1.5 Monitor the implementation based on the operation plan of the Central Regional Laboratory (Alger)																	
	1.6 Evaluate the result of implementation based on the operation plan																	
	1.7 Manage chemicals and wastes																	
	1.8 Feedback the monitoring results to the JCC																	
	1.9 Carry out maintenance of laboratory facility regularly																	
	2. Skills and knowledge in field survey and sampling management are acquired	2.1 Assess existing capacity of field survey and sampling management																
		2.2 Identify training needs																
		2.3 Procure and install equipment and material																
		2.4 Implement training in field survey and sampling management (water, soil, and sediments)																
		2.5 Implement training in groundwater sampling																
		2.6 Collect the samples from the Project area																
		2.7 Develop manual for the field sampling																
		2.8 Prepare working papers of the survey and sampling results																
		2.9 Monitor and evaluate the training																
		3. Skills and knowledge in organic analysis are acquired	3.1 Assess existing capacity of organic analysis															
3.2 Identify training needs																		
3.3 Procure and install equipment and material																		
3.4 Implement training in analyzing organic metals (methyl mercury etc.)																		
3.5 Implement training in analyzing total organic carbon																		
3.6 Implement training in analyzing oil and grease																		
3.7 Implement training in analyzing hydro carbons, BTX, and aromatic hydro carbons																		
3.8 Implement training in analyzing polychlorinated biphenyls (PCBs), pesticides, and halogenated organics																		
3.9 Implement training in analyzing nonvolatile organics																		
3.10 Analyze the samples from the Project area																		
3.11 Develop manual for the analysis																		
3.12 Prepare working papers on the results of organic chemical analysis																		
3.13 Monitor and evaluate the training																		

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Japanese Fiscal Year		JFY2005				JFY2006				JFY2007				JFY2008			
Month		2	5	8	11	2	5	8	11	2	5	8	11	2	5	8	11
Outputs	Activities	Year 1				Year 2				Year 3							
4. Skills and knowledge in inorganic analysis are acquired	4.1 Assess existing capacity of inorganic analysis.					■	■			■							
	4.2 Identify raining needs					■	■			■							
	4.3 Procure and install equipment and material					■	■	■	■								
	4.4 Implement training in analyzing heavy metals and toxic elements						■	■	■	■	■	■	■				
	4.5 Implement training in analyzing ionic compounds and inorganic substances						■	■	■	■	■	■	■				
	4.6 Analyze the sample from the Project area					■	■	■	■	■	■	■	■				
	4.7 Develop manual for the analysis						■	■	■	■	■	■	■				
	4.8 Prepare working papers on inorganic chemical analysis						■	■	■	■	■	■	■				
	4.9 Monitor and evaluate the training						■	■	■	■	■	■	■				
5. Skills and knowledge in micro biological analysis are acquired	5.1 Assess existing capacity of microbiological analysis																
	Identify training needs																
	5.2 Procure and install equipment and material																
	5.3 Implement training in microbiological analysis																
	5.4 Analyze the sample from the Project area																
	5.5 Develop manual for the analysis																
6. Skills and knowledge in developing and maintaining database are acquired	6.1 Define specifications of the database																
	6.2 Develop a database																
	6.3 Implement training for the database																
	6.4 Monitoring and evaluation of the training is carried out.																
7. Skills and knowledge for environmental evaluation, analysis and recommendation utilizing the obtained data acquired	7.1 Develop environmental survey plan of the Project area					■	■			■	■						
	7.2 Coordinate with the district environment department to inspect the suspected pollutants as necessary					■	■	■	■	■	■	■	■				
	7.3 Analyze and evaluate the data					■	■	■	■	■	■	■	■				
	7.4 Develop inventory of pollution of the Project area					■	■	■	■	■	■	■	■				
	7.5 Discuss and interpret the results of data analysis																
	7.6 Prepare the comprehensive environmental report(s) on the pollution problems in the Project area																
	7.7 Prepare working papers related to the Activities																
	7.8 Evaluate the working papers and report(s)																
	7.9 Organize and participate workshops and seminar																
	7.10 Publish annuals and reports																
8. Technical knowledge, and for the de-pollution and remediation are acquired	8.1 Introduce about the experience on de-pollution and remediation																
	8.2 Present the recommendations on de-pollution and remediation technologies for de-pollution of the Project area																
	8.3 Disseminate the knowledge of de-pollution and remediation technologies																
9 Knowledge on environmental quality standards, regulations, and institutional setup for de-pollution and remediation are acquired	9.1 Organize a seminar on environmental quality standards and regulation																
	9.2 Organize a seminar on economic incentive, subsidies, and environmental fund																
	9.3 Recommend necessary institutional/administrative setup for de-pollution and remediation																
	9.4 Recommend for de-pollution policy and strategy of the Project area																
Necessary arrangements and actions taken by ONEDD	Recruitment of necessary counterparts																
	Establishment of microbiology lab and assigning the staff																
	Installation of the GC																
	Establishment of waste treatment and ventilation systems in the organic chemistry lab.																
	Prepare previous data (maps, documents and inventory etc.)																

Duration of activity (dispatch of short-term experts are carried out during the part of the duration)

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## List of Attendants

**The Algerian side**

Mr. Abdelkader BENHADJOUJJA	Chief of Minister's Cabinet, Ministry of Land Planning and Environment
Mr. Zerrouk AHMED	Permanent Secretary, Ministry of Land Planning and Environment
Mr. Youcef BENAGOUJIL	Inspector, International Cooperation Bureau
Mr. Bachir SLIMANI	Director General, ONEDD
Mr. Abderrahmane LALEG	Assistant of Director General, ONEDD
Mr. Mohamed MOALI	Acting Director, the Central Regional Laboratory, Ben Aknoun, Alger
Mr. Omar HOUAS	Engineer
Ms. Assia CHATAL	Engineer
Mr. Mohamed LAKHDARI	Engineer
Ms. Leila NECHAOUNI	Engineer
Ms. Salima OUSSALEM	Engineer
Ms. Amel TIBECHE	Engineer
Ms. Chanese GUERAINI	Engineer
Mr. Mohamed SMAI	Technician

**The Japanese side**

Dr. Mitsuo YOSHIDA	Senior Advisor, Institute for International Cooperation, JICA
Ms. Izumi TSUCHIHATA	Assistant Resident Representative JICA France Office
Ms. Eriko TAMURA	Senior Program Officer, Environmental Management Team 2, Group 2, Global Environment Department, JICA
Mr. Terumi MIZUNO	JICA Mission Member, Techno Chubu Company Ltd.
Mr. Akihiko YAHATA	JICA Expert
Mr. Hiroyuki OHI	JICA Expert