

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF LOCAL ADMINISTRATION AND  
ENVIRONMENT (MOLAE)  
THE SYRIAN ARAB REPUBLIC

**THE CAPACITY DEVELOPMENT  
OF  
ENVIRONMENTAL MONITORING  
AT  
DIRECTORATES  
FOR  
ENVIRONMENTAL AFFAIRES  
IN  
GOVERNORATES  
IN THE SYRIAN ARAB REPUBLIC**

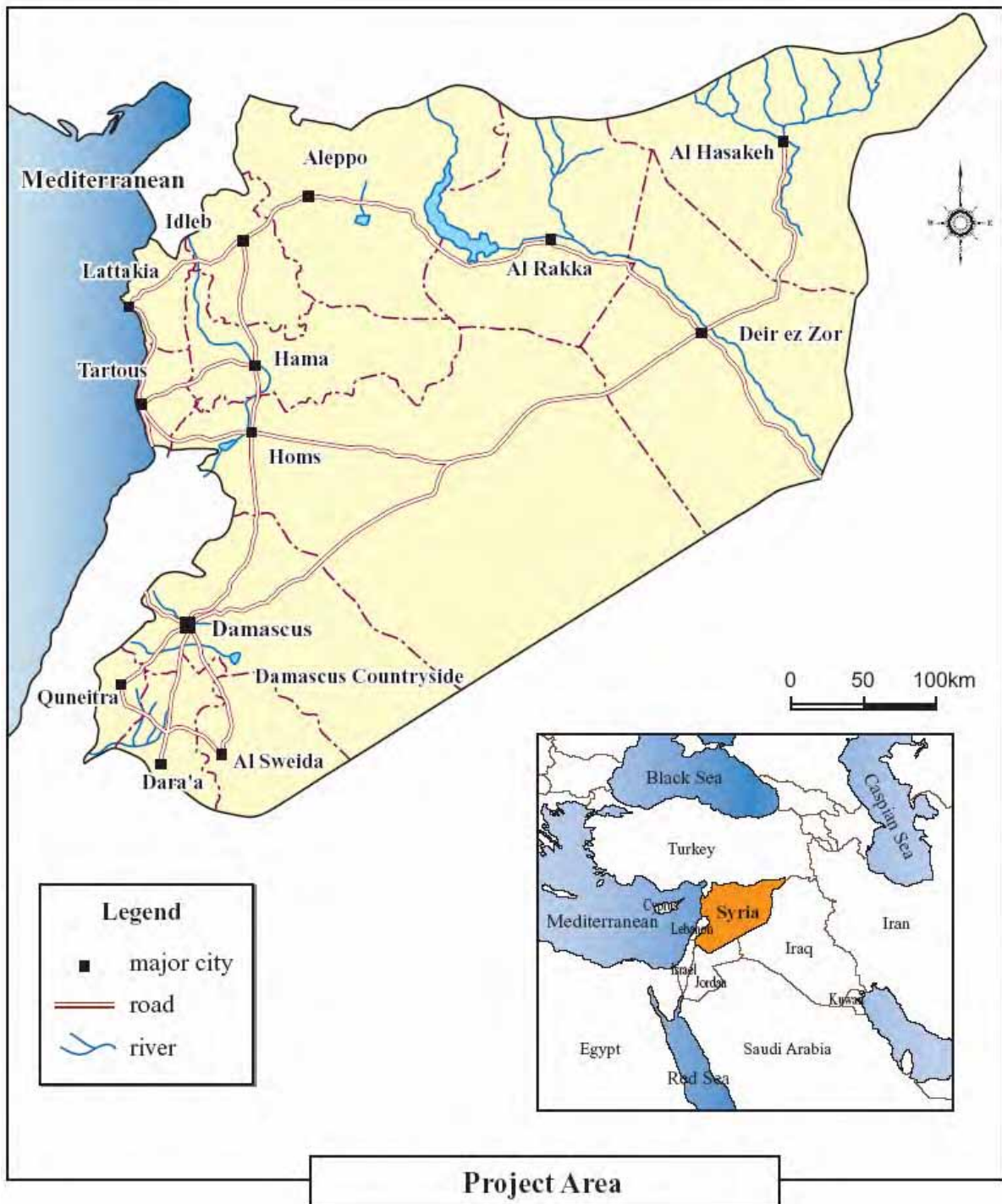
**PROJECT COMPLETION REPORT  
(Main Report)**

January 2008

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**The Capacity Development of  
Environmental Monitoring at Directorates for  
Environmental Affairs in Governorates**

**Project Completion Report  
(Main Report)**

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## List of Abbreviations

Organizations and Projects		Chemical Substance and Equipment	
AEC	Atomic Energy Commission of Syria	AAS	Atomic Absorption Spectrophotometer
DFEA	Directorate for Environmental Affaires	AQ	Air Quality Analysis
C/P	Counterpart	BW	Basic Water Quality Analysis
CCC	Cairo Central Center	BOD	Biochemical Oxygen Demand
COI	Chamber of Industry	CB	Chemical and Biological Analysis
EEAA	Egyptian Environmental Affaires Agency	Cl	Chloride
EOJ	Embassy of Japan in Syria	CO	Carbon Monoxide
ERL	Environmental Research Laboratory in HIAST	COD	Chemical Oxygen Demand
ESC	Center for Environmental Studies (former Scientific and Environmental Research Center: SERC)	DM	Data Management
GCEA	General Commission for Environmental Affaires	DO	Dissolved Oxygen
HCES	Higher Council for Environmental Safety	EC	Electric Conductivity
HIAST	Higher Institute of Applied Science and Technology	GC	Gas Chromatograph
ITRC	Industrial Testing and Research Center in the Ministry of Industry	GC/MS	Gas Chromatograph Mass Spectrometer
JET	JICA Expert Team	HC	Hydrocarbon
JOCV	Japan Overseas Cooperation Volunteers	HM	Heavy Metal Analysis
MAWRED	The Modernizing and Activating Woman's Role in Economic Development	IC	Ion Chromatograph
METAP	Mediterranean Environmental Technical Assistance Program	ICP	Inductively Coupled Plasma
MOA	Ministry of Agriculture	NO <sub>x</sub>	Nitrogen Oxide
MOH	Ministry of Health	NO <sub>2</sub>	Nitrite
MOIn	Ministry of Industry	NO <sub>3</sub>	Nitrate
MOIr	Ministry of Irrigation	O/M	Operation and Maintenance
MOLAE	Ministry of Local Administration and Environment	Ox	Oxidant
NEAP	National Environmental Action Plan	PA	Public Awareness
NGO	Non Governmental Organization	pH	Hydrogen Ion Exponent
RBO	Regional Branch Office	PO <sub>4</sub>	Phosphate Ion
SASMO	Syrian Arab Organization for Standardization and Metrology	QA/QC	Quality Assurance and Quality Control
SPC	State Planning Commission	SPM	Suspended Particulate Matters
St/C	Steering Committee	SPM10	Particulate Matters less than 10 micrometer
SV	Senior Volunteers	SO <sub>2</sub>	Sulfur Dioxide
T/C	Technical Committee	SOP	Standard Operation Procedure
<b>Reports and Minutes</b>		SPM	Suspended Particulate Matters
		SS	Suspended Solids
EIA	Environmental Impact Assessment	StM	The Standard Methods for the Examination of Water and Wastewater 20th Edition
EMO	Environmental Monitoring Plan	TDS	Total Dissolved Solid
M/M	Minutes of Meeting	TOC	Total Organic Carbon
PO	Plan of Operation	TSP	Total Suspended Particulate
PDM	Project Design Matrix	UV/VIS	Ultraviolet/Visible Spectrophotometer
R/D	Record of Discussions	VOC	Volatile Organic Caron



# 1. GENERAL

## 1.1 Objectives of the Project

The overall goal of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates (the Project) is defined that all Directorates acquire the capability to introduce and conduct regular environmental monitoring of required parameters for air and water quality according to the monitoring plans formulated by the Directorates themselves, and to implement activities for public awareness including publication of the monitoring results. Therefore, objectives of the Project are set as follows:

- 1) Establishment of the regular environmental monitoring system related to air and water quality by Directorate for Environmental Affairs (DFEA) and General Commission for Environmental Affairs (GCEA) in Ministry of Local Administration and Environment (MOLAE), and
- 2) Management and usage of the monitoring data for publication and promotion of public awareness on environment.

## 1.2 Scope of Work

The Project area is the whole territory of the Syrian Arab Republic, about 185,000 km<sup>2</sup>, covered by the following GCEA and 14 DFEAs as shown in the Location Map of the covering page.

**Target Organizations of the Project**

No	Name
1	General Commission for Environmental Affairs (GCEA)
2	Damascus DFEA
3	Damascus Countryside DFEA
4	Aleppo DFEA
5	Homs DFEA
6	Hama DFEA
7	Lattakia DFEA
8	Deir ez Zor DFEA
9	Idleb DFEA
10	Hasakeh DFEA
11	Rakka DFEA
12	Sweida DFEA
13	Dara'a DFEA
14	Tartous DFEA
15	Quneitra DFEA

According to the Project Design Matrix (PDM) in the Record of Discussion (R/D) in 9 September 2004, the outputs and activities of the Project are as follows.

### Outputs and Activities of the Project described in PDM of 9 September 2004

Output No.		Description
<b>Output-1</b>		<b>Technical level of laboratory staff concerning environmental sampling and analysis is improved.</b>
1)	Activity 1-1	To implement training in theory for making monitoring plans, samplings, analysis, interpretation, evaluation, data filing and reporting.
2)	Activity 1-2	To implement hands-on trainings in samplings, pretreatment, analysis, interpretation, evaluation, data filing and reporting.
3)	Activity 1-3	To implement on-site on-the-job training (OJT) in samplings, analysis, interpretation, evaluation, data filing and reporting.
<b>Output-2</b>		<b>Laboratories are properly managed by laboratory staff themselves.</b>
1)	Activity 2-1	To compile the laboratory operation and maintenance (O/M) manual for equipment operation and maintenance, spare parts preparation, reagents storage and treatment, liquid and solid laboratory wastes treatment and others.
2)	Activity 2-2	To implement hands-on trainings in equipment operation and maintenance, reagents storage and treatment, liquid and solid laboratory wastes treatment and others.
3)	Activity 2-3	To provide necessary assistance and guidance to prepare Directorates' budget plan for regular monitoring.
<b>Output-3</b>		<b>Environmental analysis data is accumulated and properly managed.</b>
1)	Activity 3-1	To design the monitoring record formats for laboratories and for General Commission for Environmental Affaires (GCEA) in MOLAE.
2)	Activity 3-2	To compile monitoring records in each Directorate.
3)	Activity 3-3	To send the monitoring records from Directorates to GCEA in MOLAE.
<b>Output-4</b>		<b>Laboratory staff is able to formulate an environmental monitoring plan specifying parameters required.</b>
1)	Activity 4-1	To conduct preliminary pollution source inventory surveys.
2)	Activity 4-2	To specify monitoring sites and their parameters.
3)	Activity 4-3	To formulate the laboratory operation and maintenance manual (O/M manual).
4)	Activity 4-4	To provide necessary assistance and guidance to integrate the existing environmental monitoring guidelines into a standard for all laboratories.
<b>Output-5</b>		<b>Results and data acquired by the Project is open to and shared with the citizens of the target Directorates. Staff of the target Directorates is able to formulate its action plan for public awareness and environmental education.</b>
1)	Activity 5-1	To conduct preliminary survey on activities regarding to environmental education and public awareness in each Governorate.
2)	Activity 5-2	To formulate textbooks, manuals, and pamphlets for environmental education.
3)	Activity 5-3	To implement seminars and workshops targeted for educational institutions and NGOs and so forth.
4)	Activity 5-4	To enhance the cooperation among organizations and/or institutions regarding to environmental education in each Governorate.

### 1.3 Organization Chart of GCEA

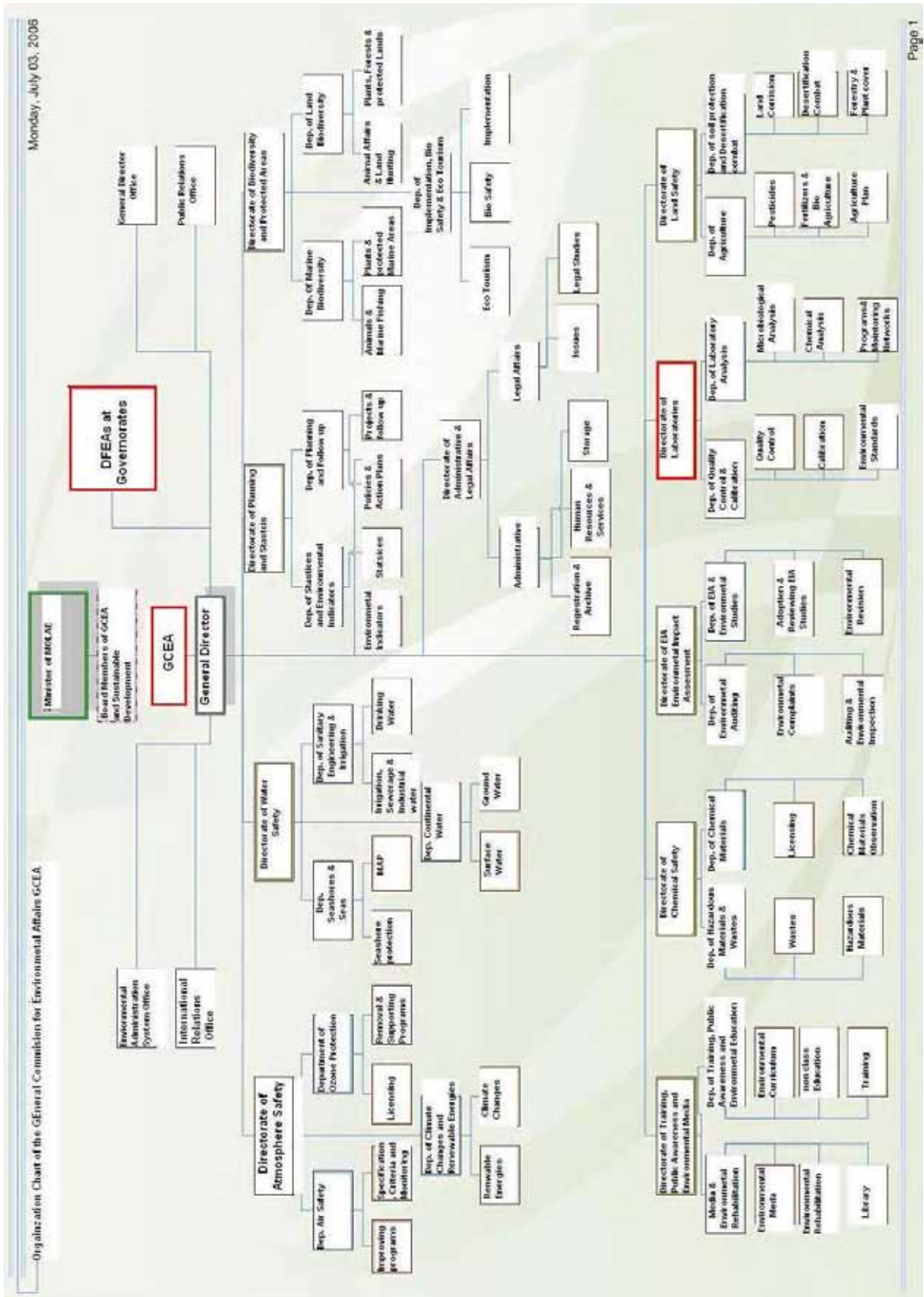
The organization chart of GCEA is shown in the next page.

### 1.4 Project Design Matrix (PDM) of the Project

An original Project Design Matrix (PDM) and a tentative Plan of Operation (PO) in accordance with the Record of Discussion (R/D) agreed on 9 September, 2004 were shown below.

### 1.5 Overall Work Flow of the Project

The duration period of the Project is for three years, which was started in December 2004 and terminated in December 2007. An overall work flow of the Project is shown below.



## Organization Chart of GCEA

## Original Project Design Matrix (PDM) Based on R/D on 9 Sept. 2004 (1/3)

## Annex-6 Tentative Project Design Matrix (PDM)

Project Name: Capacity Development on Environmental Monitoring of Directorates for Environmental Affairs in Governorates in Syrian Arab Republic  
 Target Area: 14 Governorates (different target level is targeted) Target Group: -seventy-six (76) staff of the Directorates and MOAE  
 -41 (about 300) the staff of the Directorates and MOAE  
 -attendees for seminars and workshops held by the Directorates  
 -17 million inhabitants of Syria,  
 especially 9.2 million inhabitants of Damascus, Aleppo, and Homs Governorates

Date of Issue: 13 August 2004

Project Duration: from January 2005 to January 2008 (3 years)

Version No.: for R/D attachment

Overall Goal	Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Environmental monitoring system and publication of the monitoring results are introduced and disseminated to all the Directorates.	1. All the Directorates conduct monitoring of air on regular basis according to the monitoring plan formulated by themselves by five years after the completion of the project. 2. Roles for the national monitoring system are properly allocated among the Directorates. (reference system) 3. Results of the monitoring is continuously issued and opened to the public as an annual report at all Governorates. 4. Results of the monitoring is issued and opened to the public as an annual report at the national level.	1. Analysis technology level to be targeted is as follows: ■ Damascus : (water) chemical and biological analysis level (air) basic sampling level (manual) ■ Aleppo and Homs : (water) basic analysis level, (air) basic sampling level (manual) ■ other 11 Directorates: (water) manual sampling level (air) not included to the project 2. The target Directorates conduct monitoring of water and air on regular basis according to the monitoring plan formulated by themselves 3. Activities for public awareness are implemented in four (4) Directorates at least out of fourteen (14) Directorates. 4. Monitoring results are issued and continuously opened to the public as an annual report at Governorate level.	1. Monitoring records kept by the GCEA, MOAE. 2. Annual report issued by all Directorates. 3. Annual report issued by the GCEA, MOAE.	The Syrian government keeps its policy support for environmental protection.
<b>Project Purpose</b> The target Directorates for Environmental Affairs in Governorates are capable to introduce and conduct regular monitoring of required parameters for water and air quality according to the monitoring plan formulated by the Directorates themselves and to implement activities for public awareness including publication of the monitoring results.			1. Monitoring records kept by the target Directorates and GCEA. 2. Annual report issued by the target Directorates.	The Syrian government keeps its policy support to provide staff, equipment and budget to the rest of the Directorates
<b>Outputs</b> In the target Directorates: 1. Technical level of laboratory staff concerning environmental sampling and analysis is improved.		1-1 All laboratory staff conduct environmental monitoring according to the SOP compiled by the project by three years after the commencement of the project. 1-2 All laboratory staff reach the grade B* level on monitoring items in charge by three years after the commencement of the project. 1-3 50% of laboratory staff reach the grade A* level on monitoring items in charge by three years after the commencement of the project.	1-1 Environmental monitoring records 1-2 Training record 1-3 Training record	Execution instructions are promulgated.

## Original Project Design Matrix (PDM) Based on R/D on 9 Sept. 2004 (2/3)

<p>2. Laboratories are properly managed by laboratory staff themselves.</p>	<p>2-1 Equipment in laboratories are properly operated and maintained according to the o/m manual compiled by the laboratory staff by three years after the commencement of the project.</p> <p>2-2 Spare parts and consumable materials management system is established by three years after the commencement of the project.</p> <p>2-3 Chemical reagents are properly stored and cared according to the o/m manual by three years after the commencement of the project.</p> <p>2-4 Liquid and solid wastes from laboratory are properly treated according to the o/m manual by three years after the commencement of the project.</p> <p>2-5 Each Directorate prepares its budget plan for regular monitoring.</p>	<p>2-1 O/m record</p> <p>2-2 Spare parts &amp; suppliers list</p> <p>2-3 O/m record</p> <p>2-4 O/m record</p> <p>2-5 Annual budget of Directorates</p>	<p>3. Environmental analysis data is accumulated and properly managed.</p>	<p>3-1 Data file management record</p>	<p>4. Laboratory staff is able to formulate an environmental monitoring plan specifying parameters required.</p>	<p>4-1 Monitoring guideline</p> <p>4-2 Laboratory operation and maintenance manual (o/m manual)</p>	<p>5. The results and data acquired by the Project is open to and shared with the citizens of the target Directorates. Staff of target Directorates is able to formulate its action plan for public awareness and environmental education.</p>	<p>5-1 Report of preliminary survey at each governorate</p> <p>5-2 List of activity materials</p> <p>5-3 Report of seminars and workshops</p> <p>5-4 Report or minutes of meeting</p>	<p>Important Assumptions</p> <p>Laboratory staffs trained by the project stay in laboratories and keep working on the environmental monitoring.</p> <p>Agents/manufactures timely provide spare parts for the equipment.</p>
<p>Activities</p> <p>1.1 Completion of the SOP for samplings, analysis, interpretation, evaluation, data filing and reporting.</p> <p>1.2 Training in theory for making monitoring plans, sampling, analysis, interpretation, evaluation, data filing and reporting.</p> <p>1.3 Hands-on trainings in sampling, pretreatment, analysis, interpretation, evaluation, data filing and reporting.</p> <p>1.4 On-site OJT in sampling, analysis, interpretation, evaluation, data filing and reporting.</p>	<p>Narrative Summary</p>	<p>Inputs</p> <p>Syrian Side Inputs</p> <p>(1) Land, building, laboratories, office space and other necessary facilities for the project.</p> <p>(2) Assignment of counterparts and administrative personnel.</p> <p>(3) Running expenses for the implementation of the project.</p> <p>Japanese Side Inputs</p> <p>(1) Dispatch of experts team</p> <p>(2) Provision of equipment</p>	<p>Important Assumptions</p>						

## Original Project Design Matrix (PDM) Based on R/D on 9 Sept. 2004 (3/3)

<p>2.1 Completion of the laboratory o/m manual for equipment operation and maintenance, spare parts preparation, reagents storage and treatment, liquid and solid laboratory wastes treatment and others.</p> <p>2.2 Hands-on trainings at equipment operation and maintenance, reagents storage and treatment, liquid and solid laboratory wastes treatment and others.</p> <p>2.3 Provide necessary assistance and guidance to prepare Directorates' budget plan for regular monitoring.</p> <p>3.1 Design the monitoring record formats for laboratories and for the GCEA in the MOLAE.</p> <p>3.2 Compile monitoring records in each Directorate.</p> <p>3.3 Send the monitoring records from Directorates to the GCEA in the MOLAE.</p> <p>4.1 Conduct preliminary pollution source inventory surveys.</p> <p>4.2 Specify monitoring sites and their parameters.</p> <p>4.3 Formulate the environmental monitoring plan, specifying parameters and monitoring sites in respective laboratory.</p> <p>4.4 Provide necessary assistance and guidance to integrate the existing environmental monitoring guideline into a standard for all laboratories.</p> <p>5.1 To conduct preliminary survey on activities regarding to environmental education and public awareness in each governorate</p> <p>5.2 To formulate textbooks, manuals, and pamphlets for environmental education.</p> <p>5.3 To implement seminars and workshops targeted for educational institutions and NGOs and so forth.</p> <p>5.4 To enhance the cooperation among organizations and/or institutions regarding to environmental education in each governorate (ex. to implement periodical meeting)</p>	<p>Pre-conditions</p> <p>1. Appropriate number of laboratory staff who have chemical background are assigned in the target Directorates for Environmental Affairs in Governorates.</p> <p>2. Laboratory spaces are prepared in the target Directorates for Environmental Affairs in Governorates.</p> <p>3. Adequate waste water treatment plants shall be prepared before starting laboratory chemical analysis training in the target Directorates for Environmental Affairs in Governorates.</p>
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Note:

1. \*Grade A: be able to analyze samples, evaluate the data, and determine them on his/her own.
2. \*Grade B: be able to analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

Abbreviations: MOLAE: the Ministry of Local Administration and Environment  
 Directorate: Directorate for Environmental Affairs in Governorate  
 GCEA: General Commission for Environmental Affairs, MOLAE  
 SOP: Standard Operation Procedures  
 o/m: operation and maintenance  
 OJT: On-the-Job Training

## Tentative Plan of Operation (PO) Based on R/D on 9 Sept. 2004 (1/2)

## ANNEX-7 Tentative Plan of Operation

Project Name: Capacity Development on Environmental Monitoring of Directorates for Environmental Affairs in Governorates in Syrian Arab Republic

Duration: 3 years (from January 2005 until January 2008)

Target Areas: 14 Governorates

Target Group: seventy-six (76) staff of the Directorates and MOLAE

Version: R/D-financing (September 2004)

-all the staff of the Directorates and MOLAE (about 300 personnel)

-attendants for seminars and workshops held by the Directorates

-17 million inhabitants of Syria, especially 9.2 million inhabitants of Damascus, Aleppo, and Hama Governorates

Project Purpose: The target Directorates for Environmental Affairs in Governorates are capable to introduce and conduct regular monitoring of required parameters for water and air quality according to the monitoring plan formulated by the Directorates themselves and to implement activities for public awareness including publication of the monitoring results.

Outputs	Activities	Expected Results	Japanese Experts	Syrian CP	Calendar Year											
					2004			2005			2006			2007		
					IV	III	II	IV	III	II	IV	III	II	IV	III	II
Pre-conditions	1 Assignment of laboratory staff for the Project	76 of staff with required background														
	2 Preparation of Laboratory spaces	Laboratory with the adequate floor area	Water quality analysis	Water quality analysis												
	3 Installation of wastewater treatment plant	Installation of waste water treatment plant	Water quality analysis	Water quality analysis												
	4.1 Completion of the SOP for sampling, analysis, interpretation, evaluation, data filing and reporting.	Standard Operation Procedures (SOP)	Environmental admin. Water quality analysis Air quality analysis Data Management	Environmental admin. Water quality analysis Air quality analysis Data Management												
Output 1 Technical level of laboratory staff concerning environmental sampling and analysis is improved.	4.2 Training in theory for making monitoring plans, sampling, analysis, interpretation, evaluation, data filing and reporting.	Training materials Number of trainings conducted Number of participants	Environmental admin. Water quality analysis Air quality analysis Data Management	Environmental admin. Water quality analysis Air quality analysis Data Management												
	4.3 Hands-on trainings in sampling, pretreatment, analysis, interpretation, evaluation, data filing and reporting.	Training materials Number of trainings conducted Number of participants	Environmental admin. Water quality analysis Air quality analysis Data Management	Environmental admin. Water quality analysis Air quality analysis Data Management												
	4.4 On-site on-the-job (OJT) training in sampling, analysis, interpretation, evaluation, data filing and reporting.	Training materials Number of trainings conducted Number of participants	Environmental admin. Water quality analysis Air quality analysis Data Management	Environmental admin. Water quality analysis Air quality analysis Data Management												
	2.1 Completion of the laboratory operation and maintenance (om) manual for equipment operation and maintenance, spare parts preparation, reagents storage and treatment, liquid and solid laboratory wastes treatment and others.	OM manual	Environmental admin. Water quality analysis Air quality analysis	Environmental admin. Water quality analysis Air quality analysis												
Output 2 Laboratories are properly managed by laboratory staff themselves.	2.2 Hands-on trainings at equipment operation and maintenance, reagents storage and treatment, liquid and solid laboratory wastes treatment and others.	Number of trainings conducted Number of participants	Environmental admin. Water quality analysis Air quality analysis	Environmental admin. Water quality analysis Air quality analysis												
	2.3 Provide necessary assistance and guidance to prepare Directorates' budget plan for regular monitoring.		Environmental admin. Water quality analysis Air quality analysis	Environmental admin. Water quality analysis Air quality analysis												

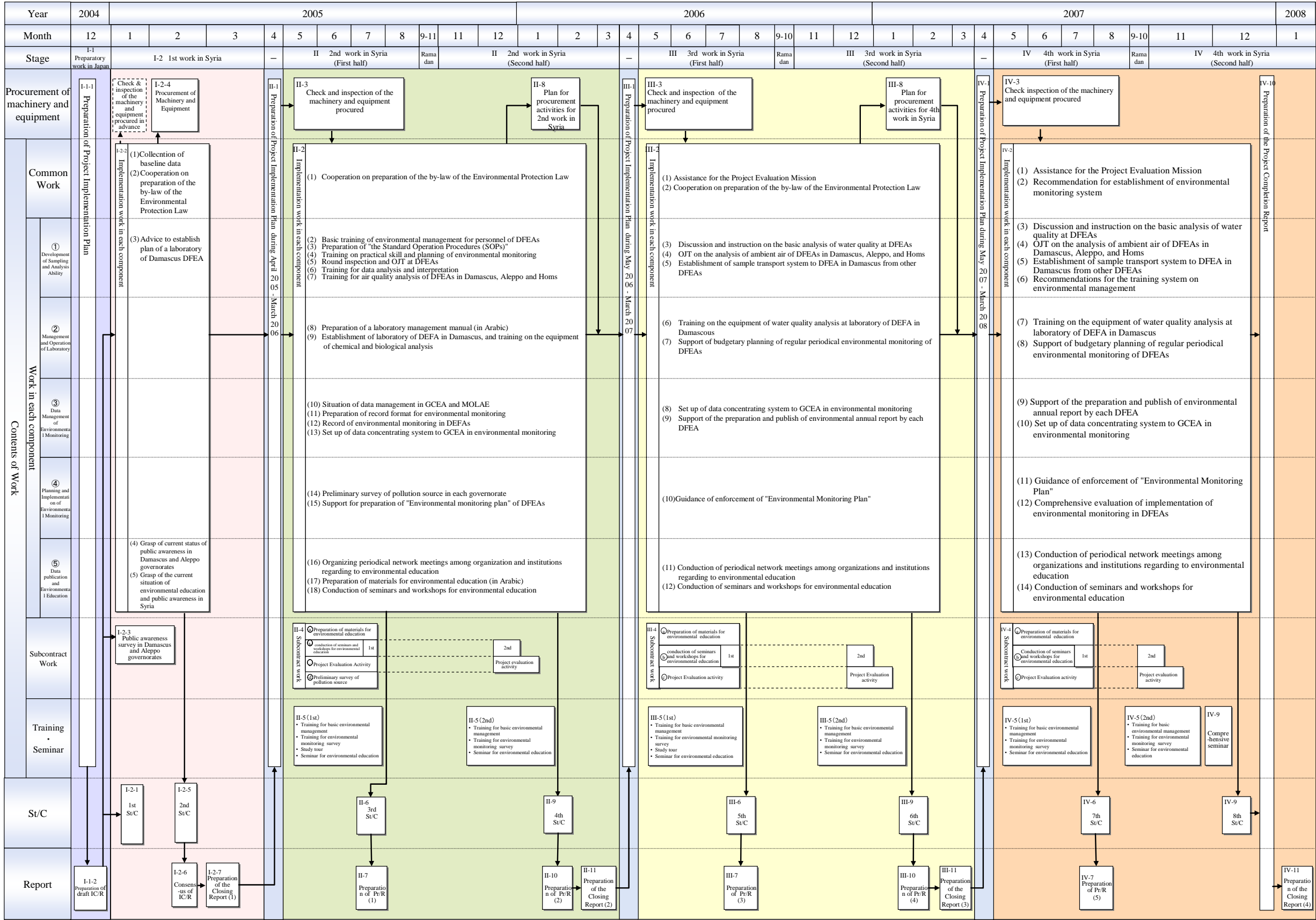


**Tentative Plan of Operation (PO) Based on R/D on 9 Sept. 2004 (2/2)**

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CIP: Contingent Personnel  
 MOJAE: Ministry of Local Administration and Environment  
 GCEA: General Council for Environmental Affairs, MOJAE  
 SOP: Standard Operating Procedures  
 O&M: Operation & Maintenance





Overall Flow of the Project

## 1.5 Organization

### (1) Steering Committee

In the 2nd St/C meeting held on 23 February 2005, it is agreed that the St/C should be held at least once a year and whenever necessity arises in order to fulfill the following functions. The chairperson of St/C is the Minister of MOLAE, and its members are listed below.

- 1) To formulate the annual operational work plan of the Project,
- 2) To review the result of the annual operational work plan and the progress of the Project,
- 3) To review and exchange opinions on major issues that arises during the implementation of the Project, and
- 4) To discuss the inter-ministerial matters arising in the course of the Project.

#### List of Members of St/C (as of December 2007)

Steering Committee (St/C)		
	Name	Position
Syrian side	1. Eng. Helal Al-Atrash	Minister of MOLAE
	2. Eng. Imad Hassoun	Deputy Minister for Environmental Affairs
	3. Dr. Basher Al Sabhan	Governor of Damascus
	4. Dr. Akram Khouri	General Director of GCEA, MOLAE
	5. Dr. Mahmmoud Saleh Soleiman	Director of the Center of the Environmental Studies (CES)
	6. Eng. Atef Deeb	Director of Combating Pollution of Public Water, Ministry of Irrigation
	7. Eng. Shurahbeel Hijazi	Director of Central Laboratory, Ministry of Housing and Construction
	8. Eng. Amal Hasan	Department for Environment, Ministry of Industry
	9. Dr. Mahmmoud Al-Haffar	Department for Environment, Ministry of Transport
	10. Dr. Mahmmoud Krayem	Director of Directorate of Communicable and Environmental Disease, Ministry of Health
	11. Dr. Omar Abou Awn	Ministry of Education
Japanese side	1. JICA Experts	JICA Expert Team
	2. Ms. Akiko Tomita	Resident Representative, JICA Syria Office

Note: A person shaded in the list is a chairperson of the Steering Committee.  
The Embassy of Japan and the JICA Headquarters attend as overseers.

### (2) Technical Committee

In the 2nd St/C meeting held on 23 February 2005, it was agreed that the Technical Committee (T/C) consisted of working groups in charge for Laboratory, Water Quality, Air Quality, and Environmental Education (E&E) and Public Awareness, and it should be held at least quarterly and whenever necessity arises in order to fulfill the following functions. The chairperson of T/C was the General Director of GCEA (the Project Manager), and the members T/C are listed below. The chairperson invited appropriate members in the list in accordance with the topics to be discussed.

- 1) To formulate the monthly operational work plan and contents of activities of the Project in line with the annual operational work plan of the Project,
- 2) To review the progress of the Project as well as the operational work plan,

- 3) To evaluate the achievement of the objectives,
- 4) To exchange views on issues arising from or in connection with the Project, and
- 5) To conduct the working group activities.

### List of Members of T/C (as of December 2007)

Technical Committee (T/C)		
	Name	Position
Syrian side	1. Dr. Akram Khouri	General Director of GCEA, MOLAE
	2. Eng.Reem Aed Raboh	Director of Directorate for Water Safety
	3. Eng. Fuad Alok	Director of Directorate for Chemical Safety
	4. Eng.Khaled Kilali	Director of Directorate for Climate and Atmosphere
	5. Dr. Nader Ghazi	Director of Directorate for Awareness and Environmental Information
	6. Eng.Erfan Ali	Director of Directorate for Information and Systems
	7. Dr. Yasin Moalla	Director of Directorate for Laboratories
	8. Mr.Mohammad Albakri	Director of Directorate for Planning and Follow-up
	9. Eng.Bassam Khier Biek	Director of Damascus Directorate
	10. Eng.Thar'el Dief	Director of Damascus Countryside Directorate
	11. Mr. Ahmad Kablawee	Director of Dara'a Directorate
	12. Mr.Hamzah Solayman	Director of Quneitra Directorate
	13. Dr. Mo'tasem Al-Abed	Director of Sweida Directorate
	14. Ch. Solayman Kalo	Director of Homs Directorate
	15. Ch.Ali Jwyed	Director of Hama Directorate
	16. Eng.Jomana Hasan	Director of Idleb Directorate
	17. Eng.M. Saeed Naffous	Director of Aleppo Directorate
	18. Eng.Lama Al-Ahmad	Director of Latakia Directorate
	19. Eng.Hasan Morjan	Director of Tartous Directorate
	20. Eng.Shams Aljaseem	Director of Rakkah Directorate
	21. Eng.Reem Shaheen	Director of Deir ez Zor Directorate
	22. Raeefeh Asper	Director of Hasakeh Directorate
	23. Dr. Marwan Dimashki	Director of Environmental Research Laboratory, HIAST
	24. Dr.Mohammad Saeed Al-Masri	Atomic Energy Commission
	25. Eng. Mayadah Kodmani	Head of the Central Laboratory, Ministry of Irrigation
	26. Dr. Mohammad Rateb Salam	Director of the Central Laboratory, Ministry of Economy and Trade
Japanese side	1. JICA Experts	JICA Expert Team
	2. Ms. Akiko Tomita	Resident Representative, JICA Syria Office

Note: A person shaded in the list is a chairperson of the Technical Committee.

### (3) Counterparts (C/Ps)

The Syrian side assigned the General Director of GCEA as the Project Director of the Project, and other 20 persons in charge for the Project administrative management as shown below.

### C/P for Project Administrative Management

	Position in the Project	#	Position in MOLAE
1	Project Director	1	General Director of GCEA
2	Project Manager	1	Director of Directorate for Laboratories
3	Director for basic analysis for water quality	1	Director of Directorate for EIA
4	Director for chemical and biological analysis	1	Director of Directorate for Chemical Safety
5	Director for air quality analysis	1	Director, Directorate for Air Safety
6	Director for environmental education	1	Director, Directorate for Awareness and Environmental Information
7	Director for data management	1	Director, Directorate for Information and System
8	Sub-site Directors	14	Directors of 14 Target DFEAs

From the commencement of the Project, 184 personnel have assigned as the technical C/P. At present, 122 persons are assigned to the Project as technical C/P excluding double counting as shown below. It means that around 30 % of CP (51 persons) have left for the Project so far mainly due to military service, maternity, and salary reasons. At first, 45 persons were listed in R/D, but only 33 persons currently remain the Project. A rest of 77 persons has been newly assigned after commencement of the Project for filling vacancies and recognizing importance of the Project. The latest technical C/P list is shown in the following table.

**Number of Technical C/P for the Project (as of Dec. 2007)**

DFEA		Number of C/P assigned to the Project				
		Net Total	Water (Output 1~4)	Air (Output 1~4)	Data management	Public Awareness
1	Damascus	19	13 (3)	3	3(1)	3
2	Damascus Countryside	15	15(2)	-	2	-
3	Aleppo	7	5(2)	4	1(1)	1(1)
4	Homs	16	10 (3)	6	3	-
5	Hama	6	6	-	1(1)	-
6	Lattakia	14	8	-	2	4
7	Deir ez Zor	4	4	-	1(1)	-
8	Idleb	6	4	-	2	-
9	Hasakeh	5	3	-	1	1
10	Rakka	3	3	-	-	-
11	Sweida	10	8	-	2	-
12	Dara'a	6	5	-	1	-
13	Tartous	9	6	-	1(1)	3
14	Quneitra	3	3	-	1(1)	-
Total including double counting			93 (10)	13	20 (5)	12(1)
Net Total		122	93	13	15	11

Note: ( ) is double counted.

#### (4) JICA Expert Team

The JICA Expert Team consists of 8 members as listed below. The assignment schedule for the JICA Expert Team (JET) is shown in the following table.

**List of Members of the JICA Expert Team (as of Dec. 2007)**

Name	Assignment
1. Mr. Yoichi IWAI	Chief Adviser/ Environmental Management
2. Dr. Ryunan MATSUE	Water Quality Analysis (Basic Analysis)
3. Mr. Shinsuke SATO	Water Quality Analysis (Chemical and Biological Analysis-1)
4. Mr. Kazuki SAKAE	Water Quality Analysis (Chemical and Biological Analysis-2)
5. Mr. Kouji KIMURA	Water Quality Analysis (Heavy Metal)
6. Mr. Minoru HIRAO	Air Quality Analysis
7. Mr. Tomoo AOKI	Environmental Education/Public Awareness
8. Mr. Keiichi TAKAHASHI	Data Management/Coordinator (Procurement Management)

The assignment schedule for the JICA Expert Team is shown in figure of the next page.

## Counterparts List of the Project (as of December 2007)

No.	Name	Authority	In Charge	Position	R/D	Present	Remarks
1	Dr. Yasin Moa'alla	GCEA	Chief of Counterpart	Director, Directorate of Laboratories	X	O	
2	Mr. Ahmad Al Mohammad	GCEA	Water Quality Analysis	Staff, Directorate of Laboratories	X	X	
3	Ms. Fathia Mohammad	GCEA	Water Quality Analysis	Chief, Directorate of Laboratories	X	O	
4	Ms. Fayzeh Hoijeh	GCEA	Public awareness	Staff, Directorate of Laboratories	X	X	Moved out in Nov. 2006
5	Ms. Khozama Abo Saab	GCEA	Water Quality Analysis	Directorate of Laboratories	O	O	
6	Mr. Mouhamed younes	GCEA	Water Quality Analysis	Directorate of Laboratories	X	O	Moved in Jan. 2006
7	Mr. Shaka Soliman	GCEA	Data Management	Head of Chemical Safety Dept.	X	O	
8	Ms. Alia Badran	GCEA	Data Management	staff	X	O	
9	Mr. Molhem Darwish	GCEA	Data Management	staff	X	O	
10	Mr. Maan Alabli	GCEA	Public awareness	Staff	X	O	Moved in May. 2006
11	Ms. Gloria Mousa	GCEA	Public awareness	Staff	X	O	Moved in May. 2006
12	Ms. Riem Sadr Alden	Damascus DFEA	Heavy metal(Atomic absorption)	Lab chief	X	O	
13	Ms. Iman Sulayman	Damascus DFEA	Heavy metal(Atomic absorption)	Staff	X	O	
14	Ms. Sohad Sida	Damascus DFEA	Heavy metal(Atomic absorption)	Staff	X	O	
15	Mr. Tallat Harb	Damascus DFEA	Heavy metal(Atomic absorption)	Staff	X	O	
16	Mr. Samer Khouri	Damascus DFEA	Heavy metal(Atomic absorption)	Staff	X	O	
17	Mr. Samer Mokbel	Damascus DFEA	Chemical and Biological Analysis/Basic water quality	Staff	X	O	
18	Ms. Layla Al Durra	Damascus DFEA	Chemical and Biological Analysis/Basic water quality	Staff	O	O	
19	Ms. Assma Altabakh	Damascus DFEA	Chemical and Biological Analysis/Basic water quality	Staff	X	O	
20	Ms. Amra Alhamwy	Damascus DFEA	Chemical and Biological Analysis	Staff	X	O	Moved in Jul. 2006
21	Ms. Inas Webby	Damascus DFEA	Chemical and Biological Analysis	Staff	X	O	
22	Ms. Raniya Sulayman	Damascus DFEA	Chemical and Biological Analysis	Staff	O	O	
23	Mr. Khaled Kasem	Damascus DFEA	Basic water quality	Staff	O	X	Moved out in Nov. 2005
24	Mr. Moneer Mostaf	Damascus DFEA	Air Quality Analysis	Staff	X	O	
25	Ms. Firyal Al Husayni	Damascus DFEA	Air Quality Analysis	Staff	O	O	
26	Ms. Omaira Younes	Damascus DFEA	Air Quality Analysis	Staff	O	O	
27	Ms. Hiba Adra	Damascus DFEA	Air Quality Analysis	Staff	X	O	Moved in Sep. 2007
28	Ms. Rafah Zaghmout	Damascus DFEA	Air Quality Analysis	Staff	X	X	Maternity holiday
29	Mr. Moa'taz Abdulla	Damascus DFEA	Air Quality Analysis	Staff	X	O	
30	Mr. Basasam Fares	Damascus DFEA	Air Quality Analysis	Staff	X	O	
31	Mr. Almuthanna Ghanem	Damascus DFEA	Data Management	Data management chief	X	O	
32	Ms. Hanan Sama'n	Damascus DFEA	Data Management	Staff	O	O	
33	Ms. Yara Ismaeel	Damascus DFEA	Data Management	Staff	X	O	Moved in May. 2007
34	Ms. Halah Khouri	Damascus DFEA	Public Awareness	Staff	X	O	Moved in Dec. 2005
35	Ms. Silva Ardahaljian	Damascus DFEA	Public Awareness	Staff	X	O	
36	Ms. Katia Farah	Damascus DFEA	Public Awareness	Staff	X	X	Moved out in Dec. 2005
37	Ms. Rasha Mehrez	Damascus DFEA	Public Awareness	Staff	X	O	
38	Ms. Maria Tama	Damascus DFEA	Public Awareness	Staff	X	X	Moved out in Jun. 2006
39	Mr. Thaer Daif	Damascus Countryside DFEA	Public Awareness	Director	O	O	

No.	Name	Authority	In Charge	Position	R/D	Present	Remarks
40	Ms. Muna Al Joma'a	Damascus Countryside DFEA	Water Quality Analysis	Laboratory chief	X	O	
41	Mr. Malek Soliman	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	O	Moved in Dec. 2005
42	Ms. Mona Sabrogy	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	One year vacation
43	Mr. Muneer Sarhan	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	Moved out into EIA Dept.
44	Mr. Hosam Eddin Al-Barodi	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	Moved out in Nov. 2005
45	Ms. Shireen Awad	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	Moved out in Sep. 2005
46	Ms. Nisreen Dawoud	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	Moved out in Sep. 2005
47	Ms. Lina Yousef	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun. 2006
48	Mr. Eyad Hmayeer	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	Moved out in Sep. 2006
49	Mr. Ammar Hassan	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	Military service
50	Mr. Mohammed Hassan Diab	Damascus Countryside DFEA	Water Quality Analysis/Data management	Staff	X	X	Moved out in Aug. 2005
51	Mr. Nader Tayem	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	X	Military service
52	Ms. Rania Karawi	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	O	Moved in Mar. 2006
53	Ms. Hana Bairoti	Damascus Countryside DFEA	Water Quality Analysis	Staff	X	O	Moved in Aug. 2007
54	Ms. Dana Fuad Altahan	Damascus Countryside DFEA	Data Management	Staff	X	O	Moved in Jun. 2006
55	Mr. Moustafa Khazma	Damascus Countryside DFEA	Public Awareness	Staff	X	O	
56	Mr. Ali Kasem Shaweesh	Damascus Countryside DFEA	Data Management/ Water Quality Analysis	Staff	X	X	Military service
57	Mr. Ahmad Mo'ala Ahmad	Aleppo DFEA	Water Quality Analysis	Laboratory chief	O	O	
58	Mr. Mohammad Hammadeh	Aleppo DFEA	Water Quality Analysis	Staff	X	O	Moved in Dec. 2005
59	Mr. Mohammad Rasheed	Aleppo DFEA	Water Quality Analysis	Staff	X	X	Military service
60	Ms. Hiba Hudari	Aleppo DFEA	Water Quality Analysis	Staff	X	O	Moved in Nov. 2007
61	Mr. Mahmoud Hassan Essmae'l	Aleppo DFEA	Air Quality Analysis	Staff	O	O	
62	Ms. Khlood Awayed	Aleppo DFEA	Air Quality Analysis	Staff	X	O	
63	Mr. Abd Albaset Isa	Aleppo DFEA	Air Quality Analysis	Staff	X	O	Moved in Nov. 2007
64	Ms. Donia Gharieb	Aleppo DFEA	Air Quality Analysis	Staff	O	O	
65	Mr. Ilia Wasel	Aleppo DFEA	Air Quality Analysis/Data management	Staff	O	O	
66	Ms. Waffa Kraim	Aleppo DFEA	Public Awareness	Staff	X	O	Moved in Jul. 2005
67	Mr. Muhamed Ali Al Husien	Homs DFEA	Water Quality Analysis/Air Quality Analysis	Laboratory chief	O	O	
68	Ms. Heba Kassab	Homs DFEA	Water Quality Analysis/Air Quality Analysis	Staff	X	X	Moved out in Jan 30. 2007
69	Ms. Itidal Awad	Homs DFEA	Water Quality Analysis/Air Quality Analysis	Mobile lab chief	O	O	
70	Ms. Rasha Jabbour	Homs DFEA	Water Quality Analysis/Data management	Staff	X	O	Moved in Jul. 2005
71	Ms. Nida'a Toghaji	Homs DFEA	Water Quality Analysis/Air Quality Analysis	Staff	X	O	
72	Ms. Lubna Al- Ahmad	Homs DFEA	Water Quality Analysis/Air Quality Analysis	Staff	X	O	Moved in Jul. 2005
73	Ms. Faten Harmoush	Homs DFEA	Water Quality Analysis	Staff	X	O	Moved from DAMC DFEA
74	Ms. Sana Mansour	Homs DFEA	Water Quality Analysis	Head of air quality section	O	O	
75	Ms. Layla Almubaid	Homs DFEA	Water Quality Analysis	Staff	X	O	Moved in Oct. 2007
76	Ms. Ramia Alkhali	Homs DFEA	Water Quality Analysis	Staff	X	O	Moved in Oct. 2007
77	Mr. Abed Alaleem	Homs DFEA	Water Quality Analysis	Staff	X	O	Moved in Oct. 2007
78	Mr. Mahmoud Al yousef	Homs DFEA	Air Quality Analysis	Staff	X	O	Moved in Jun. 2006
79	Ms. Rasha Romia	Homs DFEA	Air Quality Analysis	Staff	X	X	One year vacation
80	Ms. Alisar Kasab	Homs DFEA	Air Quality Analysis	Staff	O	X	Moved out in Aug. 2005

No.	Name	Authority	In Charge	Position	R/D	Present	Remarks
81	Ms. Nisreen Toameh	Homs DFEA	Air Quality Analysis	Staff	X	O	
82	Mr. Mr. Kousi Yousef	Homs DFEA	Air Quality Analysis	Staff	X	O	Moved in Jun, 2007
83	Da'ad Alhasan	Homs DFEA	Air Quality Analysis	Staff	X	X	Moved out in Oct, 2007
84	Ms. Aida Halaweek	Homs DFEA	Data Management/Air quality	Staff	X	O	Moved from Damascus C
85	Ms. Hanan Naffouj	Homs DFEA	Data Management	Staff	O	O	
86	Ms. Leen Norieh	Homs DFEA	Public Awareness	Staff	X	O	
87	Ms. Rana Wardeh	Hama DFEA	Water Quality Analysis	Laboratory chief	O	O	
88	Ms. Hebah Khouri	Hama DFEA	Water Quality Analysis	Staff	O	O	
89	Ms. Reem Kanbar	Hama DFEA	Water Quality Analysis	Staff	O	O	
90	Ms. Yesra Taifour	Hama DFEA	Water Quality Analysis	Staff	X	O	
91	Ms. Nameer Warra	Hama DFEA	Water Quality Analysis/Data Management	Staff	X	O	
92	Ms. Seham Suliman	Hama DFEA	Water Quality Analysis	Staff	X	X	Moved out in April, 2007
93	Ms. Yasmin Haidar	Hama DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun. 2006
94	Mr. Wassim Al Ali	Hama DFEA	Water Quality Analysis	Staff	X	X	Military Service
95	Ms. Lama Ahmad	Lattakia DFEA	Public Awareness	Director	O	O	
96	Ms. Amaal Merhej	Lattakia DFEA	Water Quality Analysis	staff	O	O	
97	Mr. Senan Deeb	Lattakia DFEA	Water Quality Analysis	Staff	X	O	
98	Ms. Hadeel Wannus	Lattakia DFEA	Water Quality Analysis	Staff	X	O	Moved in Dec. 2005
99	Ms. Suzanne Shdod	Lattakia DFEA	Water Quality Analysis	Staff	X	X	Moved out in May, 2007
100	Mr. Wael Jadeed	Lattakia DFEA	Data Management	Staff	O	X	Moved out in Mar. 2006
101	Mr. Rami Ali	Lattakia DFEA	Water Quality Analysis	Staff	X	X	Moved out in Dec. 2005
102	Dr. Ahmad Karah Ali	Lattakia DFEA	Water Quality Analysis	Staff	O	X	Moved out in Jun. 2005
103	Ms. Maya Yasen	Lattakia DFEA	Water Quality Analysis	Staff	X	O	
104	Mr. Thaer Mohamad	Lattakia DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun. 2006
105	Mr. Yamen Salwan	Lattakia DFEA	Water Quality Analysis	Lab chief	X	O	Moved in Jun. 2006
106	Ms. Rana Soufi	Lattakia DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun. 2006
107	Mr. Mouhamed Melhem	Lattakia DFEA	Water Quality Analysis	Staff	X	O	Moved in Sep, 2007
108	Ms. Fatema Armanazi	Lattakia DFEA	Water Quality Analysis	Staff	X	O	Moved in Nov, 2007
109	Ms. Bana Auad	Lattakia DFEA	Data Management	Staff	X	O	
110	Mr. Adel Habib	Lattakia DFEA	Data Management	Staff	X	O	
111	Ms. Ammal Allo	Lattakia DFEA	Public Awareness	Staff	X	O	Moved in Jan, 2007
112	Ms. Awatef Hadad	Lattakia DFEA	Public Awareness	Staff	X	O	Moved in Jan, 2007
113	Ms. Kinda Hadad	Lattakia DFEA	Public Awareness	Staff	X	O	Moved in Jan, 2007
114	Ms. Samah Abbas	Lattakia DFEA	Public Awareness	Staff	X	O	Moved in Jan, 2007
115	Mr. Saher Abdullah	Deir ez Zor DFEA	Water Quality Analysis	Laboratory chief	O	O	
116	Ms. Fathia Moinee	Deir ez Zor DFEA	Water Quality Analysis	Staff	X	O	
117	Mr. Mohammed Ammen Al Kalaf	Deir ez Zor DFEA	Water Quality Analysis	New director of DFEA	X	O	He is assigned as a new director
118	Ms. Ghazwa Matroud	Deir ez Zor DFEA	Water Quality Analysis	Staff	X	X	Moved out in May, 2006
119	Ms. Issra Ibrahim	Deir ez Zor DFEA	Water Quality Analysis	Staff	X	X	Moved out in Jun, 2006
120	Ms. Rania Kalash	Deir ez Zor DFEA	Water Quality Analysis	Staff	X	X	Moved out in Nov, 2006

No.	Name	Authority	In Charge	Position	R/D	Present	Remarks
121	Ms. Rasha Azawi	Deir ez Zor DFEA	Water Quality Analysis	Staff	X	O	
122	Mr. Omar Almala Ali	Deir ez Zor DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun, 2006
123	Ms.Amani Allaji	Deir ez Zor DFEA	Water Quality Analysis	Staff	X	O	Moved in Aug 2007
124	Mr. Sameer Da'boul	Idleb DFEA	Water Quality Analysis	Laboratory chief	O	O	
125	Mr. Eiad Al-Husein	Idleb DFEA	Water Quality Analysis/Public Awareness	Staff	X	X	Moved out in Oct,2007
126	Mr. Mustafa Al-Dghayem	Idleb DFEA	Water Quality Analysis	Staff	O	O	
127	Mr. Suhaib Darwish	Idleb DFEA	Water Quality Analysis	Staff	O	X	Moved out in Nov. 2005
128	Mr. Mustafa Haddad	Idleb DFEA	Water Quality Analysis	Staff	X	O	
129	Mr.Mouhamed felfia	Idleb DFEA	Water Quality Analysis	Staff	X	O	Moved in Feb,2007
130	Mr. Aiman Kahwaji	Idleb DFEA	Data Management	Staff	X	X	Move out in Aug, 2006
131	Mr. Khalid Fashtook	Idleb DFEA	Data Management/Public Awareness	Staff	X	X	Moved out in Nov, 2005
132	Mr. Kais Abazli	Idleb DFEA	Data Management	Staff	X	O	
133	Mr. Khalid Kateeb	Idleb DFEA	Data Management	Staff	X	O	
134	Mr. Nawaf Othman	Hasakeh DFEA	Water Quality Analysis	Laboratory chief	O	O	
135	Mr. George Shabo	Hasakeh DFEA	Water Quality Analysis	Staff	O	O	
136	Mr. Aysar Beniamdeen	Hasakeh DFEA	Water Quality Analysis	Staff	O	O	
137	Mr. Saddam Esmael	Hasakeh DFEA	Water Quality Analysis	Staff	X	X	Moved out in Nov, 2006
138	Mr. Abdulghafour Ismeil	Hasakeh DFEA	Water Quality Analysis	Staff	X	X	Moved out in Jun, 2007
139	Mr. Emad Meslet	Hasakeh DFEA	Data Management	Staff	X	O	
140	Ms. Janet Kivergies	Hasakeh DFEA	Public Awareness	Staff	X	O	
141	Ms. Shamsa Aljasem	Rakka DFEA	Water Quality Analysis/Public Awareness	Director/Laboratory chief	O	O	
142	Mr. Mustafa Al-Abu	Rakka DFEA	Water Quality Analysis	Staff	O	X	Moved out in Oct, 2006
143	Mr. Thani Al -Abed	Rakka DFEA	Water Quality Analysis	Staff	X	O	Moved in Feb. 2006
144	Mr. Nizam Al Ahmad	Rakka DFEA	Water Quality Analysis	Staff	X	X	Moved out in Oct,2007
145	Mr. Mohammed Al-Husein	Rakka DFEA	Water Quality Analysis/Data Management	Staff	O	X	Moved out in Oct,2007
146	Mr. Adeeb Ammouri	Rakka DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun. 2006
147	Mr.Talal Alis	Rakka DFEA	Water Quality Analysis	Staff	X	O	Moved in Oct,2007
148	Mr.Hasan Aloukla	Rakka DFEA	Water Quality Analysis	Staff	X	O	Moved in Nov,2007
149	Mr. Inad Al ouwayyed	Rakka DFEA	Data Management	Staff	X	X	Military Service
150	Mr. Abdulateef Ja'look	Rakka DFEA	Data Management	Staff	X	O	
151	Ms.Omay'ma Al-Sha'ar	Sweida DFEA	Water Quality Analysis	Laboratory chief	O	O	
152	Mr. Samer Al Masri	Sweida DFEA	Water Quality Analysis	Staff	X	O	Moved in Aug. 2005
153	Ms. Amal Swaidan	Sweida DFEA	Water Quality Analysis	Staff	X	O	
154	Mr. Thaar Hamzeh	Sweida DFEA	Water Quality Analysis	Staff	X	O	
155	Ms .Raghad Abu Hasson	Sweida DFEA	Water Quality Analysis	Staff	X	X	
156	Ms. Hana Abu Zaidan	Sweida DFEA	Water Quality Analysis	Staff	X	O	
157	Mr. Humam Abo Raid	Sweida DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun. 2006
158	Mr. Bashar Aljarmakani	Sweida DFEA	Water Quality Analysis	Staff	X	O	Moved in Dec, 2006
159	Ms. Waffa Als Salman	Sweida DFEA	Water Quality Analysis	Staff	X	O	Moved in Mar, 2007
160	Ms. Mervat Al Safadi	Sweida DFEA	Data management	Staff	X	X	Moved out in Dec, 2006
161	Mr. Wael Abu Ganem	Sweida DFEA	Data management	Staff	X	O	Moved in Jul, 2006



No.	Name	Authority	In Charge	Position	R/D	Present	Remarks
162	Ms. Soha Nader	Sweida DFEA	Public Awareness	Staff	X	O	
163	Ms. Majeda Azzam	Sweida DFEA	Public Awareness	Staff	X	X	Moved out in Jul. 2006
164	Ms. Fatima Hariri	Dara'a DFEA	Public Awareness	staff	O	X	Moved out in Sep. 2007
165	Mr. Mohammad Al-hariri	Dara'a DFEA	Water Quality Analysis	Laboratory chief	O	O	
166	Mr. Diea Shabat	Dara'a DFEA	Water Quality Analysis	Staff	X	O	
167	Mr. Ahmad Kablawi	Dara'a DFEA	Water Quality Analysis	Director	O	O	He is named as a new director.
168	Mr. Yousef Shadaideh	Dara'a DFEA	Water Quality Analysis	Staff	X	O	
169	Mr. Mahmoud Aba Zeed	Dara'a DFEA	Water Quality Analysis	Staff	X	O	Moved in Jun. 2006
170	Ms. Fathiya Ahmad	Dara'a DFEA	Data Management	Staff	X	O	
171	Mr. Ateea Zwayda	Dara'a DFEA	Data Management	Staff	X	O	
172	Ms. Rowdaina Al-Ali	Tartous DFEA	Water Quality Analysis	Laboratory chief	O	O	
173	Ms. Dalal Ibrahim	Tartous DFEA	Water Quality Analysis	Staff	O	O	
174	Ms. Sohila Botros	Tartous DFEA	Water Quality Analysis	Staff	O	O	
175	Ms. Lama Harfoush	Tartous DFEA	Water Quality Analysis	Staff	X	O	
176	Ms. Smaher Abdul Rahman	Tartous DFEA	Water Quality Analysis	Staff	X	O	
177	Ms. Ameera Omran	Tartous DFEA	Water Quality Analysis	Staff	O	O	
178	Mr. Kazem Ahmad	Tartous DFEA	Public Awareness	Staff	X	O	
179	Ms. Rania Kaddour	Tartous DFEA	Public Awareness	Staff	X	O	
180	Mr. Allam Ebrahim	Tartous DFEA	Public Awareness	Staff	X	O	
181	Mr. Hamzeh Soliman	Quneitra DFEA	Water Quality Analysis	Director	X	O	
182	Mr. Majed Zaitoun	Quneitra DFEA	Water Quality Analysis	Laboratory chief	X	O	
183	Mr. Ali Ibrahim	Quneitra DFEA	Water Quality Analysis	Staff	O	O	
184	Mr. Bassam Orabi	Quneitra DFEA	Data Management	Staff	X	X	Moved out in Jul. 2005
	Total				# of O=43 (25.4%)	# of O=139 (3.3%)	

Note: O = listed in R/D and currently present, X = not listed in R/D and currently not present (left from the Project)

[illegible]

Note  Work in Syria  Work in Japan

**Assignment Schedule for the JICA Expert Team (updated in May 2007)**

## 2. ACHIEVEMENT OF OUTPUTS

### 2.1 Overall Goal and Project Purpose

According to the Project Design Matrix (PDM) in the Record of Discussion (R/D) in 9 September 2004, overall goal of the project is that “Environmental monitoring system and publication of the monitoring results are introduced at and spread to all the Directorates.” Prospects of the overall goal in the end of the project are shown in the following by the objectively verifiable indicators, which are defined in PDM.

#### Prospects of the Overall Goal

<b>Indicator 1</b>
All the Directorates conduct monitoring of air on regular basis according to the monitoring plan formulated by themselves by five years after the completion of the Project.
<b>Prospects</b>
Air quality monitoring at target 3 DFEAs (DAM, Homs, and Aleppo) in Hot Spot areas is started and first objectives have been achieved. Provisionally GCEA will be able to make a plan to set up the automatic air quality monitoring system in Hot Spot areas and the basic Lab for Air quality monitoring especially PM10 and TSP at other 11 DFEAs within the period of the 10th 5-years National Plan (2006-2010) of environmental sector. Objectives will be mostly achieved within 5 years.
<b>Indicator 2</b>
Roles for the national monitoring system are properly allocated among the Directorates. (reference system)
<b>Prospects</b>
At present, roles for the national monitoring system are allocated GCEA and DFEAs with general demarcation from other concerned ministries. Due to focusing on pollution sources, 14 DFEAs have important roles for the national environmental monitoring system. Strengthening for Lab analysis is carried out to assist the national environmental monitoring system. Although the monitoring technology has been improved to a certain level, technical capacities must be improved even further and on a continuous basis in order for Syria to be able to accurately analyze all of the items in the ware quality and air quality.
<b>Indicator 3</b>
Results of the monitoring is continuously issued and opened to the public as an annual report at all Governorates.
<b>Prospects</b>
Results of water quality and air quality monitoring have been accumulated in 14 DFEAs. It can be said that the reliability of monitoring data should be a pre-condition for information disclosure. Further efforts for internal and external Quality Assurance and Quality Control (QA/QC) activities are required for obtaining official accreditation of the Labs. After that, indispensable information disclosure e.g. environmental annual report and data book will be implemented to open to the public at 14 governorates in the near future.
<b>Indicator 4</b>
Results of the monitoring is issued and opened to the public as an annual report at the national level.
<b>Prospects</b>
Results of water quality and air quality monitoring have been accumulated in 14 DFEAs, and been sent to GCEA. GCEA has responsibility for monitoring data analysis to clarify current environmental situation, to verify effects of countermeasures, and to promote further enforcement for pollution control in accordance with the statement on environmental sector of the 10th 5-years National Plan (2006-2010). Based on the report prepared by GCEA, environmental issues will be discussed in the Government of Syria. After getting approval of the Government, GCEA's information disclosure e.g. environmental annual report and data book will be implemented to open to the public in the near future.

Regarding the accomplishment of the Project purpose, the Project results are summarized below based on the results of the Terminal Evaluation of the Project conducted in July 2007 with up dated result after the Terminal Evaluation.

## Accomplishment of the Project Purpose

### **Project Purpose**

The target Directorates for Environmental Affairs in Governorates are capable to introduce and conduct regular monitoring of required parameters for water and air quality according to the monitoring plan formulated by the Directorates themselves and to implement activities for public awareness including publication of the monitoring results.

### **Indicator 1**

Analysis technology level to be targeted is as follows:

- Damascus: (water) chemical and biological analysis level, (air) basic sampling level (manual)
- Aleppo and Homs: (water) basic analysis level, (air) basic sampling level (manual)
- Other 11 Directorates: (water) manual sampling level, (air) not included to the project

### **Results**

In the field of water quality analysis, all of the target DFEAs have mostly achieved the targeted level, but more actual practices are required in order to improve its reliability. In the field of air quality analysis, all target DFEAs have partly achieved the targeted level especially for preparation of calibration curve, mainly due to shortage of repeating times of training. Details are described in the table below.

#### Achievement of Target Analysis Technology Level at Each Directorates

Directorates	Field	Achievement	Remarks
a Damascus	Water	Mostly	Knowledge acquired through the Project has been prepared in place of SOP's.: pH, temp, color, total dissolved solids (TDS), DO, total suspended solids (SS), COD, BOD, NO <sub>3</sub> , PO <sub>4</sub> , Cl, NH <sub>3</sub> -N, electrical conductivity, and turbidity have been compiled. Compilation of SOP for Chemical and Biological Analysis (CB) has been completed. SOPs for Heavy Metal Analysis: Aluminum, Arsenic, Barium, Cadmium, Chromium, Nickel, Mercury, Iron, Antimony, Copper, Manganese, Zinc, Lead, and Silver have been compiled as well.
	Air	Mostly	Knowledge acquired through the Project has been prepared in place of SOPs.: SOx, NOx, Pb, TSP, PM10, Ozone, Fluorine compound, NH <sub>3</sub> , and Dust fall have been compiled.
b Homs  Aleppo	Water	Mostly	Knowledge acquired through the Project has been prepared in place of SOP's.: pH, temp, color, total dissolved solids (TDS), DO, total suspended solids (SS), COD, BOD, NO <sub>3</sub> , PO <sub>4</sub> , Cl, NH <sub>3</sub> -N, electrical conductivity, and turbidity have been compiled.
	Air	Mostly	Knowledge acquired through the Project has been prepared in place of SOPs.: SOx, NOx, Pb, TSP, PM10, Ozone, Fluorine compound, NH <sub>3</sub> , and Dust fall have been compiled.
	Water	Mostly	Knowledge acquired through the Project has been prepared in place of SOP's.: pH, temp, color, total dissolved solids (TDS), DO, total suspended solids (SS), COD, BOD, NO <sub>3</sub> , PO <sub>4</sub> , Cl, NH <sub>3</sub> -N, electrical conductivity, and turbidity have been compiled.
	Air	Mostly	Knowledge acquired through the Project has been prepared in place of SOPs.: SOx, NOx, Pb, TSP, PM10, Ozone, Fluorine compound, NH <sub>3</sub> , and Dust fall have been compiled.
c Damascus Country-side  Hama  Lattakia Deir ez Zor Idleb Hasakeh Rakka Sweida Dara'a Tartous Quneitra	Water	Mostly	Knowledge acquired through the Project has been prepared in place of SOP's.: pH, temp, color, total dissolved solids (TDS), DO, total suspended solids (SS), COD, BOD, NO <sub>3</sub> , PO <sub>4</sub> , Cl, NH <sub>3</sub> -N, electrical conductivity, and turbidity have been compiled. Compilation of SOP for Chemical and Biological Analysis (CB) has been completed.
	Water	Mostly	Knowledge acquired through the Project has been prepared in place of SOP's.: pH, temp, color, total dissolved solids (TDS), DO, total suspended solids (SS), COD, BOD, NO <sub>3</sub> , PO <sub>4</sub> , Cl, NH <sub>3</sub> -N, electrical conductivity, and turbidity have been compiled.
	Water	Mostly	Ditto
	Water	Mostly	Ditto
	Water	Mostly	Ditto
	Water	Mostly	Ditto
	Water	Mostly	Ditto
	Water	Mostly	Ditto
	Water	Mostly	Ditto
	Water	Mostly	Ditto

### **Indicator 2**

The target Directorates conduct monitoring of water and air on regular basis according to the monitoring plan formulated by themselves.

**Results**

Monitoring activities of water and air quality have been carried out basically on regular basis mostly according to the plan formulated by the Project. Over planning and movement of DFEA office are mainly reasons for low performance. There was no sampling plan on AQ, but C/P did it for training purposes. (Basic Water Quality: BW, Chemical and Biological Water Quality: CB, Heavy Metal: HM, Air Quality: AQ, Data Management: DM, Public Awareness: PA)

**Number of Sampling Data to be Collected as per the Plan and Number of Data Actually Collected  
Between January and December 2006**

Directorates	Field	# of sample to be collected as per the plan: =(a)	# of sample actually collected: =(b)	Ration of (b) to (a) (%)	Remarks
1	Damascus	BW	138	107	
		CB 1	-	7	Sample for training
		HM	-	-	
		AQ	0	29	
2	Damascus Countryside	BW	127	114	90
		CB 2	-	-	Sample for training
3	Aleppo	BW	77	61	79
		CB 2	-	-	Due to movement of DFEA office, sample for training
		AQ	0	133	
4	Homs	BW	216	90	42
		CB 2	-	-	
		AQ	0	98	Sample for training
5	Hama	BW	185	81	44
6	Lattakia	BW	198	114	58
7	Deir ez Zor	BW	71	50	70
8	Idleb	BW	55	50	91
9	Hasakeh	BW	176	46	26
10	Rakka	BW	38	40	105
11	Sweida	BW	94	91	97
12	Dara'a	BW	55	47	85
13	Tartous	BW	42	54	129
14	Quneitra	BW	36	41	114
Total	Water	1,508	1,033	68	
	Air	0	260	-	

**Number of Sampling Data to be Collected as per the Plan and Number of Data Actually Collected  
Between January and December 2007**

Directorates	Field	# of sample to be collected as per the plan: =(a)	# of sample actually collected: =(b)	Ration of (b) to (a) (%)	Remarks
1	Damascus	BW	126	54	45
		CB1	-	10	Sample for training
		HM	98	37	38
		AQ	544	242	44
2	Damascus Countryside	BW	170	224	132
		CB 2	-	2	Sample for training
3	Aleppo	BW	36	23	64
		CB 2	-	2	Due to movement of DFEA office, sample for training
		AQ	444	140	
4	Homs	BW	42	120	286
		CB 2	-	1	Sample for training
		AQ	584	100	17
5	Hama	BW	179	83	46
6	Lattakia	BW	128	103	80
7	Deir ez Zor	BW	77	31	40
8	Idleb	BW	50	32	64
9	Hasakeh	BW	69	65	94
10	Rakka	BW	44	40	91
11	Sweida	BW	74	73	99
12	Dara'a	BW	51	53	104
13	Tartous	BW	69	78	113
14	Quneitra	BW	39	30	77
Total	Water	1,252	1,061	85	
	Air	1,572	482	31	

**Indicator 3**

Activities for public awareness are implemented in four (4) Directorates at least out of fourteen (14) Directorates.

**Results**

Activities for public awareness (PA) have been implemented in 4 priority Governorates as described in the results of Indicators 5.2 and 5.3 in the subsequent section.

**Indicator 4**

Monitoring results are issued and continuously opened to the public as an annual report at Governorates level.

**Results**

Annual reports for the year 2006 have been prepared by all DFEAs and preparation of the reports for the year 2007 is underway. The reports, however, have not been published yet because of no authorization status of lab analysis data.

## 2.2 Achievement of Output-1

According to the Project Design Matrix (PDM) in the Record of Discussion (R/D) in 9 September 2004, the overall target of Output-1 is "Technical level of laboratory staff concerning environmental sampling and analysis is improved". The achievement is summarized in the table below by indicator.

### Summary of Achievement of Output-1

Indicators	Achievement Result (BW: basic water., CB 1 and CB 2: chemical & bio, HM: heavy metal, AQ: air quality)						
1.1 All laboratory staff conducted environmental monitoring according to the SOP completed by the Project by three years after the commencement of the Project	Currently, 95.3% of all lab staff have become able to conduct EMO as shown in the table below. SOP was drafted by JET in 2005-2006. Then, C/Ps have revised it through actual practice considering specific conditions of wastewater from pollution sources. It shows almost full achievement and establishment of the base for monitoring. CB 1 is for Damascus DFEA, and CB 2 is for Damascus Countryside, Homs, and Aleppo DFEAs.						
	Number of lab staff who can conduct EMO according to SOP and its ratio to all the lab staff.						
	Directorates		Field	# of target lab staff = (a)	# of staff who can conduct EMO according to SOP = (b)	Ratio of (b) to (a)	Remarks
	1	Damascus	BW	4	4	100.0	
			CB 1	4	4	100.0	
			HM	5	5	100.0	
			AQ	3	3	100.0	
			All	16	16	100.0	Water + Air
	2	Damascus Countryside	BW	8	8	100.0	
			CB 2	7	5	71.4	
			All	15	13	86.7	BW+CB
	3	Aleppo	BW	3	3	100.0	
			CB 2	2	1	50.0	
			AQ	4	4	100.0	
			All	9	8	88.9	Water + Air
	4	Homs	BW	6	6	100.0	
			CB 2	4	3	75.0	
			AQ	6	6	100.0	
			All	16	15	93.8	Water + Air
	5	Hama	BW	6	6	100.0	
	6	Lattakia	BW	8	8	100.0	
	7	Deir ez Zor	BW	4	4	100.0	
	8	Idleb	BW	4	4	100.0	
	9	Hasakeh	BW	3	3	100.0	
	10	Rakka	BW	3	3	100.0	
	11	Sweida	BW	8	8	100.0	
	12	Dara'a	BW	5	5	100.0	
	13	Tartous	BW	6	6	100.0	
	14	Quneitra	BW	3	2	66.7	
	Total		Water	93	88	94.6	BW, CB, HM
			Air	13	13	100	
			All	106	101	95.3	

Indicators	Achievement Result (BW: basic water., CB 1 and CB 2: chemical & bio, HM: heavy metal, AQ: air quality)					
1.2 All lab staff reach the grade B level by 3 years.  -Grade B=be able to analyze and work out the data, but need decision by the superior to evaluate and determine the data.	Currently, 90.6 % of lab staffs have reached the grade B level already as shown in the table below. This figure also shows the establishment of the base for environmental monitoring. Number of lab staff who have reached the Grade B level and its ratio to all the lab staff					
Directorates		Field	# of target lab staff = (a)	# of staff who have reached Grade B level = (b)	Ratio of (b) to (a) (%)	Remarks
1	Damascus	BW	4	3	75.0	
		CB 1	4	3	75.0	
		HM	5	5	100.0	
		AQ	3	3	100.0	
		All	16	14	87.5	Water + Air
2	Damascus Countryside	BW	8	8	100.0	
		CB 2	7	5	71.4	
		All	15	13	86.7	BW+CB
3	Aleppo	BW	3	3	100.0	
		CB 2	2	1	50.0	
		AQ	4	4	100.0	
		All	9	8	88.9	Water + Air
4	Homs	BW	6	6	100.0	
		CB 2	4	3	75.0	
		AQ	6	6	100.0	
		All	16	15	93.8	Water + Air
5	Hama	BW	6	6	100.0	
6	Lattakia	BW	8	8	100.0	
7	Deir ez Zor	BW	4	4	100.0	
8	Idleb	BW	4	4	100.0	
9	Hasakeh	BW	3	3	100.0	
10	Rakka	BW	3	3	100.0	
11	Sweida	BW	8	7	87.5	
12	Dara'a	BW	5	4	80.0	
13	Tartous	BW	6	5	83.3	
14	Quneitra	BW	3	2	66.7	
Total		Water	93	83	89.2	BW, CB, HM
		Air	13	13	100.0	
		All	106	97	90.6	

1.3. 50% of all lab staff reach the grade A level by 3 years after the commencement of the Project  -Grade A=be able to analyze, evaluate the data, and determine parameters by his/her own.	Currently, 20.8% of lab staff of all DFEAs has reached the grade A level as shown in the table blow. Low achievement is mainly due to leaving B level C/Ps. However, around 22 C/Ps are in A level by the Project. These A level C/Ps should be trainers and train others and new staff after the Project. Number of lab staff who have reached the Grade A level and its ratio to all the lab staff					
Directorates		Field	# of target lab staff = (a)	# of staff who have reached Grade A level = (b)	Ratio of (b) to (a) (%)	Remarks
1	Damascus	BW	4	1	25.0	
		CB 1	4	0	0.0	
		HM	5	1	20.0	
		AQ	3	0	0.0	
		All	16	2	12.5	Water + Air
2	Damascus Countryside	BW	8	2	25.0	
		CB 2	7	0	0.0	
		All	15	2	13.3	BW+CB
3	Aleppo	BW	3	1	33.3	
		CB 2	2	0	0.0	
		AQ	4	1	25.0	
		All	9	2	22.2	Water + Air
4	Homs	BW	6	2	33.3	
		CB 2	4	0	0.0	
		AQ	6	2	33.3	
		All	16	4	25.0	Water + Air
5	Hama	BW	6	2	33.3	
6	Lattakia	BW	8	1	12.5	
7	Deir ez Zor	BW	4	2	50.0	
8	Idleb	BW	4	1	25.0	
9	Hasakeh	BW	3	1	33.3	
10	Rakka	BW	3	0	0.0	
11	Sweida	BW	8	2	25.0	

Indicators	Achievement Result (BW: basic water., CB 1 and CB 2: chemical & bio, HM: heavy metal, AQ: air quality)						
	12	Dara'a	BW	5	1	20.0	
	13	Tartous	BW	6	1	16.7	
	14	Quneitra	BW	3	1	33.3	
Total			Water	93	19	20.4	BW, CB, HM
			Air	13	3	23.1	
			All	106	22	20.8	

## 2.3 Achievement of Output-2

According to the Project Design Matrix (PDM) in the Record of Discussion (R/D) in 9 September 2004, the overall target of Output-2 is "Laboratories are properly managed by laboratory staff themselves". The achievement is summarized in the table below by indicator.

### Summary of Achievement of Output-2

Indicators	Achievement Result (BW: basic water., CB: chemical & bio, HM: heavy metal, AQ: air quality)						
2.1 Equip in labs are properly operated and maintained according to the O/M manual compiled by lab staff by 3 years after the commencement of the Project	The O/M manual was drafted by the JICA Expert Team in 2005 and C/Ps have revised it through actual practice considering specific conditions of their labs. Currently, 84.0 % of the lab staff of all DFEAs is able to operate and maintain the equipment in the lab according to the O/M manual as shown in the table below.						
	Number of lab staff who can operate and maintain equipment in lab according to the manual and overall compliance of the manual at each Directorate.						
	Directorates	Field	# of target lab staff =(a)	# of staff who can O/M equip. in lab according to the manual =(b)	Ratio of (b) to (a) (%)	Remarks	
	1	Damascus	BW	4	3	75.0	
			CB 1	4	3	75.0	
			HM	5	5	100.0	
			AQ	3	3	100.0	
			All	16	14	87.5	Water + Air
	2	Damascus Countryside	BW	8	8	100.0	
			CB 2	7	2	28.6	
			All	15	10	66.7	BW+CB
	3	Aleppo	BW	3	2	66.7	
			CB 2	2	1	50.0	
			AQ	4	4	100.0	
			All	9	7	77.8	Water + Air
	4	Homs	BW	6	6	100.0	
			CB 2	4	3	75.0	
			AQ	6	6	100.0	
			All	16	15	93.8	Water + Air
	5	Hama	BW	6	6	100.0	
	6	Lattakia	BW	8	8	100.0	
	7	Deir ez Zor	BW	4	4	100.0	
	8	Idleb	BW	4	4	100.0	
	9	Hasakeh	BW	3	3	100.0	
	10	Rakka	BW	3	3	100.0	
	11	Sweida	BW	8	7	87.5	
	12	Dara'a	BW	5	5	100.0	
	13	Tartous	BW	6	2	33.3	
	14	Quneitra	BW	3	1	33.3	
	Total		Water	93	76	81.7	BW, CB, HM
			Air	13	13	100.0	
			All	106	89	84.0	



Indicators	Achievement Result (BW: basic water., CB: chemical & bio, HM: heavy metal, AQ: air quality)																																																												
2.2. Spare parts and consumable materials management system is established by 3 years after the commencement of the Project	<p>O/M sheets for spare parts and chemical reagents were prepared at all DFEAs in June 2006 and it has been managed and up dated by the lab chief and lab staff in charge. The O/M sheets for spare parts have been updated as appropriate as shown in the table below.</p> <p style="text-align: center;">Status of establishment of management system at each Directorate</p> <table><tr><th colspan="2">Directorates</th><th>Timing of preparation of O/M sheet</th><th>Updating of record on occasion</th></tr><tr><td>1</td><td>Damascus</td><td>June 2006</td><td>July 2006(oil meter) May 2007(low volume air sampler) July 2007(EC meter)</td></tr><tr><td>2</td><td>Damascus Countryside</td><td>ditto</td><td></td></tr><tr><td>3</td><td>Aleppo</td><td>ditto</td><td></td></tr><tr><td>4</td><td>Homs</td><td>ditto</td><td></td></tr><tr><td>5</td><td>Hama</td><td>ditto</td><td>July 2007(pH meter)</td></tr><tr><td>6</td><td>Lattakia</td><td>ditto</td><td></td></tr><tr><td>7</td><td>Deir ez Zor</td><td>ditto</td><td></td></tr><tr><td>8</td><td>Idleb</td><td>ditto</td><td>Jan 2006(COD meter)</td></tr><tr><td>9</td><td>Hasakeh</td><td>ditto</td><td></td></tr><tr><td>10</td><td>Rakka</td><td>ditto</td><td></td></tr><tr><td>11</td><td>Sweida</td><td>ditto</td><td>July 2007(EC meter)</td></tr><tr><td>12</td><td>Dara'a</td><td>ditto</td><td></td></tr><tr><td>13</td><td>Tartous</td><td>ditto</td><td></td></tr><tr><td>14</td><td>Quneitra</td><td>ditto</td><td></td></tr></table>	Directorates		Timing of preparation of O/M sheet	Updating of record on occasion	1	Damascus	June 2006	July 2006(oil meter) May 2007(low volume air sampler) July 2007(EC meter)	2	Damascus Countryside	ditto		3	Aleppo	ditto		4	Homs	ditto		5	Hama	ditto	July 2007(pH meter)	6	Lattakia	ditto		7	Deir ez Zor	ditto		8	Idleb	ditto	Jan 2006(COD meter)	9	Hasakeh	ditto		10	Rakka	ditto		11	Sweida	ditto	July 2007(EC meter)	12	Dara'a	ditto		13	Tartous	ditto		14	Quneitra	ditto	
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2.3 Chemical reagents are properly stored and cared according to the O/M manual by 3 years after the commencement of the Project	<p>As for chemical reagents, O/M sheets are planned to be updated quarterly. While most of DFEAs update the sheets according to the plan, 2 DFEAs have not been able to do so because of serious staff shortage, etc. In most DFEAs, chemical reagents are properly stored and cared. The JICA Expert Team has observed a case where the reagents that need to be kept under certain temperature are stored outside the refrigerator in a lab room without A/C. Director of the said DFEA plans to provide A/C to lab shortly so that adverse effects on the reagents are expected to be solved.</p> <p style="text-align: center;">Status of storing and caring chemical regents at each Directorate</p> <table><tr><th></th><th>Directorates</th><th>Timing of preparation of O/M sheet</th><th>Frequency of updating of O/M sheet (one time/ 3 months)</th></tr><tr><td>1</td><td>Damascus</td><td>June 2006</td><td>Continued</td></tr><tr><td>2</td><td>Damascus Countryside</td><td>ditto</td><td>Continued</td></tr><tr><td>3</td><td>Aleppo</td><td>ditto</td><td>Not continued (due to serious shortage of staff)</td></tr><tr><td>4</td><td>Homs</td><td>ditto</td><td>Continued</td></tr><tr><td>5</td><td>Hama</td><td>ditto</td><td>Continued</td></tr><tr><td>6</td><td>Lattakia</td><td>ditto</td><td>Continued</td></tr><tr><td>7</td><td>Deir ez Zor</td><td>ditto</td><td>Continued</td></tr><tr><td>8</td><td>Idleb</td><td>ditto</td><td>Continued</td></tr><tr><td>9</td><td>Hasakeh</td><td>ditto</td><td>Continued</td></tr><tr><td>10</td><td>Rakka</td><td>ditto</td><td>Not continued</td></tr><tr><td>11</td><td>Sweida</td><td>ditto</td><td>Continued</td></tr><tr><td>12</td><td>Dara'a</td><td>ditto</td><td>Continued</td></tr><tr><td>13</td><td>Tartous</td><td>ditto</td><td>Continued</td></tr><tr><td>14</td><td>Quneitra</td><td>ditto</td><td>Continued</td></tr></table>		Directorates	Timing of preparation of O/M sheet	Frequency of updating of O/M sheet (one time/ 3 months)	1	Damascus	June 2006	Continued	2	Damascus Countryside	ditto	Continued	3	Aleppo	ditto	Not continued (due to serious shortage of staff)	4	Homs	ditto	Continued	5	Hama	ditto	Continued	6	Lattakia	ditto	Continued	7	Deir ez Zor	ditto	Continued	8	Idleb	ditto	Continued	9	Hasakeh	ditto	Continued	10	Rakka	ditto	Not continued	11	Sweida	ditto	Continued	12	Dara'a	ditto	Continued	13	Tartous	ditto	Continued	14	Quneitra	ditto	Continued
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2.4. Liquid and solid wastes from lab are properly treated according to the lab O/M manual by 3 years after the commencement of the Project	<p>As for treatment of liquid wastes from labs, preparation of “adequate waste water treatment ...before starting laboratory chemical analysis training” is one of the pre-conditions of the Project. This has not been fully satisfied yet.</p> <p>Based on the proposal by the JICA Expert Team, GCEA has purchased wastewater treatment facilities for Damascus DFEA, expecting wastewater from all labs to be treated there. The facilities have not been operational, however, due to technical troubles on unit operation system that the supplier has not been able to fix. In the mean time, the other DFEAs have been storing the liquid wastes in tanks, some of which have been already sent to Damascus DFEA already as shown in the table below.</p> <p>Even in December 2007, it is not improved due to lack of initiative and leadership of GCEA. The JICA Expert Team advised its technical committee in GCEA including several technical suggestions related to consistency of unit operation system.</p> <p style="text-align: center;">Status of treatment of liquid wastes from lab at each Directorate</p> <table><tr><th rowspan="2"></th><th rowspan="2">Directorates</th><th colspan="2">Frequency of sending lab wastewater to DAM DFEA</th></tr><tr><th>Storing in tank</th><th>Sending record to DAM</th></tr><tr><td>1</td><td>Damascus</td><td>Yes</td><td></td></tr><tr><td>2</td><td>Damascus Countryside</td><td>Yes</td><td>17 Feb 2007 (80L)</td></tr><tr><td>3</td><td>Aleppo</td><td>Yes</td><td>19 April 2007 (80L)</td></tr><tr><td>4</td><td>Homs</td><td>Yes</td><td>21 June 2007 (80L)</td></tr><tr><td>5</td><td>Hama</td><td>Yes</td><td></td></tr><tr><td>6</td><td>Lattakia</td><td>Yes</td><td></td></tr><tr><td>7</td><td>Deir ez Zor</td><td>Yes</td><td></td></tr><tr><td>8</td><td>Idleb</td><td>Yes</td><td>22 April 2007 (80L)</td></tr><tr><td>9</td><td>Hasakeh</td><td>Yes</td><td></td></tr><tr><td>10</td><td>Rakka</td><td>Yes</td><td></td></tr><tr><td>11</td><td>Sweida</td><td>Yes</td><td>23 April 2007 (80L)</td></tr><tr><td>12</td><td>Dara'a</td><td>Yes</td><td></td></tr><tr><td>13</td><td>Tartous</td><td>Yes</td><td>25 April 2007 (80L)</td></tr><tr><td>14</td><td>Quneitra</td><td>Yes</td><td>23 April 2007 (80L)</td></tr></table>		Directorates	Frequency of sending lab wastewater to DAM DFEA		Storing in tank	Sending record to DAM	1	Damascus	Yes		2	Damascus Countryside	Yes	17 Feb 2007 (80L)	3	Aleppo	Yes	19 April 2007 (80L)	4	Homs	Yes	21 June 2007 (80L)	5	Hama	Yes		6	Lattakia	Yes		7	Deir ez Zor	Yes		8	Idleb	Yes	22 April 2007 (80L)	9	Hasakeh	Yes		10	Rakka	Yes		11	Sweida	Yes	23 April 2007 (80L)	12	Dara'a	Yes		13	Tartous	Yes	25 April 2007 (80L)	14	Quneitra	Yes	23 April 2007 (80L)
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2.5 Each Directorate prepares its budget plan for regular monitoring.	Budget plan for regular monitoring has been prepared by all of the DFEA in 2005 and 2006 as shown in Chapter 3.7 and 5.2. The budget plan for the fiscal year 2008 was prepared and submitted to MOLAE in August 2007 and it will be provided in January 2008.																																																														

## 2.4 Achievement of Output-3

According to the Project Design Matrix (PDM) in the Record of Discussion (R/D) in 9 September 2004, the overall target of Component-3 is “Environmental analysis data is accumulated and properly managed”. The achievement is summarized in the table below by indicator.

### Summary of Achievement of Output-3

Indicators	Achievement Result (BW: basic water., CB: chemical & bio, HM: heavy metal, AQ: air quality)						
3.1. Monitoring data collected and analyzed are accumulated in the monitoring records 3 years after the commencement of the Project	Currently, total of 2,568 samples have been collected and 58,202 data have been analyzed. Total of 21,256 data have been accumulated in the database of a computer at laboratory of DFEAs. These data have been arranged in table and/or graph for preparation of the annual report through training by the JICA Expert Team. All DFEAs are able to arrange data and analyze in comparison with the discharge standard in December 2007. Only Homs DFEA can analyze the data more detail considering the purpose of environmental monitoring and its effect because of the existence of one senior level manager. As for other 13 DFEAs, however, more integrated and detailed analysis skills will be required for effective and efficient pollution source control in near future.						
	Number of monitoring data accumulated in computer.						
	Directorates		Field	# of data (samples) collected	# of data analyzed	# of data accumulated in computer	Remarks
	1	Damascus	BW	201	6,930	2,324	Jan. 2006 to Nov. 2007
			CB 1	10	40	0	Samples for training
			HM	36	442	0	
			AQ	242	242	154	
			All	389	6,712	2,478	
	2	Damascus Countryside	BW	338	7,924	3,570	
			CB 2	2	8	0	Samples for training
			All	340	7,932	3,570	
	3	Aleppo	BW	84	2,884	854	
			CB 2	2	8	0	Samples for training
			AQ	115	115	92	
			All	226	3,032	946	
	4	Homs	BW	210	5,460	1,792	
			CB 2	1	4	0	Samples for training
			AQA	100	100	80	
			All	311	5,564	1,872	
	5	Hama	BW	164	4,564	1,736	
	6	Lattakia	BW	217	6,230	2,506	
	7	Deir ez Zor	BW	81	2,534	868	
	8	Idleb	BW	82	2,548	938	
	9	Hasakeh	BW	111	2,842	994	
	10	Rakka	BW	80	2,240	560	
	11	Sweida	BW	164	4,844	1,750	
	12	Dara'a	BW	100	2,716	1,050	
	13	Tartous	BW	132	3,360	1,246	
14	Quneitra	BW	72	2,142	742		
Total		Water	2,086	57,720	20,930	Mostly BW and HM	
		Air	482	482	326		
		All	2,568	58,202	21,256		

## 2.5 Achievement of Output-4

According to the Project Design Matrix (PDM) in the Record of Discussion (R/D) in 9 September 2004, the overall target of Component-4 is "Laboratory staff is able to formulate an environmental monitoring plan specifying parameters required". The achievement is summarized in the table below by indicator.

## Summary of Achievement of Output-4

Indicators	Achievement Result (BW: basic water., CB: chemical & bio, HM: heavy metal, AQ: air quality)																																																																																																						
4.1. Environmental monitoring plan specifying parameters and sites is formulated in respective lab by one year after the commencement of the Project.	<p>In the fields of BW and AQ, monitoring plans for the year 2006 and 2007 have been prepared. The plans for the year 2008 including CB and HM were prepared in December 2007, and it will be submitted to GCEA in January 2008.</p> <p style="text-align: center;">Status of preparation of a monitoring plan at each Directorate O = prepared    X=not prepared</p> <table><tr><th colspan="2">Directorates</th><th>Field</th><th>Plan for 2006</th><th>Plan for 2007</th><th>Remarks</th></tr><tr><td rowspan="2">1</td><td rowspan="2">Damascus</td><td>Water</td><td>O</td><td>O</td><td>-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008 -HM: One-year plan prepared in August 2007.</td></tr><tr><td>Air</td><td>O</td><td>O</td><td>-Plan for 2008 to be prepared</td></tr><tr><td>2</td><td>Damascus Countryside</td><td>Water</td><td>O</td><td>O</td><td>-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008</td></tr><tr><td rowspan="2">3</td><td rowspan="2">Aleppo</td><td>Water</td><td>O</td><td>O</td><td>-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008</td></tr><tr><td>Air</td><td>O</td><td>O</td><td>-Plan for 2008 to be prepared</td></tr><tr><td rowspan="2">4</td><td rowspan="2">Homs</td><td>Water</td><td>O</td><td>O</td><td>-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008</td></tr><tr><td>Air</td><td>O</td><td>O</td><td>-Plan for 2008 to be prepared</td></tr><tr><td>5</td><td>Hama</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>6</td><td>Lattakia</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>7</td><td>Deir ez Zor</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>8</td><td>Idleb</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>9</td><td>Hasakeh</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>10</td><td>Rakka</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>11</td><td>Sweida</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>12</td><td>Dara'a</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>13</td><td>Tartous</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr><tr><td>14</td><td>Quneitra</td><td>Water</td><td>O</td><td>O</td><td>BW</td></tr></table>	Directorates		Field	Plan for 2006	Plan for 2007	Remarks	1	Damascus	Water	O	O	-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008 -HM: One-year plan prepared in August 2007.	Air	O	O	-Plan for 2008 to be prepared	2	Damascus Countryside	Water	O	O	-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008	3	Aleppo	Water	O	O	-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008	Air	O	O	-Plan for 2008 to be prepared	4	Homs	Water	O	O	-BW : Plans for 2006 and 2007 prepared -CB: Expected to be included in the plan for 2008	Air	O	O	-Plan for 2008 to be prepared	5	Hama	Water	O	O	BW	6	Lattakia	Water	O	O	BW	7	Deir ez Zor	Water	O	O	BW	8	Idleb	Water	O	O	BW	9	Hasakeh	Water	O	O	BW	10	Rakka	Water	O	O	BW	11	Sweida	Water	O	O	BW	12	Dara'a	Water	O	O	BW	13	Tartous	Water	O	O	BW	14	Quneitra	Water	O	O	BW
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4.2 Environmental monitoring guideline is introduced into a standard for all labs is formulated in respective lab by 3 year after the commencement of the Project	<p>The JICA Expert Team prepared a guidance for preparation of environmental monitoring guideline through discussion with GCEA. GCEA sent it to all DFEAs for preparation of their own guidelines in August 2007 based on experiences of annual monitoring plan preparation.</p> <p>The guidelines prepared by DFEAs were collected by GCEA and provided to the JICA Expert Team in November 2007. Based on these drafts, the JICA Expert Team commented and suggested DFEA for improvement. DFEAs are required to revise and update year by year considering their own monitoring purposes and peculiarity of environment conditions.</p>																																																																																																						

## 2.6 Achievement of Output-5

According to the Project Design Matrix (PDM) in the Record of Discussion (R/D) in 9 September 2004, the overall target of Component-5 is “The results and data acquired by the Project is open to and shared with the citizens of the target Directorates. Staff of target Directorates is able to formulate its action plan for public awareness and environmental education”. The achievement is summarized in the table below by indicator.

## Summary of Achievement of Output-5

Indicators	Achievement Result																																																																
5.1 Preliminary condition on public awareness is comprehended by each Governorate and shared among organization concerned.	<p>Preliminary survey on condition of public awareness was conducted in 2004 and 2005 in 7 governorates (i.e. Damascus, Damascus Countryside, Aleppo, Homs, Hasakeh, Sweida, and Tartous) selecting high populated Governorates and representing regional locations. It was conducted by the sub-contract work but the C/Ps in charge for public awareness joined in actual survey work. Major results are as follows;</p> <ul style="list-style-type: none"><li>-70% of interviewees reply current situation slightly polluted, 20% feel something worse,</li><li>-Mostly they get information by TV, radio, and newspaper, but few by brochures and internet,</li><li>-Only 10% currently have complaints on nearby environment,</li><li>-More than 60% do not know current complaint receiving system of DFEA and Governor Office,</li><li>-60% of citizens who have complaints currently, know the complaint receiving system</li></ul> <p>For C/Ps, it was the first time to recognize the facts mentioned above quantitatively. They confirmed that this survey method is useful to plan activities and to review effectiveness on public awareness. Method and results were also presented in the 2<sup>nd</sup> meeting of the National Committee for Information and Environmental Awareness in February 2006.</p> <p>Implementation of preliminary survey on public awareness (○ = implemented X=not implemented)</p> <table><tr><th colspan="2">Governorate</th><th>Survey</th><th>Remarks</th></tr><tr><td>1</td><td>Damascus</td><td>○2004</td><td>Actual content is trained in the 1<sup>st</sup> integrated training for environmental management held in DAM.</td></tr><tr><td>2</td><td>Damascus Countryside</td><td>○2004</td><td>ditto</td></tr><tr><td>3</td><td>Aleppo</td><td>○2004</td><td>ditto</td></tr><tr><td>4</td><td>Homs</td><td>○2005</td><td>ditto</td></tr><tr><td>5</td><td>Hama</td><td>X</td><td>ditto</td></tr><tr><td>6</td><td>Lattakia</td><td>X</td><td>ditto</td></tr><tr><td>7</td><td>Deir ez Zor</td><td>X</td><td>ditto</td></tr><tr><td>8</td><td>Idleb</td><td>X</td><td>ditto</td></tr><tr><td>9</td><td>Hasakeh</td><td>2005</td><td>ditto</td></tr><tr><td>10</td><td>Rakka</td><td>X</td><td>ditto</td></tr><tr><td>11</td><td>Sweida</td><td>2005</td><td>ditto</td></tr><tr><td>12</td><td>Dara'a</td><td>X</td><td>ditto</td></tr><tr><td>13</td><td>Tartous</td><td>2005</td><td>ditto</td></tr><tr><td>14</td><td>Quneitra</td><td>X</td><td>ditto</td></tr><tr><td colspan="2">Total</td><td>7</td><td></td></tr></table>	Governorate		Survey	Remarks	1	Damascus	○2004	Actual content is trained in the 1 <sup>st</sup> integrated training for environmental management held in DAM.	2	Damascus Countryside	○2004	ditto	3	Aleppo	○2004	ditto	4	Homs	○2005	ditto	5	Hama	X	ditto	6	Lattakia	X	ditto	7	Deir ez Zor	X	ditto	8	Idleb	X	ditto	9	Hasakeh	2005	ditto	10	Rakka	X	ditto	11	Sweida	2005	ditto	12	Dara'a	X	ditto	13	Tartous	2005	ditto	14	Quneitra	X	ditto	Total		7	
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5.2. Materials for activities for public awareness, such as textbook, manuals, and pamphlets are prepared.	<p>Materials for activities for public awareness, such as textbook, manuals, etc. have been prepared by GCEA and the priority DFEAs as shown in the tables below.</p> <p>Types and number of public awareness materials prepared by GCEA (2005~2006)</p> <table><tr><th>Year</th><th>Textbooks</th><th>Manuals</th><th>C/D</th><th>others</th></tr><tr><td>2005</td><td>-Eco-plant game (300 sets) -Its instruction manual</td><td>-</td><td>-Video program "Japan Experience on Pollution Control" (2,000 sets)</td><td>-Humat Beia Newsletter No.1 (3,000 sets) -Humat Beia Newsletter No.2 (3,000 sets)</td></tr><tr><td>2006</td><td>-</td><td>-Environmental Works Manual (2,000 sets)</td><td>-Water treatment Technology in Japan (300 sets) -The History of Pollution and Environmental Restoration in Yokkaichi (300 sets)</td><td>-Humat Beia Newsletter No.3 (1,500 sets) - Humat Beia Newsletter No.4 (2,000 sets) -Humat Beia Newsletter No.5 special issue for study tour to Egypt (200 sets)</td></tr><tr><td>2007</td><td>-</td><td>-</td><td>-</td><td>-Humat Beia Newsletter No.6 and No.7(each 1,500 sets)</td></tr></table> <p>Types and number of public awareness materials prepared by the priority Directorates (since Jan, 2007)</p> <table><tr><th colspan="2">Directorates</th><th>Textbooks</th><th>C/D</th><th>others</th></tr><tr><td>1</td><td>Damascus</td><td>-Eco-plant game (20 sets)</td><td>- CDs mentioned in the table above (50 sets)</td><td>-Presentation materials for WS and seminar -Humat Beia Newsletter</td></tr><tr><td>2</td><td>Homs</td><td>ditto</td><td>ditto</td><td>ditto</td></tr><tr><td>3</td><td>Aleppo</td><td>ditto</td><td>ditto</td><td>ditto</td></tr><tr><td>4</td><td>Lattakia</td><td>ditto</td><td>ditto</td><td>ditto</td></tr><tr><td colspan="2">Total</td><td>80 sets</td><td>200 sets</td><td>800 sets</td></tr></table>	Year	Textbooks	Manuals	C/D	others	2005	-Eco-plant game (300 sets) -Its instruction manual	-	-Video program "Japan Experience on Pollution Control" (2,000 sets)	-Humat Beia Newsletter No.1 (3,000 sets) -Humat Beia Newsletter No.2 (3,000 sets)	2006	-	-Environmental Works Manual (2,000 sets)	-Water treatment Technology in Japan (300 sets) -The History of Pollution and Environmental Restoration in Yokkaichi (300 sets)	-Humat Beia Newsletter No.3 (1,500 sets) - Humat Beia Newsletter No.4 (2,000 sets) -Humat Beia Newsletter No.5 special issue for study tour to Egypt (200 sets)	2007	-	-	-	-Humat Beia Newsletter No.6 and No.7(each 1,500 sets)	Directorates		Textbooks	C/D	others	1	Damascus	-Eco-plant game (20 sets)	- CDs mentioned in the table above (50 sets)	-Presentation materials for WS and seminar -Humat Beia Newsletter	2	Homs	ditto	ditto	ditto	3	Aleppo	ditto	ditto	ditto	4	Lattakia	ditto	ditto	ditto	Total		80 sets	200 sets	800 sets														
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Indicators	Achievement Result																								
5.3 Seminars and workshops targeted for educational institutions and so forth are conducted.	In total, 12 workshops have been conducted by 4 priority DFEAs as shown in the tables below.																								
	Damascus DFEA																								
	<table><tr><th></th><th>Year</th><th>Type of workshop/seminar</th><th># of participants</th><th>Type of institutions/organizations</th></tr><tr><td>1</td><td>May 2006</td><td>Workshop for demonstration of Eco-plant game</td><td>App .10</td><td>Staff in Damascus DFEA</td></tr><tr><td>2</td><td>Feb. 2007</td><td>Seminar on public awareness raising for industrial sector</td><td>3</td><td>Staff in Damascus DFEA</td></tr><tr><td>3</td><td>Feb., 2007</td><td>Workshop with Chamber of Industry initiated by GCEA and DFEA</td><td>30</td><td>Damascus Chamber of Industry and member companies</td></tr></table>		Year	Type of workshop/seminar	# of participants	Type of institutions/organizations	1	May 2006	Workshop for demonstration of Eco-plant game	App .10	Staff in Damascus DFEA	2	Feb. 2007	Seminar on public awareness raising for industrial sector	3	Staff in Damascus DFEA	3	Feb., 2007	Workshop with Chamber of Industry initiated by GCEA and DFEA	30	Damascus Chamber of Industry and member companies				
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In addition, the following workshops/seminars have been organized at GCEA																									
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<table><tr><th></th><th>Year</th><th>Type of workshop/seminar</th><th># of participants</th><th>Type of institutions/organizations</th></tr><tr><td>1</td><td>June 2005</td><td>Environmental education seminar</td><td>21</td><td>Environmental NGOs based in Damascus Governorate, public awareness staff in DFEA Damascus, and JOCV volunteers for environmental education</td></tr><tr><td>2</td><td>Jan. 2006</td><td>Media event "Collaboration with Stakeholders on Environment"</td><td>36</td><td>DFEAs, NGOs, Youth Union, Mass Media</td></tr><tr><td>3</td><td>Feb. 2006</td><td>Lecture on Public Awareness and Environmental Education</td><td>22</td><td>Public awareness staff in DFEAs</td></tr><tr><td>4</td><td>May 2006</td><td>Workshop for demonstration of Eco-plant game</td><td>3</td><td>Staff in GCEA</td></tr></table>		Year	Type of workshop/seminar	# of participants	Type of institutions/organizations	1	June 2005	Environmental education seminar	21	Environmental NGOs based in Damascus Governorate, public awareness staff in DFEA Damascus, and JOCV volunteers for environmental education	2	Jan. 2006	Media event "Collaboration with Stakeholders on Environment"	36	DFEAs, NGOs, Youth Union, Mass Media	3	Feb. 2006	Lecture on Public Awareness and Environmental Education	22	Public awareness staff in DFEAs	4	May 2006	Workshop for demonstration of Eco-plant game	3	Staff in GCEA
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Indicators	Achievement Result
<p>5.4 Periodical network meeting among organizations and institutions regarding to E&amp;E in each Governorate are organized.</p>	<p>In the beginning of the Project, the JICA Expert Team supported C/Ps in charge for public awareness to formulate the Environmental Awareness Forum in Syria which is to be the body for periodic network meeting among concerned organizations on environmental education (E&amp;E) and public awareness. The first meeting was held January 2005 as a Media Event titled "Collaboration with Stakeholders on Environment". After that, several demonstrations and seminars were held by C/Ps in GCEA and DFEAs and the JICA Expert Team supported such activities in 2005.</p> <p>Under the MOLAE decision No.2051 dated on Oct. 3, 2005, the National Committee for Information and Environmental Awareness was established. The National Committee consists of concerned ministries and NGOs and the periodic meeting has been held as described in Chapter 3.6. Therefore, the JICA Expert Team discussed and agreed with GCEA to hand over the roles of periodic network meeting to be conducted by the Environmental Awareness Forum in Syria targeting general stakeholders in order to avoid duplication activities. After that, the JICA Expert Team shifted its target on public awareness from pupils and NGOs to pollution sources (factories) and conducted periodic network meeting with factories through the Chamber of Industry selecting four priority Governorates (Damascus, Homs, Aleppo, and Lattkia).</p> <p>Under the Committee, a sub-committee consisting of the relevant organizations in regional level was established in each governorate and its periodic meeting has been held to cope with regional issues on public awareness and to conduct plans and actions in accordance with the national strategy and action plan prepared by the National Committee. Currently, all DFEAs are requested by GCEA to prepare a regional strategy for public awareness by the end of 2007.</p> <p>The JICA Expert Team proposed GCEA to prepare an action plan for pollution source control using monitoring data in each DFEA in parallel with preparation of the regional strategy for public awareness. Based on discussion and agreement with GCEA, an official request letter of GCEA was sent to all DFEAs for preparation of their action plan in accordance with a guidance prepared by the JICA Expert Team. This proposal was also informed and discussed in the National Committee for Information and Environmental Awareness. DFEA submitted an action plan to GCEA in October 2007 except for the Dier ez Zor, Rakka, and Quneitra DFEAs.</p> <p>Based on the comments and suggestions by the JICA Expert Team, the prepared action plans will be revised and modified by each DFEA. Each DFEA is required to take actual activities in accordance with this action plan in the course of implementation of overall regional level strategy and plan authorized by the sub-committee. The revised plan and result of actions should be reported to GCEA and the sub-committee by DFEA, and be reported to the National Committee by GCEA.</p>