

Attachment 2: テクニカルコミティの協議議事録


Minutes of Meeting
On
The 1st Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic

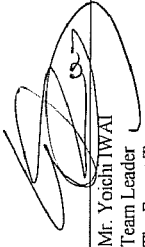
Damascus, 23rd February 2005

The 1st technical committee (T/C) was started by an opening statement by the Deputy Minister of Local Administration and Environment (MOLA), Eng. Imad Hassoun mentioning the outline of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project). Then, the JICA Expert Team presented the outline of the Project including the equipment and other instruments to be provided by the Japan International Cooperation Agency (JICA) to the technical committee members listed Per ANNEX-1.

The followings are the issues discussed and commented upon in the 1st T/C meeting.

- (1) Director of the Directorate for Environmental Affaires (DFEA) in Homs, Ch. Solyman Kalo, submitted a staff list to be assigned to the Project and a layout plan of the laboratory. He commented that the equipment to be provided should be selected considering the local needs of each directorate. The staff of the DFEA in Homs could be a trainer to other DFEAs because of its high analysis capability if JICA provides additional equipment. In Homs, analysts needs of hydrocarbon and fluoride are essential, but this is not included in the Project even though he requested to the Preparatory Missions from the JICA headquarters. He questioned its reasons. The JICA Syria, Mr. Naoki Takechi answered that it was decided considering the current capacity and total balance of all DFEAs, and he suggested that the Project is one of the assistances from JICA and the further assistance could be considered in another project based on the output of the Project. The JICA Expert Team additionally proposed that such kinds of specific technical issues should be discussed in the Working Group of T/C for preparation of a new project proposal.
- (2) Director of the Public Awareness Department in the General Commission for Environmental Affaires (GCEA), Mr. Abdulrazzak Safjalani, commented that the public awareness activities should be promoted in close cooperation with GCEA and DEFEAs. The JICA Expert Team agreed the comments and requested to GCEA for their aggressive participation.
- (3) Director of DFEA in Damascus Countryside, Mr. Thaeer Daif, questioned same issues as of Homs by stressing specific conditions of pollution sources in the Governorate of Damascus Countryside such as the existence of more than 20,000 factories, and the location of the Adra Industrial Zone. He requested to JICA to provide equipment same of the DFEA in Damascus. He also expressed some complaints about a lack of enough information to the DFEA in Damascus Countryside related to the Project. The JICA Expert Team repeated the same answer to the DFEA in Homs, and suggested that there could be a lot of possibility to use the necessary equipment in the DFEA in Damascus because of shorter distance to bring samples, and such kind of effective usage is to be considered among DFEAs.
- (4) The JICA Expert Team wondered whether the DFEA in Damascus Countryside has enough staff


Eng. Imad Hassoun
Deputy Minister,
Ministry of Local Administration and
Environment


Mr. Yoichi IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency

List of AttendantsSyrian Side

Name	Position	Organization
Mr. Inad Hassoun	Deputy Minister	MOLAE
Mr. Hamzeh Soliman	Director of Environment	DFEA Qunaitra
Ms. Reham Shaheen	Director of Environment	DFEA Deir ez Zor
Mr. Bassam Khair bek	Director of Environment	DFEA Damascus
Mr. Mahmoud Taleb	Director of Environment	DFEA Idleb
Mr. Ali Jwaid	Director of Environment	DFEA Hama
Ms. Shams Aljaseem	Director of Environment	DFEA Al Raikka
Mr. Husan Marjan	Director of Environment	DFEA Tartus
Mr. Solayman Kalo	Director of Environment	DFEA Homs
Mr. Thaeer Daif	Director of Environment	DFEA Damascus Countryside
Ms. Fatema Hariri	Director of Environment	DFEA Dara'a
Mr. Maher Khair	Staff	DFEA Al Sweidh
Mr. Re'af al Khodr	Deputy Director	DFEA Al Sweidh
Mr. Aysar Beniamcen	Staff	DFEA Hama
Mr. Mohamad Ameen Al-Khalaf	Staff	DFEA Deir ez Zor
Mr. Ahmad Khasra	Head of Air Safety Dept.	GCEA
Ms. Wazief Yazzi	Staff	GCEA
Ms. Reem Aed Ruboh	Director of Water Safety	GCEA
Ms. Manal Sakka	Director of EIA	GCEA
Mr. Abdulrazzak Saf'jalani	Director of Public Awareness	GCEA
Mr. Ahmad Mohamad	Director of International Relations	GCEA

Japanese Side

Name	Position	Organization
Mr. Naoki Takechi	Project Formulation Advisor	JICA Syria Office
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Dr. Ryunan Matsue	Water Quality (Basic Analysis)	JICA Expert Team
Mr. Mohammed Aldoubosh	Interpreter	JICA Expert Team

to deal with the monitoring activities. In addition, the JICA Syria, Mr. Naoki Takechi commented that even the equipment to be provided by JICA will require additional operation and maintenance (O/M) cost to DFEA though some will be covered by JICA only in the first year. If the DFEA in Damascus Countryside has enough capability to procure such equipment by himself, the JICA Expert Team will be able to assist and support for effective use of them in the Project.

The Director of DFEA in Damascus Countryside replied that it was ready requested to GCEA and MOLAE through the regular administrative procedure.

(5) Director of DFEA in Idleb, Mr. Mahmoud Taleb, questioned that what kind of background will be required for the counterpart in charge for the data management, and whether the chief of laboratory must be in full time for the Project. The JICA Expert Team replied that the person in charge for data management will be required some chemical background and knowledge, and the chief will not always be a fulltime if he has an assistant under his management.

(6) Deputy Director of the DFEA in Sweida, Mr. Re'af al Khodr, informed that the Alroun dam in the Governorate is suffering from water pollution by pesticides which might cause cancer diseases according to the report by the Ministry of Irrigation published one month ago. He repeated the necessity to provide equipment considering specific background of each Governorate. He expressed great thanks to JICA about the Project because it could be useful to identify the evidence for taking countermeasures against environmental pollution and resource degradation.

(7) Director of the Water Safety Department in GCEA, Ms. Reem Abd Rabbo, noted that the coliform is one of the most important indices to check safety of potable water, so the biological analysis of water quality should be more emphasized in the Project. She questioned that how the Project will cope with the quality assurance and quality control (QA/QC) matter. The JICA Expert Team replied that the Project includes both an internal QA/QC by cross checking and so on, and an external QA/QC by introducing regular check from other authorized laboratories such as the Atomic Energy Commission (AEC) and the Science and Environmental Research Center (SERC).

(8) Director of the Environmental Impact Assessment (EIA) in GCEA, Ms. Manal Sakka, mentioned that some laboratories of DFEAs planned to be moved to new places though the JICA Expert Team explained its necessary space. The JICA Expert Team answered that it was ready informed from several DFEAs, so a tentative use of the current laboratories should be taken into account for the time being.

(9) Director of the DFEA in Homs, Ch. Solayman Kalo, questioned a general procedure to change and/or modify the contents of the Project component. The JICA Expert Team replied that this kind of requests should be discussed with DFEAs and GCEA through T/C at first, and then its discussion results should be reported to S/C with proposals for making final decision.

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

Agenda for the 1st Technical Committee

1. Date:

- Feb. 23 (Wed), 09:00-11:30: at meeting room in the Administration Development Center

2. Agenda

- | | |
|---|--------------------|
| 1. Opening Statement
(by the Deputy Minister of MOLAE) | 09:00-09:05 |
| 2. Remarks
(by the JICA Syria Office) | 09:05-09:10 |
| 3. Presentation: Technical Matters
(by the JICA Expert Team) | 09:10-10:00 |
| 1) Presentation of the Project | |
| 2) Confirmation of basic water quality analysis parameters, chemical and biological water analysis parameters and air quality analysis parameters | |
| 3) Equipment and instrument supplied | |
| 4) Confirmation of the measures to be taken by Syria side | |
| 5) Layout of laboratory in Damascus DFEA and other DFEAs | |
| 6) Confirmation of the assignment of laboratory chief in each DFEA, and the staffs' name who will take part in the training course. | |
| 4. Q and A | 10:00-11:00 |

End



**Minutes of Meeting
On
The 2nd Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic**

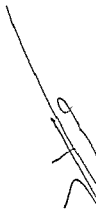
Damascus, 26 May 2005


The 2nd technical committee (T/C) was held on 26th May, 2005 at the Administration Development Center. All T/C members attended and the following members were absent: Ms. Reem Aed Raboh Director of Water Safety in the General Commission for Environmental Affairs (GCEA), Ms. Lama Ahmad Director of the Directorate for Environmental Affairs (DFEA) in Latakia, Mr. Samir Hamzeh from GCEA, and Ms. Fathia Mohammad from GCEA. It was started by an opening statement by the Chairman of T/C, Dr. Akram S. Al-Khoury, the General Director of GCEA mentioning current progress of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project). Dr. Akram S. Al-Khoury also requested the attendants sending qualified trainees to the training courses to be held by the JICA Expert Team. Then, Mr. Yoichi Iwai, the Team Leader of the JICA Expert Team made presentation, going through the coming steps of the Project in detail referring the following 6 technical items.

1. Counterparts (C/P) and Project Design Matrix (PDM)
2. Training Program of the Basic Environmental Monitoring Course
3. Preparation of Lab of DFEA and Installation of Equipment
4. Profile and Career Development of C/P Personnel
5. Usage of News Letter "Humat Beia"
6. Items for Working Group Activities

After the series of discussion, the Chairman of T/C, Dr. Akram S. Al-Khoury, made closing remarks of the 2nd T/C. Then, a video film about "Lessons on Environment in Japan" was displayed for the attendants.

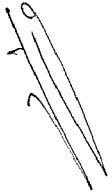
An attendant list and the agenda of the 2nd T/C are attached per ANNEX-1 and ANNEX-2, respectively.


Dr. Akram S. Al-Khoury
General Director
General Commission for Environmental
Affaires


Mr. Yoichi Iwai
Team Leader
The Expert Team
Japan International Cooperation Agency

The followings are the issues discussed and commented upon in the 2nd T/C meeting.

- (1) The JICA Expert Team, Mr. Yoichi Iwai, questioned the preparatory work conditions of laboratory of the Directorate for Environmental Affairs (DFEA) in Damascus, Damascus Countryside, Aleppo, Tartous, and Deir ez Zor. The 5 Directors of Damascus, Damascus Countryside, Aleppo, Tartous, and Deir ez Zor DFEAs answered that construction works of the laboratory have been almost completed and these will be ready for use at the end of May 2005.
- (2) The JICA Expert Team, Mr. Yoichi Iwai, requested the Directorate for Environmental Affairs (DFEA) in Damascus to nominate 4 counterparts (one for Chemical and Biological Analysis, two for Air Quality, and one for Data Management). The Director of DFEA in Damascus, Mr. Bassam Khairbek, answered that he will inform the name of counterparts to the JICA Expert Team because it was already decided.

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List of AttendantsSyrian Side

Name	Position	Organization
Dr. Akram Khouri	General Director	GCEA
Ms. Manal Sakka	Director of EIA	GCEA
Mr. Abdurazzak Safjajani	Director of Public Awareness	GCEA
Mr. Ahmad Khasra	Head of Air Safety Dept.	GCEA
Dr. Yasin Mor'alla	Staff	GCEA
Mr. Shakti Al-Soleman	Staff	GCEA
Mr. Bassam Khairbek	Director of Environment	DFEA Damascus
Mr. Thaar Daif	Director of Environment	DFEA Damascus
Mr. Saed Nalfous	Director of Environment	Country-side
Mr. Suleiman Kalo	Director of Environment	DFEA Aleppo
Mr. Ali Jwaid	Director of Environment	DFEA Homs
Mr. Mohammed Ameen Al-Khalaf	Director of Environment	DFEA Hama
Mr. Mahmoud Taleb	Staff of Environment	DFEA Deir ez Zor
Ms. Raeifa Esper	Director of Environment	DFEA Idleb
Ms. Shams Al-Jasem	Director of Environment	DFEA Hasakah
Dr. Motsem Abed	Director of Environment	DFEA Raikha
Ms. Fatemah Hariri	Director of Environment	DFEA Sweida
Mr. Hasan Marjan	Director of Environment	DFEA Darn'a
Mr. Hamzeh Soliman	Director of Environment	DFEA Tartous
		DFEA Quneitra

Japanese Side

Name	Position	Organization
Ms. Reiko Funaba	Assistant Resident Representative	JICA Syria Office
Dr. Bechir Ibrahim	Advisor	JICA Syria Office
Mr. Roudou Sido	Program Officer	JICA Syria Office
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Dr. Ryunan Matsue	Water Quality (Basic Analysis)	JICA Expert Team
Mr. Shunsuke Sato	Water Quality (Chemical and Biological Analysis)	JICA Expert Team
Mr. Kazuyuki Sato	Environmental Education	JICA Expert Team
Mr. Mohammed Al-Doubosh	Interpreter	JICA Expert Team
Ms. Naada Kat	Interpreter	JICA Expert Team

(3) The Director of DFEA in Hasakeli, Ms. Raeifa Esper, requested a training work related to data management because her staff did not have any experience. The JICA Expert Team, Mr. Yoichi Iwai, replied that another training course focused on the data management will be held for the counterparts in charge for data management by the JICA Expert Team.

(4) The Director of DFEA in Hasakeli, Ms. Raeifa Esper, mentioned that an achievement evaluation of the counterparts should be conducted by the JICA Expert Team at first, in order to learn evaluation method. The General Director of GCEA, Dr. Akram S. Al-Khouri, answered that the evaluation in the Project should be carried out by the directors of DFEAs primary, because it is not a test which some will pass and others fail but a tool to measure the achievement level of personal skills in dealing with equipment and capability what extent of the counterpart was developed and improved. The JICA Expert Team, Mr. Yoichi Iwai, additionally commented that the director is a position to watch attitude and performance of the counterpart daily, and the JICA Expert Team will support the directors when it is required.

(5) Director of the Directorate of Environmental Impact Assessment (EIA) in GCEA, Ms. Manal Sakka, questioned whether the interim evaluation is planned in the Project. The JICA Expert Team, Mr. Yoichi Iwai, answered that the evaluation is planned to be conducted by monthly and yearly during the Project period, and it should be continued even after the termination of the Project. The General Director of GCEA, Dr. Akram S. Al-Khouri, answered to the question that there will be an integrated evaluation for the Project done by GCEA, DFEAs, and the JICA Expert Team.

(6) The Director of DFEA in Tartous, Mr. Hasan Marjan, questioned whether the 3-days field training could not be enough for analysis training of 14 water quality substances. The JICA Expert Team, Mr. Yoichi Iwai, replied that the training program presented is up to the end of July 2005, and further training should be planned from August considering its results. The General Director of GCEA, Dr. Akram S. Al-Khouri, additionally explained that this is what we mean by evaluation checking acquired skills during the training.

(7) Concerning to the question mentioned above, the Director of DFEA in Homs, Mr. Suleiman Kalo, commented that it is enough for the counterparts of DFEA in Homs due to their sophisticated experiences. The JICA Expert Team, Mr. Yoichi Iwai, referred the different situation of laboratory analysis in each DFEA, and requested for dispatching trainers to the Project. The Director of DFEA in Homs answered that DFEA in Homs has contributed to GCEA in training activities such as mobile lab training.

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

Agenda for the 2nd Technical Committee

1. Date:

- May, 26 (Thu), 10:30-12:30; at the Administration Center of MOLAE

2. Agenda

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| 1. Opening
(by the General Director of GCEA) | 10:30-10:40 |
| 2. Presentation
(by the JICA Expert Team) | 10:40-11:30 |
| 1) Counterparts and Project Design Matrix | |
| 2) Training Program of Basic Environmental Monitoring Course | |
| 3) Preparation of Laboratory of DFEA and Installation of the Equipment | |
| 4) Profile and Career Development of C/P Personnel | |
| 5) Usage of News Letter "Humat Beia" | |
| 6) Items for WG Activities | |
| 3. Discussion | 11:30-12:30 |
| 4. Closing Remarks
(by the General Director of GCEA) | 12:30-12:35 |
| 5. Preparation of draft M/M
(by the JICA Expert Team) | 12:40- |

3. Lunch

12:40-13:30

End

**Minutes of Meeting
On
The 3rd Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic**

Damascus, 4 August 2005

The 3rd Technical Committee (T/C) for the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project) was held on 4th August, 2005 at the Meeting Room in the General Commission for Environmental Affairs (GCEA). It was started by an opening statement by Dr. Yasin Moa'alla, Director of the Directorate of Laboratories in GCEA. Mr. Yoichi Iwai, the Team Leader of the JICA Expert Team made presentation, going through the coming steps of the Project referring the following 6 technical items.

1. Review of the Basic Environmental Monitoring Training
2. Next Training Program
3. Study Tour to the Egyptian Environmental Affairs Agency (EEAA) in Egypt
4. Preparation of Budget for the Project in the Next Year
5. News Letter "Humat Beia"
6. Others (Equipment)

After the series of discussion, the General Director of GCEA, Dr. Akram S. Al-Khoury, made closing remarks of the 3rd T/C. Then, copies of the News Letter "Humat Beia" were handed to GCEA and the Directors of Directorate for Environmental Affairs (DFEAs) by the JICA Expert Team (GCEA, DFEAs of Damascus, Homs, and Aleppo were 150 copies, and other DFEAs were 100 copies in each).

An attendant list and the agenda of the 3rd T/C are attached per ANNEX-1 and ANNEX-2, respectively.

The followings are the issues discussed and commented upon in the 3rd T/C meeting.

- (1) The JICA Expert Team, Mr. Yoichi Iwai, reviewed the current training, and confirmed that GCEA and all directors recognized and shared problems and difficulties concerning to the Project. The General Director of GCEA, Dr. Akram S. Al-Khoury, additionally mentioned that the problems related to staff, budget, and allowance of the Project were all internal matters to be solved by the Syrian side. The GCEA and directors attended agreed to continue further efforts for solving problems and difficulties mentioned above in cooperation with the JICA Expert Team.

- (2) The JICA Expert Team, Mr. Yoichi Iwai, handed the attendant lists of the Basic Lecture Training and the Follow-up Training, and informed the names were not participated the Follow-up Training. Then, Mr. Yoichi Iwai requested the directors to inform the reasons of absence of them to the JICA Expert Team, especially the counterparts in charge for the basic water quality analysis. The directors attended agreed to inform the reasons to the JICA Expert Team.

Dr. Akram S. Al-Khoury
General Director
General Commission for Environmental
Affairs

Mr. Yoichi-IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency

(3) The JICA Expert Team, Mr. Yoichi Iwai, proposed the next training program which consists of a follow-up training in each DFEA, a trouble shooting on equipment and its usage, and a study tour to Egypt. The T/C members attended agreed the next training program proposed by the JICA Expert Team.

(4) The JICA Expert Team, Mr. Yoichi Iwai, proposed the special T/C meeting would be held in DFEA in Damascus on 22nd August, 2005 for discussion and agreement about a procurement specification related to air and water quality equipment to be procured in 2006. The GCEA and 3 DFEAs (Damascus, Homs, and Aleppo) agreed, and requested to the JICA Expert Team to prepare the procurement specification through discussion with the staff of GCEA and DFEAs.

(5) The Director of DFEA in Damascus Countryside, Mr. Thaeer Al-Daif, claimed to the JICA Expert Team that JICA did not answer the matter of shifting central laboratory from DFEA in Damascus to DFEA in Damascus Countryside requested to the JICA Syria, Mr. Nagasawa, by the Governor of Damascus Countryside on 4th May, 2005. Mr. Thaeer Al-Daif also mentioned that DFEA in Damascus Countryside sent a letter concerning to this matter to the Ministry of Local Administration and Environment (MOLAE) through GCEA, and it would be sent to the JICA Syria through the State Planning Commission (SPC). The JICA Expert Team, Mr. Yoichi Iwai, replied that the JICA Expert Team was not in a position to answer this matter, and nobody could answer to this claim in this meeting because of absence of the members from the JICA Syria.

(6) In this connection, the Director of DFEA in Homs, Mr. Suleiman Kalo, commented that DFEA in Homs should be the central laboratory because of its sophisticated capability of environmental monitoring and of urgent needs based on actual conditions of environmental pollution in Homs Governorate. In addition, the Assistant Director of DFEA in Damascus, Ms. Wadia'a Jeha Khouri, commented that Damascus and Damascus Countryside Governorates could be merged as the Metropolitan Damascus in near future. The JICA Expert Team, Mr. Yoichi Iwai, suggested that this matter must be discussed and agreed among concerned agencies in the Syrian side in advance, and then it should be proposed to the T/C and the Steering Committee (S/C) meeting because this issue should require a change of the Record of Discussion (R/D) agreed between the Syrian side and JICA on September 9, 2004.

(7) The Director of DFEA in Rakka, Ms. Shamsa Al-Jasem, questioned whether each DFEA was currently required to prepare its own environmental monitoring plan. The JICA Expert Team, Mr. Yoichi Iwai, replied that a monitoring plan which the JICA Expert Team currently mentioned was only for tentative use for practical training of water quality analysis.



(8) The Director of DFEA in Damascus Countryside, Mr. Thaeer Al-Daif, suggested that a result of the pollution survey to be started soon should be prepared by using GIS. The JICA Expert Team, Mr. Yoichi Iwai, replied that GIS would not be used in the pollution source survey due to the licensing difficulties in Syria to use GIS.

(9) The Director of DFEA in Homs, Mr. Suleiman Kalo, requested a training concerning to more sophisticated analysis skills such as selection of analysis parameters, neutralization and so on, to the JICA Expert Team. The JICA Expert Team, Mr. Yoichi Iwai, agreed to include such technical skills in the next training program considering an actual progress of analysis capability of the counterpart personnel.



List of AttendantsSyrian Side

Name	Position	Organization
Dr. Akram Khouri	General Director	GCEA
Ms. Manal Sakka	Director of EIA	GCEA
Dr. Yasin Mo'alla	Director of Laboratories	GCEA
Ms. Wafiq'a Jeha Khouri	Assistant Director of Directorate	DFEA Damascus
Mr. Thaer Daif	Director of DFEA	DFEA Damascus Countryside
Mr. Saied Nafious	Director of DFEA	DFEA Aleppo
Mr. Suleiman Kalo	Director of DFEA	DFEA Homs
Mr. Ali Iwaied	Director of DFEA	DFEA Hama
Ms. Lama Ahmad	Director of DFEA	DFEA Lattakia
Mr. Mahmoud Taleb	Director of DFEA	DFEA Idleb
Ms. Raelia Esper	Director of DFEA	DFEA Hasakeh
Ms. Shams Aljaseem	Director of DFEA	DFEA Rakka
Ms. Omay'mah Al-Sha'ar	Staff of Environment	DFEA Sweida
Ms. Fatema Hariri	Director of DFEA	DFEA Dara'a
Mr. Hasan Marjan	Director of DFEA	DFEA Tartous
Mr. Hamzah Soliman	Director of DFEA	DFEA Quneitra

Japanese Side

Name	Position	Organization
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Mr. Shunsuke Sato	Water Quality (Chemical and Biological Analysis)	JICA Expert Team
Mr. Mohammed Aloubosh	Interpreter	JICA Expert Team
Ms. Nada Kat	Interpreter	JICA Expert Team

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

Agenda for the 3rd Technical Committee**1. Date:**

- Aug. 4 (Thr), 11:00-13:00: at the Meeting Room in GCEA

2. Objectives

- 1) Review and Feedback of the Training
- 2) Discussion on Issues Concerned

3. Agenda

11:00-11:10

1. Opening
(by the General Director of GCEA)

11:10-11:50

2. Presentation
(by the JICA Expert Team)
 - 1) Review of the Basic Environmental Monitoring Training
 - 2) Next Training Program of the Environmental Monitoring
 - 3) Study Tour to the Environmental Monitoring Training
Center in the Arab Republic of Egypt
 - 4) Preparation of Budget for the Project in the next Year
 - 5) Preparation of News Letter "Humat Beit"

11:50-12:30

3. Discussion

12:30-12:40

4. Closing Remarks
(by the General Director of GCEA)

12:40-

5. Preparation of draft M/M
(by the JICA Expert Team)

End

Minutes of Meeting
On
The 4th Technical Committee
For
For
The Capacity Development of Environmental Monitoring at
Directorates
Environmental Affairs in Governorates in the Syrian Arab Republic

Damascus, 22 August 2005

The 4th Technical Committee (T/C) for the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project) was held on 22nd August, 2005 at the Meeting Room in the Directorate for Environmental Affairs (DFEA) in Damascus. The principal objective of the 4th T/C is to discuss the draft technical specifications for the equipment to be procured in 2005 and to get agreement with the General Commission for Environmental Affairs (GCEA), DFEAs concerned, and the JICA Expert Team.


At first, the Director of Laboratories in GCEA, Dr. Yasin Moa'illa, announced that the Director of DFEA in Homs was ready to agree the draft technical specifications prepared by the JICA Expert Team through discussions with the staff members of DFEAs concerned. After the series of discussion, the T/C members and the JICA Expert Team attended to the 4th T/C, reached to the agreement on the draft technical specifications.

An attendant list of the 4th T/C and the technical specifications prepared by the JICA Expert Team are attached per ANNEX-1 and ANNEX-2

The followings are the issues discussed in the 4th T/C meeting.

- (1) The Director of DFEA in Aleppo, Mr. Saeid Naffous, agreed the draft technical specifications, and requested to include equipment for chemical and biological analysis, noise, oil and grease, and pesticides in a procurement list for DFEA in Aleppo, if possible. The JICA Expert Team, Mr. Yoichi Iwai, replied that these technical specifications were prepared based on the Record of Discussion (R/D) agreed between the Syrian side and JICA on September 9, 2004. Therefore, the equipment mentioned by Mr. Saeid Naffous can not be included in the procurement list at this moment. Mr. Yoichi Iwai suggested that any request for further assistance from JICA not described in R/D should be discussed and agreed in the Steering Committee (S/C) of the Project at first. Mr. Saeid Naffous understood this answer.
- (2) The Director of DFEA in Aleppo, Mr. Saeid Naffous, also requested to the JICA Expert Team to provide enough amount of reagents having wider measurement range. The JICA Expert Team, Mr. Yoichi Iwai, agreed to provide the reagents requested considering effective range and expiry period.
- (3) The Director of DFEA in Aleppo, Mr. Saeid Naffous, questioned about necessity of protective wear to handle a net radiometer. The JICA Expert Team, Mr. Yoichi Iwai, answered that it was not necessary because the net radiometer was only for measurement of sunshine radiation not for radioactive substance.

Dr. Akram S. Al-Khouiri
General Director
General Commission for Environmental
Affairs


Mr. Yoichi Iwai
Team Leader,
The Expert Team
Japan International Cooperation Agency





ANNEX-1

List of Attendants

Syrian Side

Name	Position
Dr. Yasin Moa'alla	Director of Directorate of Laboratories, GCEA
Mr. Ahmad Khisara	Head of Air Safety Dept.
Mr. Bassam Khairbek	Director of Damascus DFEA
Mr. Saied Naffous	Director of Aleppo DFEA
Ms. Wadia'a Jeha Khouri	Deputy Director of Damascus DFEA
Mr. Khalid Kasseem	Chief of Laboratory, Damascus DFEA
Ms. Mouna Taifour	Staff of Water Safety Division, Damascus DFEA
Ms. Entesar Yanes	Staff of Chemical Safety Division, Damascus DFEA
Mr. Nidal Khouri	Staff, Damascus DFEA
Mr. Samer Mokbel	Staff of the Laboratory, Damascus DFEA
Mr. Nawaf Alidara	Staff, Damascus DFEA
Ms. Reem Sadr Eddin	Staff of Laboratory, Damascus DFEA
Ms. Omaitma Younes	Head of Air Safety Division, Damascus DFEA

Japanese Side

Name	Position
Ms. Yumiko Honda	JICA Syria Office
Mr. Yoichi Iwai	Chief Advisor, JICA Expert Team
Mr. Shunsuke Sato	Member, JICA Expert Team
Ms. Nada Kat	Interpreter, JICA Expert Team
Mr. Mohammed Aldoubosh	Interpreter, JICA Expert Team

- (4) The Director of DFEA in Damascus, Mr. Bassam Khairbek, expressed no objections to the draft technical specifications. Mr. Bassam Khairbek informed a plan of networking of air quality monitoring in Damascus DFEA to the T/C members. The JICA Expert Team, Mr. Yoichi Iwai, suggested that the networking of air quality monitoring in Damascus DFEA should be compatible those in Homs and Aleppo DFEAs because JICA would supply same equipment for air quality monitoring.
- (5) The JICA Expert Team, Mr. Shunsuke Sato, supplementary explained that only refrigerators in the list are for 14 DFEAs.
- (6) The Deputy Director of DFEA in Damascus, Ms. Wadia'a Jeha Khouri, questioned to the JICA Expert Team whether the equipment to be provided by JICA in the Project could cover all parameters designated in air (21 parameters) and water (38 parameters) exhausted/discharge standards in Syria. The JICA Expert Team, Mr. Shunsuke Sato, answered that almost all parameters could be analyzed by the equipment to be provided by JICA only except for 5 parameters in air quality (H2S, C, SiF4, HCl, CH2O) and for 3 parameters in water quality (Phenol, HC, Chlorine).
- (7) The Deputy Director of DFEA in Damascus, Ms. Wadia'a Jeha Khouri, commented that all environmental monitoring data should be sent and managed by GCEA in MOLAE by the network in future. She also questioned about maintenance of the equipment. The JICA Expert Team, Mr. Shunsuke Sato, replied that the suppliers should guarantee in the first year but a periodic maintenance and calibration should be carried out by the staff members of each laboratory.
- (8) The Staff of DFEA in Damascus, Ms. Mouna Taifour and Ms. Entesar Yanes, asked to the JICA Syria about possibility of assistance for installation of wastewater treatment facilities. The Project Formulation Advisor in JICA Syria, Ms. Yumiko Honda, answered that JICA plans to prepare the Master Plan Study for Sewerage System in Syria, so such request would be considered in accordance with this Master Plan.
- (9) The Director of Laboratories in GCEA, Dr. Yasin Moa'alla, commented that GCEA was on a way introducing a mobile laboratory to each DFEA, and it would be able to analyze oil and grease, and other chemical substances. Then, Dr. Yasin Moa'alla requested to the T/C members for fully use of the equipment provided by JICA and the mobile laboratory provided by GCEA.

JICA EXPERT TEAM

The Capacity Development of Environmental Monitoring at Directorates for
Environmental Affairs in Governorates in the Syrian Arab Republic
NIPPON KOEI CO., LTD.

To: Dr. Akram S. Al-Khoury
General Director,
General Commission of Environmental Affairs

CC: Director of DFEA in Damascus,
Director of DFEA in Homs,
Director of DFEA in Aleppo
JICA Syria

Telephone : 963-11-446 4796 (Damascus) 81-3 (5276) 3930 (Tokyo)
Facsimile: 963-11-446 4796 (Damascus) 81-3 (5276) 2656 (Tokyo)
E-mail : semp@secs-net.org (Damascus)
int.e@gx.n-koei.co.jp (Tokyo)

Your ref.

Our ref. EN63 2005 Date: August 11, 2005

Dear Dr. Al-Khoury,

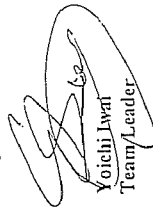
It is our pleasure to inform you the draft specifications for the 2nd year's equipment procurement of
air and water quality sampling and analysis. The draft specifications attached in this letter are
prepared through discussions with the directors and staff members of the Damascus, Homs and
Aleppo DFEA.

In this connection you are kindly requested to check and confirm the draft specifications and please
inform us when you have some comments and suggestions in the draft specifications before August
21st, 2005.

We would like to have the 4th technical committee on August 22nd, 2005 at the Damascus DFEA in
order to agree and confirm the specifications for the 2nd year's equipment procurement.

Thank you for your kind cooperation.

Truly Yours,


Yoichi Iwari
Team/Leader

JICA Expert Team



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فريق خبراء جايكا

تطوير القدرات في المراقبة البيئية في مديريات شؤون البيئة في المحافظات
شركة نيبون كوي المتحدّة

إلى: الدكتور أكرم الخوري المدير العام الهيئة العامة لشؤون البيئة	نسخة إلى: مدير شؤون البيئة في دمشق مدير شؤون البيئة في حمص مدير شؤون البيئة في حلب مكتب جايكا في سوريا
هاتف: 963-11-446 4796 (دمشق) 963-11-446 4796 (طوكيو) فاكس: 963-11-446 4796 (دمشق) 963-11-446 4796 (طوكيو) بريد إلكتروني: semp@secs-net.org (دمشق) int.e@gx.n-koei.co.jp (طوكيو)	

تاريخ: 11 آب، 2005

إشارة كتابنا : EMGJ 002

السيد الدكتور الخوري،

يسرنا أن نطمئنكم عن مسودة المواصفات لقرء أجهزة السنتة التافيه لاعتيان وتحليل جودة الهواء
والماء. لقد تم إعداد مسودة المواصفات المرقتة بهذه الرسالة من خلال المناقشات التي تمت مع
مراء وموظفي شؤون البيئة في دمشق وحمص وحلب.

نرجو أن يتم التحقق والتأكد من مسودة المواصفات وإعلامنا عن ملاحظتكم واقتراحاتكم حولها
وذلك قبل 21 آب 2005.

نود أن يتم عقد الاجتماع الرابع للجنة الفنية في 22 آب 2005، في مديرية شؤون البيئة في
دمشق للمرافقة والتأكد على مواصفات الأجهزة المرقتة في السنتة التافيه.

نشكر لكم تعاونكم.

يويشي إيواي
رئيس الفريق

فريق خبراء جايكا

Equipment List for Air Quality Analysis

Package	Item No.	Apparatus Name	QTY
1	Air Quality Analysis Equipment and Instrument		
	1-1	High Volume Air Sampler	12
	1-2	Low Volume Air Sampler	12
	1-3	Handy Sampler	12
2	Meteorological instrument		
	2-1	Wind Direction & Speed Meter	9
	2-2	Thermometer / Hygrometer	9
	2-3	Solar radiation meter	9
	2-4	Asman ventilation psychrometer	3
3	Laboratory Equipment		
	3-1	Micro Balance (Electronic Analytical Balance)	3
	3-2	Refrigerator	5
	3-3	Auto-dry desiccators	3
	3-4	Locker for reagents	5
	3-5	UV/VIS Spectrometer (single beam)	3
4	Glassware for air quality analysis DPEA (Damascus, Homs, Aleppo)		
5	Reagent for air quality analysis		
6	Simple Sampler for air quality monitoring		
			360

TECHNICAL SPECIFICATIONS (DRAFT)

(Air Quality Analysis Equipment for Three Cities (Damascus, Homs, Aleppo))

11 August, 2005

JICA Expert Team

No.	Name of Equipment	Specification	Model No.	Qty			Price	
				DAM	HOM	ALP	Unit	Total
Syrian Arab Republic - Equipment for The Project for "Capacity Development of Environmental Monitoring at Directories"				Package 1		(11/1)		
				Unit	Unit	Unit	Unit	
1	Air Quality Analyze Equipment and Instrument							
1-1	High Volume Air Sampler	Usage: Collection of TSP and PM10 1. CONDITION (1) Electricity : 220 V 50Hz 2. COMPOSITION (1) Main unit : 1 unit 3. SPECIFICATIONS (1) Type : Open face (all-weather type) : Particle size selective sampling (switchable between TSP and PM10) : No separation (2) Drier separation (3) Suction flow rate : 1 flow rate : Approx. 1000 liter/min. : Accuracy : $\pm 3\%$ of integrated flow rate (4) Flow rate detection : Flat wire systems or equivalent (5) Suction pressure : Max. 700 hPa (6) Filter size : Approx. 20 (VxVx) (D)mm or approx. ϕ 150 mm (7) Filter exchanger : Manual (8) Indication function(digital) : Date & time indicator, : Intermittent flow rate indicator, : Integrated flow rate indicator, : In-use operation (9) Power interruption measure : Automatic restoration (time memory) (10) Working temperature range : 10~40°C 4. ACCESSORIES (1) Manufacturer's Standard Accessories : 1 set 5. SPARE PARTS & CONSUMABLE (1) Quartz filter filter : 25 sheets - 8 case (2) Spare parts kit for 1 year (including following parts) 1) Carbon brush : 2 pcs 2) Fuse : 2 pcs		4	4	4	12	

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No.	Name of Equipment	Specification	Model No.	Qty			Price	
				DAM	HOM	ALP	Unit	Total
Syrian Arab Republic - Equipment for The Project for "Capacity Development of Environmental Monitoring at Directories"				Package 1		(2/1)		
				Unit	Unit	Unit	Unit	
1-2	Low Volume Air Sampler	Usage: Collection of PM-10 1. CONDITION (1) Electricity : 220 V 50Hz 2. COMPOSITION (1) Main unit : 1 unit (2) Suction pump : 1 pc (3) Flow meter : 1 pc 3. SPECIFICATIONS (1) Particle size classification : Gravitational separation or equivalent (2) Main unit : Approx. ϕ 17mm (3) Filter holder : Exchangeable (4) Filter exchanger : Manual (5) Suction pump : 1) Suction flow rate : 20 liter/min. or more : Max. 700 hPa (6) Flow meter : 1) Accuracy : $\pm 2\%$ of integrated flow rate : Working temperature range : 10~40°C 4. ACCESSORIES (1) Manufacturer's Standard Accessories : 1 set 5. SPARE PARTS & CONSUMABLE (1) Glass fiber filter : 100 sheets * 2 case (Low gas absorption type) (2) Spare parts for 1 year : 1 set		4	4	4	12	

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Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"		Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs		(1/6)		
No.	Name of Glassware	Specification	Qty			Price
			DAM	HOM	ALP	
Total						
Unit						
US\$						
Total						
US\$						
1	Whole Pipettes	Glass, 1 ml, Tolerance: ±0.007 ml or better Glass, 2 ml, Tolerance: ±0.010 ml or better Glass, 5 ml, Tolerance: ±0.015 ml or better Glass, 10 ml, Tolerance: ±0.020 ml or better Glass, 20 ml, Tolerance: ±0.030 ml or better Glass, 50 ml, Tolerance: ±0.050 ml or better Glass, 100 ml, Tolerance: ±0.080 ml or better	3	3	3	14
2	Graduated pipettes	Glass, 1 ml, Graduation: 0.1 ml, Tolerance: ±0.050 ml or better Glass, 5 ml, Graduation: 0.5 ml, Tolerance: ±0.007 ml or better Glass, 10 ml, Graduation: 1 ml, Tolerance: ±0.030 ml or better Glass, 25 ml, Graduation: 2.5 ml, Tolerance: ±0.050 ml or better Glass, 50 ml, Graduation: 5 ml, Tolerance: ±0.080 ml or better Glass, 100 ml, Graduation: 10 ml, Tolerance: ±0.100 ml or better	4	4	4	22
3	Pipette Fillers (Rubber Pipetter)	Applicable pipette's capacity: not more than 2ml. Capacity: 25ml.	1	1	1	6
4	Porcelain mortar	Size: φ 100mm	2	2	2	9
5	Beakers	50 ml, Glass, Color: clear, Graduation: 10 ml or smaller 100 ml, Glass, Color: clear, Graduation: 25 ml or smaller 200 ml, Glass, Color: clear, Graduation: 50 ml or smaller 500 ml, Glass, Color: clear, Graduation: 50 ml or smaller 1000 ml, Glass, Color: clear, Graduation: 100 ml or smaller 2000 ml, Glass, Color: clear, Graduation: 200 ml or smaller	2	2	2	26
6	Volumetric Flasks	25 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.04 mL or better, Accessory (standard ground joint and poly stopper) 50 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.06 mL or better, Accessory (standard ground joint and poly stopper) 100 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper) 200 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper) 500 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper) 1000 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	10	10	10	42
7	Volumetric Flasks	Borosilicate glass, A class, Color: amber, 25 ml, Tolerance: ±0.04 mL or better, Accessory (standard ground joint and poly stopper) Borosilicate glass, A class, Color: amber, 50 ml, Tolerance: ±0.06 mL or better, Accessory (standard ground joint and poly stopper) Borosilicate glass, A class, Color: amber, 100 ml, Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper) Borosilicate glass, A class, Color: amber, 200 ml, Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper) Borosilicate glass, A class, Color: amber, 500 ml, Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper) Borosilicate glass, A class, Color: amber, 1000 ml, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	14
8	Round bottom Flasks	200 ml, Glass, Color: clear, Short neck 300 ml, Glass, Color: clear, Short neck	0	0	0	20
9	Kjeldahl Flasks	100 ml, Glass, Color: clear, Short neck 200 ml, Glass, Color: clear, Short neck 300 ml, Glass, Color: clear, Short neck 500 ml, Glass, Color: clear, Short neck	0	0	0	5

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Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"		Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs		(2/6)		
No.	Name of Glassware	Specification	Qty			Price
			DAM	HOM	ALP	
Total						
Unit						
US\$						
Total						
US\$						
10	Pair shape Flasks	50 ml, Glass, Color: clear, Short neck 100 ml, Glass, Color: clear, Short neck 250 ml, Glass, Color: clear, Short neck 100 ml, Borosilicate glass, color: clear 200 ml, Borosilicate glass, color: clear 300 ml, Borosilicate glass, color: clear 500 ml, Borosilicate glass, color: clear 1000 ml, Borosilicate glass, color: clear	0	0	0	10
11-1	Erlenmeyer Flasks	100 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 200 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 300 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 500 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	30
11-2	Erlenmeyer Flasks with Ground Joints	100 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 200 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 300 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 500 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	30
12	Graduated Cylinders	50 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better 100 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better 200 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better 500 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better 1000 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better	2	2	2	11
13	Komigomatic Pipe (Spout)	1 ml 2 ml 3 ml 5 ml 10 ml	2	2	2	16
14	Watch Dish	φ70mm φ90mm φ120mm φ150mm φ180mm	2	2	2	16
15	Separatory funnels	φ100ml, glass φ200ml, glass φ300ml, glass φ500ml, glass	0	0	0	10
16	Wash Bottles with Bore, Screw Cap, Riser Tube and Tube Holder	Capacity: 500 ml, Type of riser tube: leak-proof type Bottle and riser tube: low-density polyethylene; Screw cap and tube holder: Polypropylene Capacity: 1000 ml, Type of riser tube: leak-proof type Bottle and riser tube: low-density polyethylene; Screw cap and tube holder: Polypropylene	3	3	3	19
17	Beaker with handle	Capacity: 1000 ml, Polypropylene	1	1	1	6
18	Automatic buret	Automatic buret 25 ml w/1L Reservoir, Color: clear Automatic buret 50 ml w/2L Reservoir, Color: clear	0	0	0	2
19	Rubber of two ball reams	Injection of air, general use	0	0	0	2
20	Test Tube with stopper	Test tube, 18(dia.) x 180 (L) mm \$16, 100 pcs/case	1	1	1	4
21	Stainless Spoon	Stainless Spoon (middle size: 180 mm) 5pc/box	1	1	1	5
22	Funnels	Soda-lime glass, Angle: 60°, with short stem, φ70 mm Soda-lime glass, Angle: 60°, with short stem, φ100 mm	5	5	5	30

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Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs		Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"		(1/6)		
No.	Name of Glassware	Specification	Qty			Price
			DAM	HOM	ALP	
			Air	Total	Unit	Total
					US\$	US\$
23	Glass rods	Glass rods, 1500 (L) x 5 (dia) mm	2	2	2	10
24	Glass tube	Glass rods, 1500 (L) x 8 (dia) mm	2	2	2	8
25	Stopcock	Glass tube, 1500 (L) x ϕ 6 x ϕ 8 mm	2	2	2	10
26	Pinchcock	Stopcock, ϕ 6 x ϕ 8 mm, Fluoroplastic (PTFE) or equivalent, Temperature resistant: \sim 200 to +260°C or more	1	1	1	5
27	Screw Cock	Pinchcock (Size M), Stainless steel	5	5	5	30
28	Stopwatch	Screw Cock (Size M), Stainless steel	5	5	5	30
29		Manual rolling	1	1	1	4
30	Micro pipet					
		2~20 μ l	1	1	1	4
		10~100 μ l	1	1	1	4
31	Chip for micro pipet		1	1	1	5
		0.5~10 μ l, 1000 pcs/package	1	1	1	5
32	Flow meter	Flow type flow meter with needle valve, 0.05~0.5 L/min, Accuracy: FS \pm 3%	1	1	1	4
		Flow type flow meter with needle valve, 0.2~2.5 L/min, Accuracy: FS \pm 3%	1	1	1	4
33	Heating mantles	4-Piece heaters, Applied capacity of flask: 300ml	1	1	1	4
34	Fat extractor (soxhlet)	Soxhlet extraction apparatus, 300ml type, SPC joints	0	0	0	1
35	Thermomixer	Mercury type cylinder shape thermometer, -20~100°C	0	0	0	5
36	Banher tongs	Tongs for flask	2	2	2	8
37	Lab jack	Lab jack, 150~150mm, Range of expansion and contraction: 75~245 mm, An upper and lower board is made of the stainless steel.	1	1	1	7
38	Unit stand	Support stand set: 1 m x 1 m, Assembly stick (stainless pipe)	1	1	1	5
		Support stand set: 1.5 m x 1 m, Assembly stick (stainless pipe)	0	0	0	1
		Support stand set: 2.0 m x 1 m, Assembly stick (stainless pipe)	0	0	0	1
39	Core borer	Core borer sets saw-shield edge (No. of boxes, 12)	1	1	1	4
40	Marf	Clamp Holders, SUS 304, Horizontal stick/Prop range: ϕ 7mm~13mm,	10	10	10	50
41	Jumbo marf	Clamp Holders, SUS 304, Horizontal stick/Prop range: ϕ 13mm~21mm,	5	5	5	25
42	Clamps	Open diameter: 5~50 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 304	5	5	5	25
		Open diameter: 5~80 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 305	5	5	5	25
43	Tweezers	Dentistry department tweezers	2	2	2	16
44	Vacuum hose	Vacuum hose ϕ 8 x ϕ 2 1mm (5 m/ Unit)	1	1	1	6
45	Rubber tube	Rubber tube ϕ 6 x ϕ 13mm (10 m/ Unit)	1	1	1	5
46	Silicon rubber tube	Silicon rubber tube ϕ 6 x ϕ 8mm, (10m/ Unit)	1	1	1	4
		Silicon rubber tube ϕ 6 x ϕ 10mm, (10m/ Unit)	1	1	1	4
47	Micro line tube	Silicon rubber tube ϕ 8 x ϕ 10mm, (10m/ Unit)	1	1	1	4
		OD ϕ 2.29 mm (5 m)	0	0	0	3
48	Tube joint	Straight, Glass, ϕ 6 x ϕ 8 mm, (10 pcs/ case)	1	1	1	4
		T type, Glass, ϕ 6 x ϕ 8 mm, (10 pcs/ case)	1	1	1	4
		Y type, Glass, ϕ 6 x ϕ 8 mm, (10 pcs/ case)	1	1	1	4
49	Support for test tubes	for 18 (dia.) x 180 (L) test tube, Number of partitions: 5 x 10	1	1	1	5
50	Stopper (silicon rubber)	ϕ 15mm	2	2	2	16
		ϕ 20mm	2	2	2	16
		ϕ 25mm	2	2	2	16
		ϕ 30mm	2	2	2	11
		ϕ 35mm	2	2	2	11
		ϕ 40mm	2	2	2	11

Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs		Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"		(4/6)		
No.	Name of Glassware	Specification	Qty			Price
			DAM	HOM	ALP	
			Air	Total	Unit	Total
					US\$	US\$
51	Oxygen rotator	Teflon coating, ϕ 6.5 x 25 mm	5	5	5	25
		Teflon coating, ϕ 7.5 x 25 mm	5	5	5	25
		Teflon coating, ϕ 7.5 x 30 mm	5	5	5	25
		Teflon coating, ϕ 10 x 40 mm	5	5	5	25
52	Rotator taking out stick	Teflon coating, ϕ 1.0 x 250 mm	1	1	1	4
		Teflon coating, ϕ 8.0 x 310 mm	1	1	1	4
53	Weighing Paper	Weighing Paper 500pcs/box, Large (Size: approx. 120 x 120 mm)	1	1	1	5
		Weighing Paper 500pcs/box, Small (Size: approx. 90 x 90 mm)	1	1	1	5
54						
55	Vacuum Pump	Capacity: More than 27 liter/min., Ultimate vacuum: Approx. 5 x 10 ⁻³ mmHg, Motor: More than 0.25 HP, No. of stages: Two, Suction tube: Two, approx. 1m each, Other provision: Suitable pressure gauge	1	1	1	4
56	Circulating aspirator	Capacity: More than 12~15 liter/min., Aspirator: 2 pcs, Water ink: Polypropylene, Suction entrance: 2 pcs (ϕ 1.5 mm), Outside size: Approx. 360(W) x 260(D) x 190(H) mm	0	0	0	1
57	Micro-syringe	Micro-syringe: 10 μ l	0	0	0	1
		ϕ 7 mm, 100 pcs (Low gas absorption type)	0	0	0	1
		8 x 10 ⁻² : 25 pcs	2	2	2	6
58	Glass fiber filter paper* 1	0.45 μ m, ϕ 7 mm, 100 pcs	8	8	8	24
59	Quartz filter paper* 1	pH paper: 601 type, 4 pcs/case	2	2	2	16
60	Membrane filter	4~7 μ m, 10g	2	2	2	9
61	pH Paper	Glass, 100 ml	1	1	1	5
62	Quartz vial	Type that can be strongly pinched by power of spring	0	0	0	2
63	Gastight syringe	Plastic container or more fine quality, Approx. 450 (W) x 300 (D) x 70 (H) mm	1	1	1	4
64	Tweezers for cell	Plastic or more fine quality, Size: Approx. 200 x 170 x 250 (H) mm, H type	1	1	1	4
65	Pipet container	Number of sets of syringes : 2 pcs or more	1	1	1	4
66	Pipet support					
67	Stand for micro pipet					
68						
69	Waste water container	Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 20 L, Color: White, Stopper: Two	8	8	8	32
		Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 5 L, Color: White, Stopper: One	8	8	8	32
70	Boiling stone	Boiling stone: 30 pcs/case	0	0	0	1
71	Filtration	2000 ml, Borosilicate glass	1	1	1	4
72	Stand for Separatory funnels	For 100 ml separatory funnels, 5 pcs set or more	0	0	0	2
		For 200 ml separatory funnels, 5 pcs set or more	0	0	0	2
		For 300 ml separatory funnels, 5 pcs set or more	0	0	0	2
73	Seal tape	For 500 ml separatory funnels, 5 pcs set or more	0	0	0	1
		Made of teflon, Approx. 10mm x 15 m	2	2	2	8
74	Parafilm film	4" x 125 feet	2	2	2	9
75	Wiping Tissue (Kinwipex)	Wiping Tissue (Small Size 72pack/box)	1	1	1	4
76	Pipet cleaner	Inside size of basket: Approx. 500 ϕ x 136 mm, Material: Vinyl chloride	1	1	1	4

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Syrian Arab Republic - Equipment for the Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"		Package 4 - Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs		(5/6)				
No.	Name of Glassware	Specification	Qty			Price Unit	Total	Price Total
			DAM	HOM	ALP			
77	Brush	For bottle washing (small; No2)	2	2	2	11		
		For bottle washing (middle; No5)	2	2	2	11		
		For bottle washing (large; No10)	2	2	2	11		
		For Pipettes	2	2	2	11		
		For buret φ30 x 951 mm	2	2	2	11		
78	Drying Shelf (Shell for the glass apparatus dryness)	Standard top board, Size: (W)800*(D)510*(H)1600 mm, With water receiving, but made of stainless steel, Vinyl curtain (impermeability), Net board (Resin coating), Mesh size 16~18 mm, Zips, 30~30 mm x 1pc, 70~95 mm x 1pc	0	0	0	1		
79	Color comparison tubes	50 ml, with white graduated, With stopping	10	10	10	40		
80	Tube support	For color comparison, For 100ml color comparison tube x10 pcs	10	10	10	40		
81	Pressure Pipette	150 mm, 1000 pcs, Borosilicate	1	1	1	4		
		230 mm, 1000 pcs, Borosilicate	1	1	1	4		
82	Teflon tube	φ1 mm x 6 mm, 20m	1	1	1	5		
83	F Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) ream type (Approx 3.6Kw), It conforms to JIS K-0102.	0	1	0	2		
84	NH4 Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) ream type (Approx 3.6Kw), It conforms to JIS K-0102. The phenol distillation is also possible according to use.	0	0	0	1		
85	Dropping Bottle	50 ml	2	2	2	9		
		100 ml	1	1	1	5		
86	Crucible	Crucible, porcelain, 30 ml	10	10	10	40		
		Crucible, porcelain, 50ml	10	10	10	40		
87	Porcelain dish tongs	Porcelain dish tongs	1	1	1	5		
88	Junbo crucible tongs	Junbo crucible tongs for use with muffle furnace	0	0	0	1		
89	Standard Sieve	Approx. φ200 mm, mesh: 2mm	1	1	1	4		
90	Weighing Bottle	Approx. φ50mm, H35mm	5	5	5	25		
91	Desiccant	Desiccant, glass, 180mm (dia.)	1	1	1	4		
92	Conical beaker	250 ml	10	10	10	50		
93	Paral dishes	50 mm diameter (presterilized)	0	0	0	100		
		120 mm diameter (presterilized)	0	0	0	10		
94	Bottle for sample collection	500 ml, Polypropylene, with screw closure, Write-noises bottle,	20	20	20	160		
95	Rubber Bulb for Small Pipette	Vinyl-methyl Silicon rubber for graduated pipettes (1ml)	2	2	2	16		
		Vinyl-methyl Silicon rubber for graduated pipettes (5ml)	2	2	2	21		
		Vinyl-methyl Silicon rubber for graduated pipettes (10ml)	2	2	2	16		
96	Cleaning Tissue	45 boxes of 200 tissues for wipe out glass ware, etc, Lint-free fiber, Fully absorbent, Size: approx. 113 x 215 mm	1	1	1	4		
97	Gloves	Disposable type, Seamless latex, Solvent-proof, Powdered fit both right and left hands, Size: medium, Packs of 100	0	0	0	1		
98	Goggles	Plastic, with side guard	2	2	2	8		
99	Cleaning Agent	For removing grease, oil, wax, dye residue, silicone, etc. Disinfectant action: by active chlorine. Dosing: 2 to 10 % in demineralized water. PH-Value: approx. 9 or 8. Volume: 10 kg or more / 1 container. Cleaning agent deconex 11 universal	1	1	1	4		
100	Buret	Buret 25 ml, Color: clear	2	2	2	6		
		Buret 50 ml, Color: clear	2	2	2	6		

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Syrian Arab Republic - Equipment for the Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"		Package 4 - Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs		(6/6)				
No.	Name of Glassware	Specification	Qty			Price Unit	Total	Price Total
			DAM	HOM	ALP			
101	Buret stand	Double holder	1	1	1	3		
102	Dust jar	Standard metrology of US (APCA) The glass cylinder: Outside diameter: φ137mm, H: 250mm (Inside diam: φ127mm) Stand with prop: 400(W) x 300(H) x 1760(D) mm	8	8	8	24		
2	Services							
	Packing and Delivery	1) Delivery to GCEA in Damascus 2) Delivery to 14 DFEAs in 14 Governorate	1	1	1	3		
		TOTAL	1	1	1	3		
		1. Filter paper is matched to the type of Hi-Vol and Low-Vol air sampler. Confirm it to the buyer.						

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Syrian Arab Republic - Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorate for Environmental Affairs in Governorate"													Package 5 Reagent for air quality analysis			(1/2)		
No.	Name of Equipment	Specification	Usage	DAM	QTY	Total	Unit	Total	Unit	Total	Price	Total						
		Grade	Amount		HOM	ALP	US\$	US\$	US\$	US\$	US\$	US\$						
V	Reagent for air quality analysis																	
1	Acetic acid	(CH ₃ COOH)																
2	Sulfamic acid	(H ₂ NC ₃ H ₃ SO ₃ H)																
3	N-(1-Naphthyl) ethylenediamine dihydrochloride for NOx analysis (C ₁₀ H ₇ N ₃ CH ₂ CH ₂ NH ₂ ·2H ₂ O)																	
4	Potassium permanganate for NOx analysis (KMnO ₄)																	
5	Sulfuric acid	(H ₂ SO ₄)																
6	Sodium nitrite	(NaNO ₂)																
7	Chloroform, certified	(CHCl ₃)																
8	Barium hydroxide octahydrate	(Ba(OH) ₂ · 8H ₂ O)																
9	Triethanol amine	(N(CH ₂ CH ₂ OH) ₃)																
10	Sodium azide	(NaN ₃)																
11	Potassium iodide	(NH ₂ C ₅ H ₄ Cl ₂ C ₃ H ₇ NH ₂ ·HCl)																
12	Hydrochloric acid	(HCl)																
13	Formaldehyde																	
14	Sodium hydrogen sulfite	(NaHSO ₃)																
15	Iodine (0.1N)																	
16	Sodium sulfate	(Na ₂ SO ₄)																
17	Mercury (II) chloride	(HgCl ₂)																
18	Sodium chloride	(NaCl)																
19	Glycerin	(HOCH ₂ CH(OH)CH ₂ OH)																
20	Starch, soluble	(C ₆ H ₁₀ O ₅) _n																
21	Mercury (II) iodide, red	(Hg ₂ I ₂)																
22	Sodium thiosulfate pentahydrate	(Na ₂ S ₂ O ₅ · 5H ₂ O)																
23	Potassium iodate	(KIO ₃)																
24	Potassium iodide	(KI)																
25	Hydrochloric acid (1N)	(H-N-HCl)																
26	Sodium fluoride	(NaF)																
27	Lanthanum nitrate hexahydrate	(La(NO ₃) ₃ · 6H ₂ O)																
28	Alizarin complexone dihydrate, indicator grade																	
29	Silicon dioxide	(SiO ₂)																
30	Phosphoric acid	(H ₃ PO ₄)																
31	Phenolphthalein	(C ₂₀ H ₁₄ O ₄)																
32	Perchloric acid	(HClO ₄)																

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Syrian Arab Republic - Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorate for Environmental Affairs in Governorate"													Package 5 Reagent for air quality analysis			(2/2)		
No.	Name of Equipment	Specification	Usage	DAM	QTY	Total	Unit	Total	Unit	Total	Price	Total						
		Grade	Amount		HOM	ALP	US\$	US\$	US\$	US\$	US\$	US\$						
33	Sodium hydroxide, pellets	(NaOH)																
34	Ammonia solution, 28 ~ 30%	(NH ₄ OH)																
35	Ammonium acetate, >98%	(CH ₃ COONH ₄)																
36	Sodium acetate, trihydrate	(CH ₃ COONa · 3H ₂ O)																
37	Acetone	(CH ₃ COCH ₃)																
38	Potassium dihydrogen phosphate, for Ox analysis	(KH ₂ PO ₄)																
39	Dipotassium hydrogen phosphate, 12 water	(Na ₂ HPO ₄ · 12H ₂ O)																
40	Potassium iodide	(KI)																
41	Iodine	(I)																
42	Nessler's reagent																	
43	Methylene blue																	
TOTAL																		

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TECHNICAL SPECIFICATIONS (DRAFT)

(Water Quality Analysis Equipment for DFEA of Damascus) (Chemical & Biological Analysis)

11 August, 2005

JICA Expert Team

No	Name of Vehicle	Specification	Qty			Price	
			DAM	ALP	Total	Unit	Total US\$
Package 6 Simple Sampler for air quality monitoring Syrian Arab Republic. Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates (at Environmental Affairs) in Governorate" (/ / /)							
VI	Simple Sampler for air quality monitoring						
1	Sample Sampler	Usage: Collection of NO2, NOx, SO2 gas elements 1. COMPOSITION (1) Main unit : 1 unit (2) Rain prevention container : 1 pc 2. CONDITION 3. SPECIFICATIONS (1) Main unit (Filter holder) 1) Gas sampling method : Molecular diffusion method 2) Number of set filters : 2 Filters 3) Material : Teflon or equivalent (2) Rain prevention container 4. ACCESSORIES (1) Manufacturer's Standard Accessories : 1 set (2) Rain prevention container : 1 pc 5. SPARE PARTS & CONSUMABLE (1) Filter to be prepared with absorbent liquid 1) For NO2, SO2 : 20 sheets * 90 sets 2) For NOx : 20 sheets * 45 sets	120	110	130	360	
TOTAL							

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**Equipment List for Water Quality Analysis (Chemical & Biological Water Analysis)
for DFEA of Damascus**

Package	Item No.	Equipment/Apparatus	Qty
1	Laboratory Equipment		
	1-011	UV/VIS spectrophotometer	1
	1-012	Reagent for UV/VIS spectrophotometer	5 kinds
	1-021	Micro analysis balance	1
	1-031	Balance (6kg)	1
	1-041	Water Quality Analyzer	1
	1-042	Electrode for pH	1
	1-043	Electrode for EC	1
	1-044	Electrode for NO3 ⁻	1
	1-045	Electrode for Cl ⁻	1
	1-046	Electrode for F ⁻	1
	1-047	Electrode for S ²⁻	1
	1-048	Electrode for CN ⁻	1
	1-051	Turbidimeter	1
	1-061	Draft chamber with water/gas cleaning device	1
	1-062	Draft chamber	1
	1-071	Refrigerator	1-4
	1-081	Locker for reagent	4
	1-091	Water Purifier	1
	1-101	Ultrasonic cleaner	1
	1-111	Middle temperature oven	1
	1-121	Muffle furnace	1
	1-131	Autoclave (vertical type)	1
	1-141	Centrifuge	1
	1-151	Shaker	1
	1-161	Hot plate	2
	1-171	Multi magnetic stirrer	2
1-181	Rotary evaporator	1	
1-191	Constant temperature water bath	2	
1-201	Vacuum filtration unit	1	
1-211	Auto-dry decolorator	1	
1-221	Water sampler	1	
1-231	Colony counter	1	
1-241	Laboratory DO meter	1	
1-251	Oil content analyzer	1	
1-261	Solvent for Oil content analyzer	10	
1-271	Solvent recovery unit	1	
2	Glasswares for water quality analysis		See Table C
	Pipettes, beakers, flasks, cylinders, funnels, bottles etc.		
3	Reagent for water quality analysis		See Table R

No.	Name of Equipment	Specification	Model No.	Qty	Unit	Price	Package	Directorates
1	Water Quality Analysis Equipment and Instrument (Chemical and Biological Analysis)							
1-011	UV/VIS Spectrophotometer	<p>Usage: Determination of concentration of NO₃⁻, NH₄⁺-N, Sulfonate, Chromium in water</p> <p>1. CONDITION (1) Electricity : 220 V, 50Hz</p> <p>2. COMPOSITION (1) Reagent : 1 unit</p> <p>3. SPECIFICATIONS (1) Type: UV/VIS Spectrophotometer (2) Spectrum bandwidth: 5 nm or equivalent (3) Wavelength range: 190.0 - 1,100 nm or equivalent (4) Wavelength accuracy: ±1.0 nm or equivalent (5) Wavelength repeatability: ±0.3 nm or equivalent (6) Stray light: Min. 0.05% or equivalent (7) Measurement method: Single beam measurement (8) Photometric range: Absorbance: 0.3 - 3.0 Abs; Transmittance: 0.0 - 200% or equivalent (9) Light source: 20W Halogen lamp (long-life 2,000 hours), Deuterium lamp (socket type) Auto adjustment for maximum sensitivity (10) Monochromator: Incorporates aberration-correcting sensitive blazed holographic grating (11) Detector: Silicon photodiode (12) Display: 6 inch LCD (240x240dot) with CFD (English) (13) Software for spectrophotometer: Programme-pack for water quality measurement (1 set) (14) Accessories: Standard (1 set) (15) Spareparts & Consumables: Standard for 1 year</p>		1				
1-012	Reagent for UV/VIS Spectrophotometer	<p>Usage: Determination of Concentration of PO₄³⁻, NH₄⁺-N, Sulfonate, Cr(VI), Total Cr in water. Used for UV/VIS Spectrophotometer above mentioned.</p> <p>1. Kind and Quantity of Reagents: 1) Reagent for -NO₃-33 sets, 2) Reagent for -NH₄-33 sets, 3) Reagent for sulfonate (anion surfactant) 20 sets, 4) Reagent for hexavalent chromium Cr(VI): 20 sets, 5) Reagent for total chromium (T-Cr): 33 sets</p> <p>Weighing capacity (minimum reading): Max. 210g (0.1mg), 80g (approx.) (0.01mg) (2 range)</p>		5 kinds				
1-021	Micro analysis balance	<p>Electronic balance. Should cover the maximum weighing capacity: 60g. Minimum weighing capacity: 1g</p>		1				
1-031	Balance (6kg)			1				

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Sultan Arab Republic - Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorate of Environmental Affairs in Governorate"		Package 1 (2/6)			
No.	Name of Equipment	Model No.	Q'ty	Unit	Price
				US\$	US\$
1-041	Water Quality Analyzer Usage: Measurement for pH, EC, NO ₃ -, Cl ⁻ , F ⁻ , S ²⁻ . Type: Laboratory type water quality analyzer by using electrodes 1. CONDITION (1) Electricity 220 V 50Hz 2. COMPOSITION (1) Main unit 1 unit (2) Electrode: See below 3. SPECIFICATIONS (1) Display: Color LCD with navigation feature (2) Measurement method: Electrode method (3) Measurement range: pH 0.000 - 14.000, EC (Cell constant: 1000cm ² / 0.1μS/cm), NO ₃ -/Stm, Ion 0.0μ - 999μ/L (4) Repeatability: pH (±0.00) (pH 7.00), Ion (±0.35%) S ²⁻ (pH 6.0), Cl ⁻ (±0.3% + 1 digit) 4. ACCESSORIES (1) Manufacturer's Standard Accessories 1 set 5. SPARE PARTS & CONSUMABLE (1) Standard for 1 year	1			
1-042	Electrode for pH		1		
1-043	Electrode for EC		1		
1-044	Electrode for NO ₃ -		1		
1-045	Electrode for Cl ⁻		1		
1-046	Electrode for F ⁻		1		
1-047	Electrode for S ²⁻		1		
1-048	Electrode for CN ⁻		1		
1-051	Turbidimeter Type: Laboratory type Turbidity meter 1. SPECIFICATIONS (1) Range: 0 - 1999.0 - 1999 NTU 2. ACCESSORIES and SPAREPARTS (1) Standard accessories (2) Spare set of 6 sample cells (3) Serial printer with cable and main adaptor (3) Primary turbidity standard 3.0 NTU (20ml) 1 bottle, Primary standard of 0 NTU (20ml) 1 bottle or equivalent.		1		
1-061	Draft chamber with water/gas cleaning device Type: Draft chamber with gas cleaning device (ventilator) 1. COMPOSITION (1) Main unit 1 set (2) Gas cleaning device (3) Duct and fan for the Draft chamber 2. SPECIFICATIONS (1) Dimension (approx.) 1200W(Max.) x 750D x 2000H (2) Exhaust air: approx. 10m ³ /min (3) Material: Steel with chemical resistant coating		1		
1-062	Draft chamber Type: Standard type (with gas cleaning device) 1. COMPOSITION (1) Main unit 1 set (2) Duct and fan for the Draft chamber 2. SPECIFICATIONS (1) Dimension (approx.) 1300W(Max.) x 750D x 2000H (2) Exhaust air: approx. 10m ³ /min (3) Material: Steel with chemical resistant coating		1		

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Sultan Arab Republic - Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorate of Environmental Affairs in Governorate"		Package 1 (3/6)			
No.	Name of Equipment	Model No.	Q'ty	Unit	Price
				US\$	US\$
1-071	Refrigerator Usage: Preservation of samples Type: Electric refrigeration 1. SPECIFICATIONS (1) Cold room: 0 - 110°C (2) Capacity: Approx. 200 liter (3) Freezer: less than minus 10°C		14		
1-081	Ledger for reagent Usage: Storage of reagents/chemicals Type: Glass sliding doors (topper row), Steel sliding doors (lower row) 1. SPECIFICATIONS (1) Dimension (approx.) 1200W x 400D x 1800H (2) Material: Steel		4		
1-091	Water Purifier 1. CONDITION (1) Electricity 220 V 50Hz 2. COMPOSITION (1) Main unit 1 unit 3. Type (Water purification method): Ion exchange + Distillation 4. SPECIFICATIONS (1) Purified water collected: Ion-exchange water and Double distilled water (2) Capacity: Distilled water (approx. 1.8 ltr/min), Collection of Ion-exchange water (approx. 1 ltr/min), Collection of distilled water (approx. 1 ltr/min) (3) Beaker: Super hard glass (4) Condenser: Super hard glass (5) Heater: Ceramic heater 5. ACCESSORIES and SPAREPARTS Should include standard spareparts, accessories, and consumables for 1 year. Other necessary accessories and consumables such as connection unit, inter-change cartridge, filter, etc. should be fully equipped.		1		
1-101	Ultrasonic cleaner Usage: cleaning of glasswares 1. SPECIFICATIONS (1) Output: Approx. 100W (2) Capacity: Approx. 3 liter 2. ACCESSORIES (1) Timer (2) Standard accessories		1		
1-111	Muffle temperature oven Usage: Drying of glasswares 1. CONDITION (1) Electricity 220 V 50Hz Type: Free convection type 2. SPECIFICATION (1) Operating temp. range: from temp. 10°C to 700°C (2) Heater: 10kw (approx.) (3) Dimension: approx. 700W x 500D x 800H (4) Capacity: approx. 90 liter (5) Operation function: Fixed temperature operation, Auto stop, Auto start, Quik auto stop 3. ACCESSORIES and SPAREPARTS (1) Standard		1		

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Sultan Arab Republic - Equipment for The Project for Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate						Package 1	
No.	Name of Equipment	Specification	Model No.	Qty	Unit	Price	
					US\$	US\$	
I-121	Muffle furnace	1. CONDITION (1) Electricity : 220 V, 50Hz Type: Electric furnace 2. SPECIFICATION (1) Operating temp range: 100 to 1150°C or equivalent (2) Capacity bins: 3 - 4 liter (3) Heater approx. 1.5kW (4) Temp control: PID control by microprocessor 3. ACCESSORIES (1) Stand (2) Exhaust unit, Time-out output terminal, Temp. output terminal, Sample tray, Exhaust pan		1			
I-111	Autoclave (vertical type)	1. CONDITION (1) Electricity : 220 V, 50Hz Type: Automatic high pressure steam sterilizer (Vertical type) 2. SPECIFICATION (1) Temp. setting range: 105 - 123°C (Sterilization), 150 - 180°C (Drying) (2) Maximum operational pressure: 0.18MPa (3) Interior material: Stainless steel (4) Effective capacity: approx. 20 liter 3. ACCESSORIES (1) Standard		1			
I-101	Centrifuge	1. CONDITION (1) Electricity : 220 V, 50Hz Type: Table top type centrifuge 2. SPECIFICATION (1) Max. speed: 4000 - 5000 rpm (approx) (2) Max. rcf: 3000 x g - 5000 x g (3) Type and number of Rotors and Buckets: Standard (Swing rotor, Angle rotor) 3. ACCESSORIES (1) Standard		1			
I-151	Shaker	Usage: For shaking of separation funnel 1. CONDITION (1) Electricity : 220 V, 50Hz Type: Table top type centrifuge 2. SPECIFICATION (1) Shaking method: Double sided vertical reciprocate shaking or equivalent (2) Shaking speed: approx. 20 to 300 times/min (3) Speed control: Stepless speed control by thyristor/Digital display 3. ACCESSORIES (1) Standard (2) Centrifugal tube holder, Test tube holder, Erlenmeyer flask holder, Separatory funnel holder Plate size: approx. 160 x 160, Heater: ≤ 1000W		2			

Sultan Arab Republic - Equipment for The Project for Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate						Package 1	
No.	Name of Equipment	Specification	Model No.	Qty	Unit	Price	
					US\$	US\$	
I-171	Multi magnetic stirrer	10 - 12 (approx.) piece multi-stirrer, without heating. Stirring capacity: 5 - 1000ml at each place ACCESSORIES Stirrer bar (25mm 20 pcs.)		2			
I-181	Rotary evaporator	1. CONDITION (1) Electricity : 220 V, 50Hz Type: Standard type 2. SPECIFICATION (1) Rotational number control range: 20 to 180 rpm or equivalent (2) Temp. range (water bath): Room temp. +5°C to 95°C (3) Glassware: Standard diagonal (4) Evaporating/Receiving flask: 1.0 liter (5) Built empty approx. 2 liter 3. ACCESSORIES & SPAREPARTS Condenser: 1, Receiving flask: 1 liter, 1, Evaporating flask (2000ml 1, 500ml 1, 300ml 1, 200ml 1, 100ml 1)		1			
I-191	Constant temperature water bath	1. CONDITION (1) Electricity : 220 V, 50Hz 2. SPECIFICATION (1) Stirring method: Stirring by pump (2) Operating temp. range: Room temp. + 5°C to 80°C (3) Interior: Stainless steel (4) Temp. controller: PID control, Temp. sensor: Pt resistance thermometer (5) Temp. setting method: Digital setting (6) Heater: approx. 1.3kW (7) Tank capacity: approx. 27 liter 3. ACCESSORIES Standard accessories, neck top cover.		2			
I-201	Vacuum filtration unit	Usage: Mainly used for measuring of SS in water 1. COMPOSITION Consist of: Bottles for suction filtration, Bottle top filters (Buchner type), rubber stoppers with one hole, Water jet pump (Aspirator), and connection tubes. 2. SPECIFICATION (1) Type of bottle: Bottle for suction filtration, with glass hose connection and reinforced rim (2) Material - Bottle: Borosilicate glass - Bottle top filter: Porcelain with perforated plate - Water jet pump (aspirator): Plastic with gauge (3) Capacity of Bottles (Number): 1000ml(1), 200ml(1), 300ml(1), 1000ml(1), Buchner type filter (Number): Dia 55mm(2), 70mm(2), 90mm(2), 110mm(2) Type: Cabinet type auto dry desiccator equipped with auto dry unit with hygrometer 1. SPECIFICATION (1) Material: Plastic (2) Dimension (approx): 260 x 320 x 470 (3) Inner humidity: To be controlled automatically approx. 30 to 40 %		1			
I-211	Auto-dry desiccator			1			

Table-G List of Glasswares for Laboratory in Damascus DFPA

No.	Name	Specifications	Q'ty
2) Package 2			
2 - 01	Whole Pipettes	Glass, 1 ml, Tolerance: ±0.007 ml or better Glass, 2 ml, Tolerance: ±0.010 ml or better Glass, 5 ml, Tolerance: ±0.015 ml or better Glass, 10 ml, Tolerance: ±0.020 ml or better Glass, 20 ml, Tolerance: ±0.030 ml or better Glass, 50 ml, Tolerance: ±0.050 ml or better Glass, 100 ml, Tolerance: ±0.080 ml or better Glass, 1 ml, Graduation: 0.01 ml, Tolerance: ±0.007 ml or better Glass, 5 ml Graduation: 0.05 ml, Tolerance: ±0.030 ml or better Glass, 10 ml Graduation: 0.1 ml, Tolerance: ±0.050 ml or better Applicable pipette's capacity not more than 2mls, number of values: 3 Capacity: 25ml, number of values: 3	2 2 5 5 5 2 2 2 4 1
2 - 02	Graduated pipettes	50 ml, Glass, Color: clear, Graduation: 10 ml or smaller 100 ml, Glass, Color: clear, Graduation: 20 ml or smaller 200 ml, Glass, Color: clear, Graduation: 20 ml or smaller 300 ml, Glass, Color: clear, Graduation: 50 ml or smaller 500 ml, Glass, Color: clear, Graduation: 50 ml or smaller 1000 ml, Glass, Color: clear, Graduation: 50 ml or smaller 2000 ml, Glass, Color: clear, Graduation: 50 ml or smaller 25 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.04 ml or better, Accessory (standard ground joint and poly stopper) 30 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.06 ml or better, Accessory (standard ground joint and poly stopper) 100 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.1 ml or better, Accessory (standard ground joint and poly stopper) 200 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 ml or better, Accessory (standard ground joint and poly stopper) 500 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 ml or better, Accessory (standard ground joint and poly stopper) 1000 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 ml or better, Accessory (standard ground joint and poly stopper)	1 1 8 5 5 8 5 2 1 8
2 - 03	Pipette Fillers		1
2 - 04	Ceramic mortar		1
2 - 05	Graduated beakers		1
2 - 06	Volumetric Flasks		10
2 - 07	Volumetric Flasks		10
2 - 08	Round bottom Flasks		10
2 - 09	Kjeldahl Flasks		10
2 - 10	Pear shape Flasks		10

No.	Name of Equipment	Specification	Model No.	Q'ty	Unit	Price
1-251	Water sampler	Usage: For collecting water sample from the desired depth of the water body Type: Hydrol type water sampler, or equivalent Capacity: 1000ml. Or equivalent		1	US\$	
1-251	Colony counter	Usage: Detection of bacteria colonies Type: For colony counting by methuenon, acetate probe, or optional marking pen 1. SPECIFICATION Accommodates petri dishes up to 150mm in diameter or equivalent. Glare free fluorescent illumination. Adjustable magnifier. Audible counting signal		1	US\$	
1-251	Laboratory DO meter	Type: Laboratory type		1	US\$	
1-251	Oil content analyzer	Usage: For the determination of the concentration of oil in water 1. CONDITION (1) Electricity 230 V, 50/60 Hz 2. SPECIFICATION (1) Measurement method: Solvent extraction/inducted absorptionometry method (2) Measurement range: 0 mg/liter - 200mg/liter 3. ACCESSORIES (1) Standard (2) Syringe, Beaker, etc.		1	US\$	
1-26	Solvent for Oil content analyzer	Usage: For Oil content analyzer Type of solvent: S-316 (Approx. 500ml/bottle)		10	US\$	
1-271	Solvent recovery unit	Usage: For recovery of solvent 1. COMPOSITION (1) Main unit: 1 set		1	US\$	
	TOTAL					

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No.	Name	Specifications	Qty
2 - 11	Erlenmeyer Flasks	100 ml, Borosilicate glass, color: clear 200 ml, Borosilicate glass, color: clear 300 ml, Borosilicate glass, color: clear 500 ml, Borosilicate glass, color: clear 1000 ml, Borosilicate glass, color: clear	10 10 10 8 2
2 - 12	Erlenmeyer Flasks with Ground Joints	100 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 200 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 300 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 500 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29 1000 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5 5 5 8
2 - 13	Stopper	Fluoroplastic (PTFE) or equivalent, Temperature resistant: -200 to +260°C or more, 10mm type, standard ground joint (NS), NS size: 29/32, Grip type: knurled grip	1
2 - 14	Graduated Cylinders	50 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better 100 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better 200 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better 300 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better 500 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±1.0 ml or better 1000 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better	3 3 3 5 3 2
2 - 15	Konigsmeyer Pipe (Spout)	1 ml 2 ml 3 ml 5 ml 10 ml	8 8 8 8 10
2 - 16	Watch Dish	φ70mm φ90mm φ120mm φ150mm φ180mm	5 8 8 3 3
2 - 17	Separatory funnels	φ100ml, glass φ200ml, glass φ300ml, glass φ500ml, glass	10 10 10 5
2 - 18	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	Capacity: 500 ml, Type of riser tube: leak-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polycarbonate Capacity: 1000 ml, Type of riser tube: leak-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polycarbonate	5 5 5
2 - 19	Beaker with handle	Capacity: 1000 ml, Polypropylene	1
2 - 20	Automatic buret	Automatic buret 25 ml w/1L Reservoir, Color: clear Automatic buret 50 ml w/2L Reservoir, Color: clear Automatic buret 50 ml w/2L Reservoir, Color: amber	2 2 2
2 - 21	Rubber of two ball reams	Injection of air, general use	2
2 - 22	Test Tube with stopper	Test tube, 18(dia.) x 180 (L) mm \$16, 100 pcs/case	1
2 - 23	Stainless Spoon	Stainless Spoon (middle size: 180 mm) 5pc/box	1
2 - 24	Glass rods	Glass rods, 1500 (L) x 5(dia.)mm Glass rods, 1500 (L) x 8(dia.)mm	2 1

No.	Name	Specifications	Qty
2 - 25	Funnels	Soda-lime glass, Angle: 60°, with short stem, φ70 mm Soda-lime glass, Angle: 60°, with short stem, φ100 mm	5 5
2 - 26	Glass tube	Glass tube, 1500 (L) x φ6×φ8mm	2
2 - 27	Stopcock	Stopcock, φ6×φ8mm, Fluoroplastic (PTFE) or equivalent, Temperature resistant: -200 to +260°C or more	1
2 - 28	Pinchcock	Pinchcock (Size M), Stainless steel	5
2 - 29	Screw Cock	Screw Cock (Size M), Stainless steel	5
2 - 30	Stopwatch	1/100 sec stopwatch, Electronic (battery)	1
2 - 31	Micro pipet	2~20 μl 10~100 μl	1 1
2 - 32	Chip for micro pipet	0.5~10 μl, 1000 pcs/package	1
2 - 33	Flow meter	2~200 μl, 1000 pcs/package Float type flow meter with needle valve, 0.05~0.5 L/min, Accuracy: FS±3% Float type flow meter with needle valve, 0.2~2.5 L/min, Accuracy: FS±3%	1 1 1
2 - 34	Heating mantles	For Soxhlet extraction, 4-Place heaters (200W x 4), Applied capacity of flask	1
2 - 35	Fat extractor (soxhlet)	Soxhlet extraction apparatus, 300ml type, SPC joints	5
2 - 36	Thermometer	Mercury type cylinder shape thermometer, -20~100°C	1
2 - 37	Beaker tongs	Tongs for flask	2
2 - 38	Lab jack	Lab jack, 150x150mm, Range of expansion and contraction: 75~245 mm, An upper and lower board is made of the stainless steel.	2
2 - 39	Unit stand	Support stand set: 1.5 mx 1 m, Assembly stick (stainless pipe) Support stand set: 2.0 mx 1 m, Assembly stick (stainless pipe)	1 1
2 - 40	Cork borer	Cork borer sets saw-shaped edge (No. of borers, 12)	1
2 - 41	Muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: φ7mm~13mm, Clamp Holders, SUS 304, Horizontal stick/Prop range: φ13mm~21mm, Open diameter: 5~50 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS	5 5 5
2 - 43	Clamps	Open diameter: 5~80 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS	5
2 - 44	Tweezers	Odonology department tweezers	8
2 - 45	Vacuum hose	Vacuum hose φ8×φ21mm (5 m/ Unit)	1
2 - 46	Rubber tube	Rubber tube φ6×φ13mm (10 m/ Unit)	1
2 - 47	Silicon rubber tube	Silicon rubber tube φ6×φ8mm, (10m/ Unit) Silicon rubber tube φ6×φ10mm, (10m/ Unit) Silicon rubber tube φ8×φ10mm, (10m/ Unit)	1 1 1
2 - 48	Micro line tube	OD φ2.29 mm (5 m)	3
2 - 49	Tube joint	T type, Glass, φ6 x φ8 mm, (10 pcs/ case) Y type, Glass, φ6 x φ8 mm, (10 pcs/ case)	1 1
2 - 50	Support for test tubes	Support for test tubes for 18(dia.) x 180 (L) test tube, Number of partitions: 5 x 10	1
2 - 51	Stopper (silicon rubber)	φ15mm φ20mm φ25mm φ30mm φ35mm φ40mm	8 8 8 3 3 3
2 - 52	Octagon rotator	Teflon coating, φ6.5 x 20 mm Teflon coating, φ7.5 x 25 mm Teflon coating, φ7.5 x 30 mm Teflon coating, φ10 x 40 mm Teflon coating, φ3.0 x 250 mm Teflon coating, φ8.0 x 310 mm	5 5 5 5 1 1
2 - 54	Weighting Paper	Weighting Paper 500pcs/box, Small (Size: approx. 120 x 120 mm)	1

No.	Name	Specifications
2 - 55	Vacuum Pump	(Oil sealed rotary vane vacuum pump. Ultimate vacuum: 9.3 Pa (approx.). Capacity: 20 ~25 liter/min. (approx.). Motor: 100W (approx.). Accessories: Vacuum oil. Power supply: AC220V
2 - 56	Circulating aspirators	Capacity: More than 12~15 liter/min. Aspirators: 2 pcs, Water tank: Polypropylene, Suction entrance: 2 pcs(φ11.5 mm), Outside size: Approx. 360(W)×260(D)×390(H) mm
2 - 57	Micro-syringe	Micro-syringe: 10 μL Micro-syringe: 50 μL
2 - 58	Membrane filter	φ4.5μm, φ47 mm, 100 pcs
2 - 59	pH Paper	pH paper: Roll type, 4 pcs/case
2 - 60	Quartz wool	4~9mm, 10g
2 - 61	Gasigt. syringe	Glass, 100 ml
2 - 62	Tweezers for cell	Type that can be strongly pinched by power of spring
2 - 63	Pipet container	Plastic container or more fine quality. Approx. 450 (W) × 300 (D) × 70 (H) mm
2 - 64	Pipet support	Plastic or stainless steel. Size: Approx. 200×170×250 (H) mm, H type
2 - 65	Stand for micro pipet	Number of sets of syringes : 2 pcs or more
2 - 66	Waste water container	Type: Bottle with grip (shape: Rectangle). Material: Polyethylene, Capacity: 20 L, Color: White, Stopper: Two
2 - 67	Boiling stone	Type: Bottle with grip (shape: Rectangle). Material: Polyethylene, Capacity: 5 L, Color: White, Stopper: One
2 - 68	Flask filtering	1000 ml, Borosilicate glass
2 - 69	Stand for Separatory funnels	For 100 ml separatory funnels, 3 pcs set or more For 200 ml separatory funnels, 5 pcs set or more For 300 ml separatory funnels, 5 pcs set or more For 500 ml separatory funnels, 5 pcs set or more
2 - 70	Seal tape	Teflon made. Approx. 10mm×1.5 m
2 - 71	Paraffin film	4" × 125 feet
2 - 72	Wiping Tissue (Kimwipe)	Wiping Tissue (Small Size 72pack/box)
2 - 73	Pipet cleaner	Inside size of bucket: Approx. 500×φ136 mm, Material: Vinyl chloride
2 - 74	Brush	For bottle washing (small: No2) For bottle washing (middle: No5) For bottle washing (large: No10) For Pipettes
2 - 75	Dorming Shelf (Shelf for the glass apparatus dryness)	For buret φ30 x 95 mm Standard top board, Size: (W)800×(D)510×(H)1600 mm, With water receiving bin made of stainless steel, Vinyl curtain(Incombustibility), Net board (Resin coating). Mesh size 16~18 mm×2pcs; 30~50 mm×1pc, 70~95 mm×1pc
2 - 76	Color comparison tubes	50 ml, with white graduated, With stopping
2 - 77	Tube support	100 ml, with white graduated, With stopping
2 - 78	Pasteur Pipette	For color comparison, For 100ml color comparison tube x10 pcs 150 mm, 1000 pcs, Borosilicate 230 mm, 1000 pcs, Borosilicate
2 - 79	Teflon tube	φ4 mm×φ6 mm, 20m
2 - 80	F Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) rear type (Approx 3.6Kw), It conforms to JIS K-0102.
2 - 81	NiH Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) rear type (Approx 3.6Kw), It conforms to JIS K-0102. The phenol distillation is also possible according to use.
2 - 82	Dropping Bottle	50 ml
2 - 83	Crucible	100 ml Crucible, porcelain, 30 ml Crucible, porcelain, 50ml

No.	Name	Specifications
2 - 84	Porcelain dish tongs	Porcelain dish tongs
2 - 85	Jumbo crucible tongs	Jumbo crucible tongs for use with muffle furnace
2 - 86	Standard Sieve	Approx. φ2000 mm, mesh: 2mm
2 - 87	Weighing Bottle	Approx. φ50mm, H135mm
2 - 88	Conical beaker	250 ml
2 - 89	Petri dishes	50 mm diameter (presterilized) 120 mm diameter (presterilized)
2 - 90	Bottle for sample collection	500 ml, Polypropylene, with screw closure, Wide-mouth bottle,
2 - 91	Rubber Bulb for Small Pipette	Vinyl-methyl Silicon rubber for graduated pipettes (1ml) Vinyl-methyl Silicon rubber for graduated pipettes (5ml) Vinyl-methyl Silicon rubber for graduated pipettes (10ml)
2 - 92	Cleaning Tissue	45 boxes of 200 tissues for wipe out glass ware, etc, Lint-free fiber, Fully absorbent, Size approx. 115 x 215 mm
2 - 93	Gloves	Disposable type, Seamless latex, Solvent-proof, Powdered fit both right and left hands, Size: medium, Packs of 100
2 - 94	Goggles	Plastic, with side guard
2 - 96	Cleaning Agent	For removing grease, oil, wax, dye residue, silicone, etc. Disinfectant action: by active chlorine Dosing: 2 to 10 % in demineralized water PH-Value: approx. 9 or 8 Volume: 10 kg or more/ 1 container Cleaning agent for glassware, Laboratory

Table-R Reagent List for Laboratory in Damascus DFEA

Package 3	name	Specification	Unit	Number
3 - 1	2,2,4-Trimethyl-Pentane	(mixture of isomers) for synthesis		
3 - 2	2,4-Dinitrophenol	α -Dinitrophenol, Use as pH indicator	25g	8
3 - 3	3', 3'', 5', 5''-tetrabromo-pgenolsulfonaphthalen (bromophenol blue)	Use as pH indicator (pH 3.0 - 4.6)	25g	2
3 - 4	Acetic acid CH_3COOH	Assay (acidimetric): min.96.0 %	500ml	4
3 - 5	Acetone CH_3COCH_3	Purity (GC): min.99.0%	1L	4
3 - 6	Ammonia	25% ammonia solution, Assay (acidimetric, NH3): min. 25.0 %	1L	1
3 - 7	Ammonium Iron(III) citrate $\text{C}_6\text{H}_8\text{O}_7 \cdot x\text{Fe} \cdot x\text{H}_2\text{N}$	Assay (iodometric, Fe calculated on dried substance): 17.1 - 18.9%	1kg	1
3 - 8	Ammonium sulfamate $\text{H}_2\text{NSO}_3\text{NH}_4$	Assay (acidimetric): $\geq 99.0\%$	100g	2
3 - 9	Boric acid H_3BO_3	For analysis, Assay (acidimetric): 99.8 = 100.5 %	500g	2
3 - 10	Chloro-benzene $\text{C}_6\text{H}_5\text{Cl}$	For synthesis, Assay (GC, area%): $\geq 99\%$	100ml	3
3 - 11	Chloroform CHCl_3	Purity (GC): 99.0-99.4%	500ml	9
3 - 12	Dichloromethane CH_2Cl_2	Purity (GC): min.99.5%	500ml	7
3 - 13	Dodecyl sulfonic sodium salt $\text{C}_{12}\text{H}_{25}\text{NaO}_2\text{S}$	For biochemistry and surfactant tests, Assay (two-phase titration): $\geq 99.0\%$	250g	2
3 - 14	Ether $(\text{C}_2\text{H}_5)_2\text{O}$	Diethyl ether, Purity (GC): $\geq 99.7\%$	1L	8
3 - 15	Ethylenediaminetetraacetic acid, dipotassium salt dihydrate (EDTA-K2) $\text{C}_{10}\text{H}_{16}\text{K}_2\text{N}_2\text{O}_{10} \cdot 2\text{H}_2\text{O}$	Assay (by complexometry): 99 - 101.5%	100g	4
3 - 16	Hexaammonium heptamolybdate tetra hydrate	32% GR for analysis, Assay (acidimetric): min. 32.0%	1L	3
3 - 17	Hydrochloric acid HCl	Reducing agent, reagent for the preparation of oximes, Assay (manganometric): mini 99%	250g	10
3 - 18	Hydroxylamine hydrochloride $\text{NH}_2\text{OH} \cdot \text{HCl}$	Assay (iodometric): $\geq 99.0\%$	500g	2
3 - 19	Hydroxylamine sulfate $(\text{HON})\text{H}_2\text{SO}_4$	Milk sugar, Use for microbiology	40g	2
3 - 20	Iron(III) chloride hexahydrate $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$	Assay (iodometric): $\geq 98\%$	1kg	1
3 - 21	Lactose monohydrate $\text{C}_{12}\text{H}_{22}\text{O}_{11} \cdot \text{H}_2\text{O}$	Assay (iodometric): $\geq 99\%$	10g	40
3 - 22	L-Ascorbic acid $\text{C}_6\text{H}_8\text{O}_6$	Assay (complexometric): mini99.0%	250g	1
3 - 23	Lead(II) carbonate, basic PbCO_3	Drying agent (Desiccant), Hydrate (about 83% $\text{Mg}(\text{ClO}_4)_2$)	500g	2
3 - 24	Magnesium per chlorate $\text{Mg}(\text{ClO}_4)_2 \cdot x\text{H}_2\text{O}$	For analysis	500g	2
3 - 25	Magnesium sulfate heptahydrate $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	Assay (complexometric): 99.0 - 101.0 %	250g	5
3 - 26	Magnesium sulfate monohydrate	Indicator and microbiology, Assay (spectrophotometrically): $\geq 75\%$	100g	1
3 - 27	Manganese (II) sulfate monohydrate $\text{MnSO}_4 \cdot \text{H}_2\text{O}$	Assay (GC, area%): $\geq 99\%$	250ml	1
3 - 28	Neutral red $\text{C}_{15}\text{H}_{17}\text{ClN}_4$	For analysis, Purity $\geq 99.0\%$	2.5L	3
3 - 29	n-Hexadecane $\text{C}_{16}\text{H}_{34}$	For microbiology	1kg	2
3 - 30	n-Hexane C_6H_{14}	For analysis, Assay (iodometric): ≥ 99.8	250g	4
3 - 31	Peptone	Assay (acidimetric, calculated on dried substance): $\geq 99.0\%$	500g	4
3 - 32	Potassium bromate KBrO_4	For electrolyte solutions, buffer solutions, Assay (argentometric): min. 99.5 %	500g	1
3 - 33	Potassium carbonate K_2CO_3	Assay (iodometric): $\geq 99.5\%$	250g	4
3 - 34	Potassium chloride KCl	Assay (argentometric): min. 97.0%	100g	1
3 - 35	Potassium chromate K_2CrO_4			
3 - 36	Potassium cyanide KCN			

3 - 37	Potassium dichromate $\text{K}_2\text{Cr}_2\text{O}_7$	Oxidizing agent, Assay (iodometric, cal. On dried substance): $\geq 99.9\%$	500g	5
3 - 38	Potassium dihydrogen phosphate KH_2PO_4	Buffer solution, pH value (20 °C): 6.98 - 7.02	500ml	2
3 - 39	Potassium fluoride dihydrate KF	For analysis, Assay (precipitative titration): min. 99 %	250g	2
3 - 40	Potassium hydrogenphosphate			
3 - 41	Potassium hydroxide KOH	Pellets, Assay (acidimetric): min. 85 %	500g	5
3 - 42	Potassium iodide KI	Reagent for the preparation of iodine solution in iodometry, starch paper	250g	10
3 - 43	Potassium nitrate KNO_3	Reagent for oxidative dissolution of organic and inorganic samples, Assay (acidimetric): $\geq 99.0\%$	500g	1
3 - 44	Potassium permanganate KMnO_4	Oxidizing agent, Assay (iodometric): 99.0 - 100.5 %	250g	10
3 - 45	Selenious acid $\text{SiO}_2 \cdot x\text{H}_2\text{O}$	Assay (gravimetric): $\geq 99\%$	1kg	1
3 - 46	Silicic acid $\text{SiO}_2 \cdot x\text{H}_2\text{O}$	Catalyst in the COD determination, Assay (argentometric): 99.8%		
3 - 47	Silver nitrate AgNO_3	Catalyst in the COD determination, Assay (argentometric): 99.5%		
3 - 48	Silver sulfate Ag_2SO_4	Assay (cerimetric): $\geq 99.0\%$	100g	1
3 - 49	Sodium azide NaN_3	Assay (argentometric): $\geq 99.5\%$	100g	2
3 - 50	Sodium chloride NaCl	For microbiology	100g	2
3 - 51	Sodium deoxycholate $\text{C}_{24}\text{H}_{39}\text{NaO}_4$	For microbiology	250g	2
3 - 52	Sodium deoxycholate $\text{C}_{24}\text{H}_{39}\text{NaO}_4$	Assay (precipitative titration): min. 99%	250g	1
3 - 53	Sodium fluoride NaF	Assay (acidimetric): min.99 %	500g	10
3 - 54	Sodium hydroxide NaOH	Soda bleaching lye, 6-14% active chlorine	2.5L	2
3 - 55	Sodium hypochlorite	Assay (argentometric): $\geq 99.5\%$	100g	5
3 - 56	Sodium iodide NaI	Assay (acidimetric): $\geq 99.5\%$	500g	1
3 - 57	Sodium nitrate NaNO_3	Assay (manganometric): mini,99,8%	250g	2
3 - 58	Sodium oxalate $(\text{C}_2\text{O}_4)_2$	Assay (perchloric acid titration, calculated on dried substance): $\geq 99.5\%$	250g	10
3 - 59	Sodium Salicylate $\text{HOC}_6\text{H}_4\text{COONa}$	Anhydrous, Assay (acidimetric): $\geq 99.0\%$	500g	8
3 - 60	Sodium sulfate Na_2SO_4	Assay (iodometric Na2S): 32.0 - 38.0 %	1kg	3
3 - 61	Sodium sulfide Na_2S	Assay (iodometric): 98.0 - 100.5 %	500g	1
3 - 62	Sodium sulfite nonhydrate	For the calibration of pH meters	25g	4
3 - 63	Sodium sulfite Na_2SO_3	Assay (iodometric): 99.5 - 101.0%	500g	6
3 - 64	Sodium tetraborate decahydrate $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$	Assay (GC, area%): $\geq 97\%$	500g	1
3 - 65	Sodium thiosulfate pentahydrate $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$	98% GR for analysis, Assay (acidimetric): min. 98.0%	250g	5
3 - 66	Stearic acid $\text{C}_{18}\text{H}_{36}\text{O}_2$	$\text{c}(\text{H}_2\text{SO}_4) = 0.5 \text{ mol/L (1N)}$	1L	1
3 - 67	Sulfamic acid (aminosulfonic acid) $\text{H}_2\text{NSO}_2\text{H}$	Purity (GC): $\geq 99.0\%$	500ml	2
3 - 68	Sulfuric acid H_2SO_4	For synthesis, Assay (by acidimetry): $\geq 98\%$	25g	4
3 - 69	Sulfuric acid H_2SO_4			
3 - 70	Tetrachloroethylene C_2Cl_4			
3 - 71	Trans-1,2-Diaminocyclohexane-N, N', N'-tetraacetic acid monohydrate $\text{C}_{14}\text{H}_{22}\text{N}_2\text{O}_8 \cdot \text{H}_2\text{O}$			
3 - 72	α -Bromo-2,3,4,5,6-pentafluorotoluene			

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**Minutes of Meeting
On
The 5th Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic**

Damascus, 18 September 2005

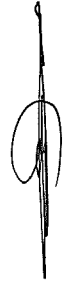
The 5th technical committee (T/C) was held on 18 September, 2005 at the meeting room in the General Commission for Environmental Affairs (GCEA). It was started by an opening statement by Eng. Imad Hassoun, Deputy Minister, Ministry of Local Administration and Environment Affairs (MOLAE), mentioning current situation of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project). Then, Mr. Yoichi Iwai, the Team Leader of the JICA Expert Team made presentation referring the following 4 technical items.


1. Review of the Project Activities up to September 2005
2. Explanation of the Progress Report (1)
3. Technical Proposal of Networking System between GCEA and DFEAs
4. Next Training Activities and Schedule

An attendant list and the agenda of the 5th T/C are attached per ANNEX-1 and ANNEX-2, respectively.

The followings are the issues discussed and commented upon in the 5th T/C meeting.

- (1) The JICA Expert Team, Mr. Yoichi Iwai, mentioned 25 copies of the Progress Report (1) in English were submitted to GCEA. Mr. Yoichi Iwai presented a technical proposal to the T/C members related to establishment of a networking system between GCEA and DFEAs prepared by GCEA. The T/C members agreed to send this technical proposal to the Steering Committee (S/C) to be held on 21 September, 2005. Also, Mr. Yoichi Iwai informed that all documents collected through the Study Tour to Egypt are set in the Directorate of Laboratories in GCEA and are available for additional copies to the T/C members and the counterpart personnel (C/P) of the Project.
- (2) The Director of the Directorate for Environmental Affairs (DFEA) in Hama, Mr. Mr. Ali Jwaied, requested for more training on calibration of equipment and monitoring data interpretation, and for involvement counterparts in a seminar concerning to environmental education. The JICA Expert Team, Mr. Yoichi Iwai, replied that the training on calibration and data interpretation should be carried out in the course of the Project as described in the Project Design Matrix (PDM) of the Record of Discussion (R/D), and also referred involvement more C/Ps in seminars and workshops of the environmental education.
- (3) The Director of DFEA in Hama, Mr. Mr. Ali Jwaied, requested for providing additional sampling bottles and analysis cells because some are out of use due to taking oily wastewater. The JICA Expert Team, Mr. Shunsuke Sato, answered that JICA would provide additional ones for DFEAs under the similar situations, and requested for avoiding samples heavily contaminated by oil because it could cause difficulties to reuse of bottles and cells for another


Eng. Imad Hassoun
Deputy Minister,
Ministry of Local Administration and
Environment Affairs


Mr. Yoichi Iwai
Team Leader
The Expert Team
Japan International Cooperation Agency

List of AttendantsSyrian Side

Name	Position	Organization
Mr. Imad Hassoun	Deputy Minister	MOLAE
Dr. Yasin Moa'Jla	Director of Directorate of Laboratories	GCEA
Ms. Reem Aed Rabboh	Director of Water Safety	GCEA
Dr. Nader Ghazi	Director of Public Awareness	GCEA
Ms. Fathia Moutammed	Chief of Directorate of Laboratories	GCEA
Mr. Ahmad Al-Mohammed	Deputy Director, Directorate of Laboratories	GCEA
Ms. Wareif Yazgi	Deputy Director, Directorate of EIA	GCEA
Mr. Ahmad Khisara	Head, Directorate of Air Safety	GCEA
Mr. Bassam Khairbek	Director	DFEA Damascus
Ms. Mouna Jomna	Laboratory Chief	DFEA Damascus Countryside
Mr. Madian Nasra	Deputy Director	DFEA Damascus Countryside
Mr. Ali Jawaib	Director	DFEA Hama
Mr. Mahmoud Taleb	Director	DFEA Idleb
Eng. Nawaf Othman	Laboratory Chief	DFEA Hasakeh
Ms. Shamsa Aljaseem	Director	DFEA Rakka
Dr. Motsem Alabed	Director	DFEA Sewida
Ms. Fatema Hariri	Director	DFEA Dara'a
Mr. Hasan Marjan	Director	DFEA Tartous
Eng. Wael Jadedd	Staff	DFEA Lattakia
Eng. Reham Agha	Director	DFEA Deir ez Zor
Mr. Hanzeh Sofiman	Director	DFEA Qunaitra

Japanese Side

Name	Position	Organization
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Mr. Shunsuke Sato	Water Quality (Chemical and Biological Analysis)	JICA Expert Team
Mr. Mohammed Alboubosh	Interpreter	JICA Expert Team
Ms. Nada Kat	Interpreter	JICA Expert Team

analysis. In addition, Mr. Shunsuke Sato, informed that the raw wastewater highly contaminated by oil is normally requested only for analysis of oil and grease using an oil content analyzer mainly due to its lesser values for water resources.

- (4) The Director of DFEA in Hama, Mr. Mr. Ali Jawaib, commented that the wastewater from oil factories is the most troublesome pollution, so DFEA in Hama cannot help sampling such oily water. The JICA Expert Team, Mr. Yoichi Iwai, replied that the equipment provided by JICA is not suitable for direct analysis of heavily contaminated water by oil, and the wastewater treatment for oil removal by pollution sources must be considered at first. Mr. Yoichi Iwai, suggested that further discussion could be necessary for formulation of new projects among the T/C members considering regional characteristics of pollution sources in each DFEA.
- (5) The Director of DFEA in Rakka, Ms. Shams Aljaseem, requested more supports for data interpretation because DFEA is sometimes requested comments on water quality condition and on its suitability for specific purpose by the decision makers. Ms. Shams Aljaseem also requested for providing reagents having much convenient analysis range. The JICA Expert Team, Mr. Yoichi Iwai, replied that further support for data interpretation is ready for in the Project and the JICA Expert Team will continue effort to provide more suitable reagents as much as possible.
- (6) The Laboratory Chief of DFEA in Hasakh, Mr. Nawaf Othman, questioned about a method of blank correction for analysis, and requested for a manual preparation of reagent. The JICA Expert Team, Mr. Shunsuke Sato, answered that the blank correction data should be recorded in the equipment, and the JICA Expert Team will support for a manual preparation of reagent.
- (7) The Director of Directorate of Public Awareness in GCEA, Dr. Nader Ghazi, questioned about detailed training contents of the environmental education. The JICA Expert Team, Mr. Yoichi Iwai, answered that the details should be prepared by C/P of the Project with support by the JICA Expert in charge for Environmental Education.
- (8) The Director of DFEA in Tartous, Mr. Hasan Marjan, questioned about a starting date of guarantee period for the equipment provided by JICA. The JICA Expert Team, Mr. Shunsuke Sato, answered that the guarantee period is one year starting from the date delivered by the suppliers.

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

Agenda for the 5th Technical Committee

- 1. Date:**
- Sep. 18 (Sun), 11:00-12:30: at the Meeting Room in GCEA
- 2. Objectives**
1) Review of the Project Activities up to September
2) Comments on the Progress Report (1) (Pr/R-1)
3) Discussion on the Schedule from December 2005 to February 2006
- 3. Agenda**
- | | |
|---|-------------|
| 1. Opening
(by the Deputy Minister of MOLEA) | 11:00-11:05 |
| 2. Presentation
(by the JICA Expert Team) | 11:05-11:35 |
| 1) Review of the Project Activities up to September | |
| 2) Comments on the Progress Report (1) (Pr/R-1) | |
| 3) Discussion on Networking System between GCEA and DFEAs | |
| 4) Discussion on the Schedule from December 2005 to February 2006 | |
| 3. Discussion and Q/A | 11:35-12:30 |
| 4. Preparation of draft M/M
(by the JICA Expert Team) | 12:30- |

End



J.H

Minutes of Meeting
On
The 6th Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic

Damascus, 13 December 2005

The 6th technical committee (T/C) was held on 13 December, 2005 at the meeting room in the General Commission for Environmental Affairs (GCEA). It was started by an opening statement by Dr. Yasin Moa'illa, Director of the Directorate of Laboratories of GCEA, mentioning current situation of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project). Then, Mr. Yoichi Iwai, the Team Leader of the JICA Expert Team made presentation referring the following 3 technical items.

1. Training Contents and Schedule up to March 2006
2. Current Situation of Air and Water Quality Equipment
3. Problems and Difficulties on Monitoring Activities


After series of discussion, the General Director of GCEA, Dr. Akram S. Al Khouri, made closing remarks of the 6th T/C meeting

An attendant list and the agenda of the 6th T/C are attached per ANNEX-1 and ANNEX-2, respectively.

The followings are the issues discussed and commented upon in the 6th T/C meeting.

- (1) Directors of all Directorates for Environmental Affairs (DFEAs) appreciated current and planned training activities of the JICA Expert Team. They, however, expressed their budget constraints to attain planned training courses and to conduct monitoring activities in December 2005, because it was the last month of current fiscal year and their budgets were mostly run out conditions. The JICA Expert Team, Mr. Yoichi Iwai, replied that the planned training courses in December should be rescheduled taking current situations of DFEAs into account and the JICA Expert Team would visit each DFEA to check and instruct monitoring activities.
- (2) Directors of all DFEAs requested for more DFEA staff to GCEA for fulfillment of their mandates and works of the Project, and urged quick supply of sampling vehicles. The General Director of GCEA, Dr. Akram S. Al Khouri, promised to convey this request to the Minister of MOLAE, and he mentioned that sampling vehicles were in final custom clearance and these could be delivered in coming January.
- (3) The Director of the Directorate for Environmental Affairs (DFEA) in Hama, Mr. Ali Iwaid, confirmed an additional glassware supply of the Project. The JICA Expert Team, Mr. Shunsuke Sato answered that it was ready ordered to suppliers and would be delivered in December or January.
- (4) The Deputy Director of DFEA in Sweida, Mr. ReF'at Khodr, requested for providing a stabilizer because their lab works had been suffered from frequent voltage unstableness. The

Dr. Akram S. Al Khouri
General Director
General Commission for Environmental
Affairs


Mr. Yoichi IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency





JICA Expert Team, Mr. Shunsuke Sato, replied that the JICA Expert Team would decide it after checking current situation of lab works.

(5) The Director of DFEA in Lattakia, Ms. Lama Ahmad, requested that 1) a draft lab O/M manual should be prepared in Arabic version for easy understanding, 2) a time period of the round training to DFEAs should be flexible considering actual level of skills and knowledge of the counterparts, and 3) the JICA Expert Team should clarify concrete activities of public awareness and environmental education. The JICA Expert Team, Mr. Yoichi Iwai, answered that the manual was to be in Arabic, the period of round training was to be flexible based on actual conditions of the counterparts, and the activities on public awareness and environmental education should be clarified by the Mr. Kazuyuki Sato in charge during his stay in Syria.

(6) The Directors of DFEA in Aleppo (Mr. Saeid Naïffous), DFEA in Hama (Mr. Ali Jwaïed), and DFEA in Idleb (Mr. Mahmoud Taleb), mentioned that DFEAs have been sometimes asked by the governmental agencies to analyze samples and to prepare analysis data with technical judgment on them. In this connection, the Directors questioned the possibility whether the labs of DFEAs could issue an official letter referring analysis data to reply such requests. The JICA Expert Team, Mr. Yoichi Iwai, commented that the current analysis level of the counterpart could not be enough to evaluate and judge such an important subject at moment because it would require more time to establish QA/QC system in labs. Therefore, Mr. Yoichi Iwai asked the directors to understand the current situation of the labs and to refrain from issuing an official letter related to analysis data of the labs.

(7) The Deputy Director of DFEA in Damascus, Ms. Wadiea' Joha, explained current monitoring activities in Damascus DFEA, and questioned about problems on chloride and NO3 and NO3 analysis should be solved by the JICA Expert Team. Ms. Wadiea' Joha also mentioned several suggestions and recommendations related to the Project, and she submitted these by CD to the JICA Expert Team. The JICA Expert Team, Mr. Yoichi Iwai, highly appreciated an aggressive attitude of the Damascus DFEA to the Project, and announced to continue activities of the Project considering these suggestions and recommendations.

List of Attendants

The 6th Technical Committee

Syrian Side

Name	Position	Organization
Dr. Akram S. Al Khouri	General Director	GCEA
Dr. Yasin Mout'illa	Director of Directorate of Laboratories,	GCEA
Ms. Wadiea' Joha	Deputy Director	DFEA Damascus
Mr. Suleiman Kalo	Director	DFEA Homs
Mr. Saeid Naïffous	Director	DFEA Aleppo
Ms. Mona Joma	Laboratory Chief	DFEA Damascus Countryside
Mr. Ali Jwaïed	Director	DFEA Hama
Mr. Mahmoud Taleb	Director	DFEA Idleb
Ms. Raëifa Esper	Director	DFEA Hasakeh
Ms. Shamsa Aljaseem	Director	DFEA Rakka
Mr. Ref'at Khodr	Deputy Director	DFEA Sweida
Ms. Lama Harfoush	Staff	DFEA Tartus
Mr. Ali Ramadan	Staff	DFEA Tartus
Ms. Lama Ahmad	Director	DFEA Lattakia
Eng. Reham Agha	Director	DFEA Deir ez Zor
Mr. Hanzeh Sofiman	Director	DFEA Qunaitra

Japanese Side

Name	Position	Organization
Mr. Yoichi Iwai	Leader	JICA Expert Team
Mr. Shunsuke Sato	Member	JICA Expert Team
Dr. Rynan Matsue	Member	JICA Expert Team
Mr. Mohammed Doubosh	Interpreter	JICA Expert Team
Ms. Nada Kat	Interpreter	JICA Expert Team