

Attachment-2  
JCC Minutes of Meeting

**MINUTES OF THE MEETING**  
**ON**  
**THE FIRST MEETING**  
**OF**  
**JOINT COORDINATION COMMITTEE (JCC)**  
**FOR THE PROJECT FOR HUMAN RESOURCES DEVELOPMENT**  
**FOR WATER SUPPLY PHASE 2**  
**IN**  
**THE REPUBLIC OF SUDAN**

The 1<sup>st</sup> Joint Coordinating Committee (the JCC) was held on the 15<sup>th</sup> December 2011 for the Project for Human Resources Development for Water Supply Phase 2 (the Project) in the Republic of Sudan, the Public Water Corporation (the PWC) and the Public Water Corporation Training Center (the PWCT) at the PWC conference room. The main topics of the JCC were the activities of the Project and the revision of Project Design Matrix (PDM0). As a result of discussion, the meeting members had approved PDM1 which was proposed by the Japanese Expert Team (the Expert Team) and had a mutual understanding concerning the matter referred to in the document attached hereto.

Khartoum, 15<sup>th</sup> December, 2011

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Mm. Eatidal El Rayah Malik  
Director  
Public Water Corporation Training Center

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Mr. Mitsuro Uemura  
Team Leader  
JICA Project Team

witnessed by

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Mr. Mohamed H. M. Ammar  
Director General  
Public Water Corporation

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Mr. Hiroyuki Mori  
Resident Representative  
JICA Sudan Office

The Expert Team submitted twenty five (25) copies of Work Plan to the PWCT on 15 December 2011. Total 38 JCC members participated in the meeting.

The Expert Team explained the contents of the Project and proposed the modification of the PDM0 (the PDM1). The program and attendance list are shown in the Annex of this document.

As a result of the discussion, PWCT expressed general agreement to the contents of the Work Plan and the PDM1. Major items discussed are described below.

The Minutes of the Meeting contains 8 pages, including the cover sheet and the Annex.

Annex:

1. Program of Joint Coordination Committee (JCC)
2. Attendance List of the JCC First Meeting on 15 December 2011
3. Modified Project Design Matrix (PDM1)

The meeting started by Dr. Hashim, who thanked the attendants to the 1<sup>st</sup> JCC, then he introduced Mr. Igbal to recite some verses from the Holly Quran. Then the participants introduced themselves.

Before the discussion of main content of the JCC, the following 4 persons addressed their greetings:

- Mm. Eatidal Elrayah Malik            General Director of Training Center
- Mr. Mohamed H Ammar                General Director of Public Water Corporation
- Mr. Hiroyuki Mori                     Residence Representative of JICA Sudan office
- Mr. Ryou Ishikawa                    Representative of Embassy of Japan

### **1. Explanation of Work Plan**

Mr. Uemura, the team leader of JICA Experts, explained the content of activity in Phase 1 project and the draft of the Work Plan. The main items in the explanation are work schedule, the Project members, training methodology and budget of the procured equipment.

### **2. Explanation and modification of the Project Design Matrix**

Mr. Matsuo, the team member of JICA Experts, explained the content of the PDM0 at first, which had been already agreed in 10<sup>th</sup> March, 2011. Continuously, he proposed the PDM1 to the JCC members. After the discussion, finally, all its participants agreed the content of PDM1.

The content of modification of PDM0 is as follows:

- (1) Regarding the detail schedule of the project, JICA expert explained the actual schedule is **from November, 2011 to September, 2015**.
- (2) Because of the independent of Southern Sudan on July, 2011, JICA expert proposed that “**Sudan**” shall be substituted for “**Northern Sudan**”.
- (3) JICA expert proposed that “**in Pilot SWCs**” shall be inserted behind of “**Training course implementation structures**” in the OUTPUTS 2 for easy understanding.
- (4) For preventing from misunderstandings, it was proposed that “**all SWCs in Sudan**” shall be substituted for “**each SWC**” in the OUTPUT 4.
- (5) As the 1<sup>st</sup> indicator of the Project Purpose, Evaluation “**A**” was proposed to be adopted. As a result, the sentence is “**Average of the training course evaluation result by PWCT trainees is A.**”.
- (6) As the 2<sup>nd</sup> indicator of the Project Purpose, Evaluation “**B**” was proposed to be adopted. As a result, the sentence is “**Average of the training course evaluation result by pilot SWC trainees is B.**”.
- (7) Regarding the 3<sup>rd</sup> indicator of the Project Purpose, JICA Expert explained that “**functionality ratio**” is too difficult to be used as the indicator under the reason

described below. Each pilot SWC has a lot of water supply facilities, which are water treatment plants, water yards, hand pump facilities, etc. Furthermore, the number of newly constructed water supply facilities after the commencement of the project and perfectly destroyed water supply facilities shall be exclusive from the total number of the water supply facilities for correct understanding of the output of the project. These counting works are too complicated for the staff in pilot SWCs to confirm the accurate number of the facilities. Therefore, after the discussion, the indicator of the project purpose was changed from the “**functionality ratio**” to “**number of rehabilitated water supply facilities**”. Finally, the sentence of the 3<sup>rd</sup> indicator for Project purpose is that “**Annual number of rehabilitated water supply facilities in the pilot SWCs increases from the initial number obtained through baseline survey**”.

- (8) Concerning the 1<sup>st</sup> indicator for the OUTPUTS 1, JICA Expert made a proposal that the time of the finalization of mid-term/long term human resources development plan is by **the end of March 2013**.
- (9) Concerning the 2<sup>nd</sup> indicator for the OUTPUTS 1, JICA Expert suggested that percentage of contributions by training coordinators of PWCT on the planning and implementation of training courses will increase by **100%**.
- (10) Concerning the 3<sup>rd</sup> indicator for the OUTPUTS 1, at first, 8 types of training courses are proposed by JICA Expert for the number of types of training courses which will be conducted in the PWCT annually. However, the director general of PWCT insisted that PWCT can implement the minimum **20 types of training courses** annually.
- (11) Concerning the 1<sup>st</sup> indicator for the OUTPUTS 2, percentage of contribution ratio for training course was discussed for White Nile state and Sennar state. At the result, it was agreed that the percentage of contributions from training coordinators on the planning and implementation of training courses is increased by **80% in White Nile State** and **70% in Sennar State**.
- (12) Concerning the 1<sup>st</sup> indicator for the OUTPUTS 3, the finalizing schedule of the monitoring manual, which is used by PWC and pilot SWCs, was suggested “**by the end of December 2013**”.
- (13) Concerning the 1<sup>st</sup> indicator for the OUTPUTS 4, the finalizing schedule of the human resources development manual was proposed “**by the end of March 2013**”.
- (14) Concerning the 2<sup>nd</sup> indicator for the OUTPUTS 4, the times of workshop implemented, where the outputs of pilot SWCs will be shared and disseminated, was proposed 4 times on the work plan. However, in addition to the target SWCs,

which were nominated as the place for the workshop, other 2 SWCs applied to be the target place for the workshop. Finally, all of the attendances approved that the workshop to share and disseminate the outputs of pilot SWCs are implemented **6 times**.

- (15) Regarding the INPUT of Japan, it was proposed that the target country of training abroad for trainees from pilot SWCs was “**Morocco and Egypt**” from “**Japan and the third country**” under the consideration of the efficiency of training abroad.
- (16) JICA Expert explained some mistakes in the word and mistakes of expression in the PDM0. The mistakes were modified as follows:
- i. “Darfur 3 **Protocol Areas**” shall be modified to “Darfur 3 **States**”
  - ii. “South **Kurdofan**” shall be modified to “South **Kordofan**”
  - iii. “Blue Nile, Kassala and Khartoum **State**” shall be modified to “Blue Nile, Kassala and Khartoum **States**”
  - iv. “PWCT: Public Water Corporation **Training**” shall be modified to “PWCT: Public Water Corporation **Training Center**”.
  - v. “O&M: Operation and **Maintainance**” shall be modified to “O&M: Operation and **Maintenance**”.

## JCC Program

December 15th, 2011

No	Contents	Time	Name	Organization	Position
1	Reciting of Quran	9:30	Mr.Egbal	PWCT	Course Coordinator
2	Introduction of JCC Members	9:35	Dr.Hashim Abdel Rahim	PWCT	Deputy Director of the PWCT
3	Greetings for JCC	9:45	Mm.Eatidal Elrayah Malik	PWCT	Director of the PWCT
4	Greetings for JCC	9:50	Mr.Mohamed H Ammar	PWC	Director General
5	Greetings for JCC	9:55	Mr. Hiroyuki Mori	JICA Sudan Office	Residence Representative
6	Greetings for JCC	10:05	Mr. Ryo Ishikawa	Embassy of Japan	2nd Secretary
7	Explanation of the Phase 2 Project	10:15	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
8	Breakfast	11:00	Mr.Hashim Abdel Rahim	PWCT	Deputy Director of the PWCT
9	Explanation of the PDM	12:00	Mr. Shunsaku Matsuo	JICA Project	JICA Expert
10	Discussion	12:40	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
11	Closing Remarks	13:10	Mm.Eatidal Elrayah Malik	PWCT	Director of the PWCT

**Joint Coordination Committee (JCC)****Attendance List**

Date: December 15, 2011

No	Name	Organization	Position
1	Ryo Ishikawa	Embassy of Japan	2nd Secretary
2	Hiroyuki Mori	JICA Sudan Office	Resident Representative
3	Daishiro Murakawa	JICA Sudan Office	Assistant RR
4	Uemura Mitsuro	JICA Expert	Team Leader
5	Shusaku Matsuo	JICA Expert	Water Quality Expert
6	Tadashi Sato	JICA Expert	Data Management Expert
7	Ryoichi Kimura	JICA Expert	Equipment Management Expert
8	Tarig Hassan	JICA Project	Coordinator
9	Mohamed Hassan Ammar	PWC	Director General
10	Hisham Elamir Yousif	PWC	Manager of Planning
11	Eatidal Elrayah Malik	PWCT	PWCT Director
12	Hashim A. Raheem	PWCT	Administrative Manager
13	Nadia Babkir Shakak	PWCT	WQ Specialist
14	Egbal Bakheit	PWCT	Coordinator
15	Abd Emajed Ahmed	PWCT	Coordinator
16	Hanan M. Mahmoud	PWCT	Secretary
17	Elmontaser Bashary	PWCT	Coordinator
18	Muataz Hassan Abdalmotlab	PWCT	Assistant
19	Samer Ajlawi Ibrahim	PWCT	Assistant
20	Hassan Ali Zain Al Abdeen	PWCT	Assistant
21	Fadoul Mahmoud Nasir	South Darfur SWC	Director General
22	Hassan Adam Mohammed	South Darfur SWC	Team Leader
23	Nasir Eldeen Mahmoud	North Darfur SWC	Director General
24	Mahmoud Jama	West Darfur	Director General
25	Mutaz Shams Eldin Mohamed	Red Sea SWC	Director General
26	Mohamed Abdalla Bashir	West Darfur SWC	Director General
27	Abdel Bagi Nor Eldaim	El Gezira SWC	Director General
28	Sami Omer Al Amin	El Gezira SWC	Planning Dept.
29	Batoul Saad Faggad	El Gezira SWC	Training Coordinator
30	Abass Zen Ahmed	Blue Nile SWC	Deputy Director General
31	Abasher Dafallah	N.Kordofan SWC	Geologist
32	Fatima Mahmoud	Kassala SWC	WES Project, Proj Adm.
33	Elkhifa Abd Elgbar Adam	White Nile SWC	Chief Engineer
34	Mohamed Nour Mohamed	Northern SWC	Mechanical Eng.
35	Ala Eldin Hassan Mohammed	River Nile SWC	Geologist
36	Bashir Elfaki Eltyeb	Khartoum SWC	Project Management
37	Mustafa Ali Mohamed	Ministry of Water Resources	Coordinator
38	Badawi Mohamed Ali	Ministry of Finance	Finance





**MINUTES OF THE MEETING**  
**ON**  
**THE SECOND MEETING**  
**OF**  
**JOINT COORDINATION COMMITTEE (JCC)**  
**FOR THE PROJECT FOR HUMAN RESOURCES DEVELOPMENT**  
**FOR WATER SUPPLY PHASE 2**  
**IN**  
**THE REPUBLIC OF SUDAN**

The 2<sup>nd</sup> Joint Coordinating Committee (the JCC) for the Project for Human Resources Development for Water Supply Phase 2 (the Project) in the Republic of Sudan was held on the 27<sup>th</sup> June 2012, at the Public Water Corporation (the PWC) conference room. The main topics of the JCC were the 1<sup>st</sup> year activities of the Project, the modification of the Project Design Matrix (PDM0) and explanation of the Mid-Term and Long-Term Human Resources Development Plan. As a result of discussion, the JCC members had approved PDM2 and the Mid-Long Term Human Resources Development Plan (Draft) which was proposed by the JICA Expert Team (the Expert Team) and the PWCT.

Khartoum, 27<sup>th</sup> June, 2012

  
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Mm. Eatidal El Rayah Malik  
Director  
Public Water Corporation Training Center

  
\_\_\_\_\_  
Mr. Mitsuro Uemura  
Team Leader  
JICA Project Team

witnessed by  
  
\_\_\_\_\_  
Mr. Mohamed H. M. Ammar  
Director General  
Public Water Corporation

  
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Mr. Hiroyuki Mori  
Resident Representative  
JICA Sudan Office

The 2<sup>nd</sup> JCC was held on June 27<sup>th</sup>, 2012 at 9:30 and total 40 JCC members participated in the meeting. Mm. Eatidal Marik, the Director of the PWCT, Mr. Mohamed Hassan Ammar, the Director General of the PWC, Mr. Ryo Ishikawa, 2<sup>nd</sup> Secretary of Embassy of Japan and Mr. Daishiro Murakawa, JICA Sudan Office expressed the greeting of the 2<sup>nd</sup> JCC.

The Team Leader of the Project Mr. Uemura had a presentation to explain the 1<sup>st</sup> year activities. The main items were procurement of equipment and supply, base line survey results, assistance of the new training center in the Pilot SWCs, present situation of training units in each SWC, the Study Tour in Morocco and the 1<sup>st</sup> training course in the Pilot SWCs etc.

The JICA Expert Team explained the modification of the PDM0 (the PDM2). Finally, all JCC members have approved the PDM2. And the JICA Experts have introduced the outline of the Mid- Long Term Human Resources Development Plan. All JCC members have confirmed the activities and necessary staff in this plan and have agreed to set up the task force in the 2<sup>nd</sup> year activity.

The program, an attendance list, PDM2, Figure of the Water Yard and outline of the Mid-Long Term Human Resources Development Plant are shown in the Annex.

Annex-1.Program of the 2<sup>nd</sup> Joint Coordination Committee (JCC)

Annex-2.Attendance List of the 2<sup>nd</sup> JCC

Annex-3.Modified Project Design Matrix (PDM2)

Annex-4.Definition Figure of the Water Yard

Annex -5.Outline of the Mid- Long Term Human Resources Development Plan

The 2<sup>nd</sup> JCC was opened by Mr. Egbal welcome speech and the introduction of each participant. From SWCs ① Northern, ② River Nile, ③ El Gezira, ④ Gedaref, ⑤ Kassala, ⑥ Red Sea, ⑦ Blue Nile, ⑧ Sennar, ⑨ White Nile, ⑩ North Kordofan, ⑪ South Kordofan, ⑫ North Darfur, ⑬ West Darfur and ⑭ Hawata Project participated in the JCC. Khartoum SWC and South Darfur SWC did not send any message and person.

Before the discussion of main content of the JCC, the following 4 persons have addressed their greetings:

- Mm. Eatidal Elrayah Malik                      Director of PWC Training Center
- Mr. Mohamed H Ammar                          General Director of Public Water Corporation
- Mr. Ryou Ishikawa                                2<sup>nd</sup> Secretary of Embassy of Japan
- Mr. Daishiro Murakawa                        Project Formulation Advisor of JICA Sudan Office

Especially, above greetings, Mr. Ryo Ishikawa strongly requested to the Director General of the PWC Mr. Ammar to construct new training center in Kilo Ten as soon as possible to catch up the project activity.

## **1. Explanation of the 1<sup>st</sup> Year Activity**

Mr. Uemura, the Team Leader of the JICA Project, explained the 1<sup>st</sup> year activity from November 2011 to June 2012 in the Phase 2 project. An explanation items were work schedule, equipment supply, base line survey, and actual situation of new training center in PWCT, study tour in Morocco and possibility of set up the training units in each SWC, the 1<sup>st</sup> training course in Pilot SWCs. In this presentation, Mr. Uemura repeat explained an importance of the human resource development in Sudan. Also, Mr. Uemura strongly requested to the Director General of the PWC Mr. Ammar to construct new training center in Kilo Ten with in 2012.

## **2. Explanation and Modification of the Project Design Matrix**

Mr. Sato explained the content of the PDM2 which had been already agreed on 10<sup>th</sup> March, 2011 in the Preliminary Study for the Phase-2 project. Continuously, the JICA Expert proposed the PDM2 to the JCC members. After the discussion, finally, all its participants agreed the content of PDM2.

The content of modification of PDM0 is as follows:

- (1) Because of the independent of South Sudan on July, 2011, the JICA Expert proposed that “**Sudan**” shall be substituted for “**Northern Sudan**”.
- (2) The JICA Expert proposed that “**in Pilot SWCs**” shall be inserted behind of “**Training course implementation structures**” in the OUTPUTS 2 for easy understanding.
- (3) Regarding the indicator of the Overall Goal, the JICA Expert explained that achievement of this indicator is too difficult to be used as the indicator under the reason described below.

To achieve this indicator, confirmation of current situation of all water supply facilities in Sudan is necessary, but it is very difficult, and the total number of water supply facilities will be increased by frequently.

Definitions of “**water supply facilities**” and “**maintain**” in this indicator are not clear. Furthermore, the project objective is not “**maintenance of water supply facilities**” but “**human resources development for water supply**”.

Therefore, after the discussion, the indicator of the project Overall Goal was changed from the “**The number of water supply facilities in Sudan that are maintained is more than 0**” to “**SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities**”.

- (4) Concerning the 1<sup>st</sup> indicator for the Project Purpose, the JICA Expert proposed that “**trainers**” shall be changed to “**trainees**”. Because of an achievement of the Project Purpose, increasing the number of trainees is more suitable. Furthermore, the number of “**trainees**” will be “**2,000**” based on collected existing data. However, to achieve the number “**2,000**”, construction of the new training center at Kilo Ten Area in Khartoum shall be necessary. Therefore, after the discussion, the 1<sup>st</sup> indicator of the Project Purpose was changed from the “**The number of trainers of training courses in Sudan that are trained is more than 0**” to “**The number of trainees of training courses in Sudan that are trained is more than 2,000 after establishment of New Training Center**”.
- (5) Concerning the 2<sup>nd</sup> indicator for the Project Purpose, functionality rate of water supply facilities in Pilot States shall be determined “**80%**” based on collected existing data. As a result, the sentence is “**Functionality rate of water supply facilities in the pilot SWCs is higher than 80%**”.
- (6) Concerning the 1st indicator for the OUTPUTS 1, the JICA Expert made a proposal that the time of the finalization of Mid-term/Long Term Human Resources Development Plan is by the “**end of March 2013**”.
- (7) Concerning the 2nd indicator for the OUTPUTS 1, the JICA Expert suggested that percentage of contributions by training coordinators of the PWCT on the planning and implementation of the training courses will be increased by “**100%**”.
- (8) Concerning the 3rd indicator for the OUTPUTS 1, as a result of 1st JCC, number of types of the training courses has been determined as the minimum “**20 types**” of training courses annually.
- (9) Concerning the 1st indicator for the OUTPUTS 3, as a result of 1st JCC, the finalizing schedule of the monitoring manual, which is used by the PWC and the pilot SWCs, has been agreed as “**by the end of December 2013**”.
- (10) Concerning the 2<sup>nd</sup> indicator for the OUTPUTS 3, the JICA Expert proposed that “**The percentage of annually maintained water supply facilities**” shall be changed to “**The number of annually maintained water yards**” Because; the evaluation of all types of water supply facilities is too difficult. Furthermore, “**the percentage**” shall be changed to “**the number**”, because the total number of water yards will be changed by the day. Broadly defined, the water yard is consisting of borehole, elevator tank, generator house and public fountains etc. (See Annex-4).
- (11) Concerning the 2nd indicator for the OUTPUTS 4, as a result of the 1st JCC, the times of workshop implemented has been determined as “**6 times**”.
- (12) Regarding the INPUT (4) of Japan, target countries of overseas training were agreed as “**Morocco and Egypt**” on 1<sup>st</sup> JCC. However, the JICA Expert proposed that it shall be changed to only “**Morocco**” under the consideration of the political and natural environmental situation in Egypt, strong Moroccan side eagerness to

implement of the study tour.

Regarding the INPUT (5), the JICA Expert proposed “**Acceptance Trainee from Morocco**” as additional input under consideration of continuous cooperation between Sudan and Morocco.

### **3. Explanation of the Mid Term-Long Term Human Resources Development Plan(Draft)**

According to the PDM and Work Plan of the Project, the Mid-Term and Long-Term Human Resources Development Plan shall be set up in the Phase 2 Project. The 1<sup>st</sup> explanation of the Plan was introduced by the JICA Expert. The draft Plan consists of activities and necessary staff, the detailed and set up duration of both Mid-Term and Long-Term Plan is summarized as per attached Annex-5. All JCC members have agreed to these items to discuss in each SWC and set up the task force team in the 2<sup>nd</sup> year activity.

#### **3-1. Mid-Term Human Resources Development Plan**

##### **3-1-1.Activites**

- (1) Construction of New Training Center at Kilo Ten
- (2) Set up an Effective Organization and Management System in PWCT
- (3) Establishment of the Training Unit in Each SWC
- (4) Establishment of Concrete Training System in Each SWC
- (5) Establishment of Monitoring System of the Training
- (6) Establishment of the Regular Meeting of each Training Center
- (7) Set up the Information Center at PWCT
- (8) Set up the Database of the Staff for all SWCs
- (9) Set up the Management System by Computer

And following two items were requested by the JCC members

- (10) Set up an Official Web Site for each SWC
- (11) Introduction and Installation of New Technology (Solar System etc)

##### **3-1-2. Necessary Staff**

- (1) High Computer Skill Staff
- (2) High Presentation and Report Making Staff
- (3) Added Value or High Quality Staff
- (4) High Motivation Staff

#### **3-2. Long-Term Human Resources Development Plan**

##### **3-2-1.Activites**

- (1) Technical Exchange of Morocco and Sudan
- (2) Global Standard of the PWC Training Center
- (3) Core Training Center in Africa

(4) Good Managed Training Center

Following Item was added by the JCC Member

(5) Involving Private Sector Trainees

### **3-2-2. Necessary Staff**

(1) Actual Generalist who can manage all items

(2) 1<sup>st</sup> Class engineer for each Sector

(3) Staff who can solve any problems

(4) Staff who can communicate by English

Annex-1.Program of the 2<sup>nd</sup> Joint Coordination Committee (JCC)

No	Contents	Time	Name	Organization	Position
1	Reciting of Quran	9:30	Mr.Egbal	PWCT	Course Coordinator
2	Introduction of JCC Members	9:35	Dr.Hashim Abdel Rahim	PWCT	Deputy Director of the PWCT
3	Greetings for JCC	9:45	Mm.Eatidal Elrayah Malik	PWCT	Director of the PWCT
4	Greetings for JCC	9:50	Mr.Mohamed H Ammar	PWC	Director General
5	Greetings for JCC	9:55	Mr. Daishiro Murakawa	JICA Sudan Office	Project Formulation Advisor
6	Greetings for JCC	10:05	Mr. Ryo Ishikawa	Embassy of Japan	2nd Secretary
7	Explanation of the Results of Phase 2 Project	10:15	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
8	Breakfast	11:00	Mr.Hashim Abdel Rahim	PWCT	Deputy Director of the PWCT
9	Explanation of the PDM	12:00	Mr. Tadashi Sato	JICA Project	JICA Expert
10	Explanation of the Mid and Long Term Human Resources Development Plan	12:30	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
11	Discussion	13:10	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
12	Closing Remarks	13:30	Mm.Eatidal Elrayah Malik	PWCT	Director of the PWCT

## Annex-2.Attendance List of the 2<sup>nd</sup> JCC

No	Name	Organization	Position
1	Ms.Tamadir Taha	MIC	Financial bialeteral relation
2	Mr.Ryo Ishikawa	Empassy of Japan	2nd Secretary
3	Mr.Daishiro Murakawa	JICA Sudan Office	Assistant RR
4	Ms.Hisae Kato	JICA Sudan Office	Project Formulation
5	Mr.Mitsuro Uemura	JICA Expert	Team Leader
6	Mr.Tadashi Sato	JICA Expert	Data Management Expert
7	Mr.Mohamed Hassan Anmar	PWC	D.G
8	Mm.Fatidal Elrayah Malik	PWCT	PWCT Director
9	Ms.Nadia Babkir Shakak	PWCT	WQ Specialist
10	Mr.Egbal Bakheit	PWCT	Coordinator
11	Ms.Hanan M. Mahmoud	PWCT	Secretary
12	Mr.Elmontaser Bashary	PWCT	Coordinator
13	Mr.Muataz Hassan Abdalmotlab	PWCT	Assistant
14	Mr.Hassan Ali Zain Al Abdeen	PWCT	Assistant
15	Ms.Safya Ali Babiker	PWCT	Assistant(Lab.)
16	Ms.Tawasel Mohamed Ali	PWCT	Assistant(Lab.)
17	Ms.Eman K hider Hussien	PWCT	Assistant (KTC)
18	Ms.Saraf Eldin Mahmoud	PWCT	Assistant
19	Mr.Safê Eldawla Ali	PWCT	Supervisor (Residence)
20	Mr.Hassan Ali Elhaj Elmahi	Northern SWC	D.G
21	Mr.Mohamed Abdalla Bashir	West Darfur	D.G
22	Mr.Nasir Eldeen Mahmoud	North Darfur SWC	D.G.
23	Mr.Gaafar Abdalla	River Nile SWC	D.G.Deputy
24	Mr.Hassan Adam Mohamed	South Darfur SWC	Engineer
25	Ms.Gada Ali Osman	River Nile SWC	Engineer
26	Mr.Hassab Alla Hammad	S.Kordofan SWC	Director Manager
27	Mr.Makin M. Toto	N.Kordofan	Projects Manager
28	Mr.Salah Mohamed Yousif	Blue Nile SWC	D.G.
29	Mr.Mubarak Fateh Elyhman	Red Sea SWC	D.G.
30	Ms.Maha Eltayeb	Red Sea SWC	Lab. Chemist
31	Mr.Abu Zaid M. Ali	Kassala SWC	Representative
32	Mr.Algeili A. Ahmed	White Nile SWC	Administrative
33	Mr.Ahmed Eltyeb Suliman	White Nile SWC	Director of Finance
34	Mr.Elsadig M.Tahameed	White Nile SWC	D.G.
35	Mr.Zakria Sdeeg M. A	Sennar SWC	M.Engineer
36	Mr.Alsari Karsaleldin	Sennar SWC	D.G.Deputy
37	Mr.Jalal Basheir Doelbit	Sennar SWC	Director of SWCT
38	Mr.Mohamed Abdel GadirMahdi	El Hawata W.C	D.G.
39	Mr.Mustafa Ibrahim Mustafa	Gedaref SWC	D.G.
40	Mr.Sami Omer Al Amra	El Gezira SWC	Planning Dept.



Annex-3.Modified Project Design Matrix (PDM2)

Project Design Matrix (PDM2)  
 Project title: Project for Human Resources Development for Water Supply Phase 2  
 Duration: November, 2011 ~ September, 2013  
 Implementation Agency: PWC  
 Target area: 17 States in Sudan  
 Target groups: PWC, PWCT, SWCs

Date: June 27, 2012

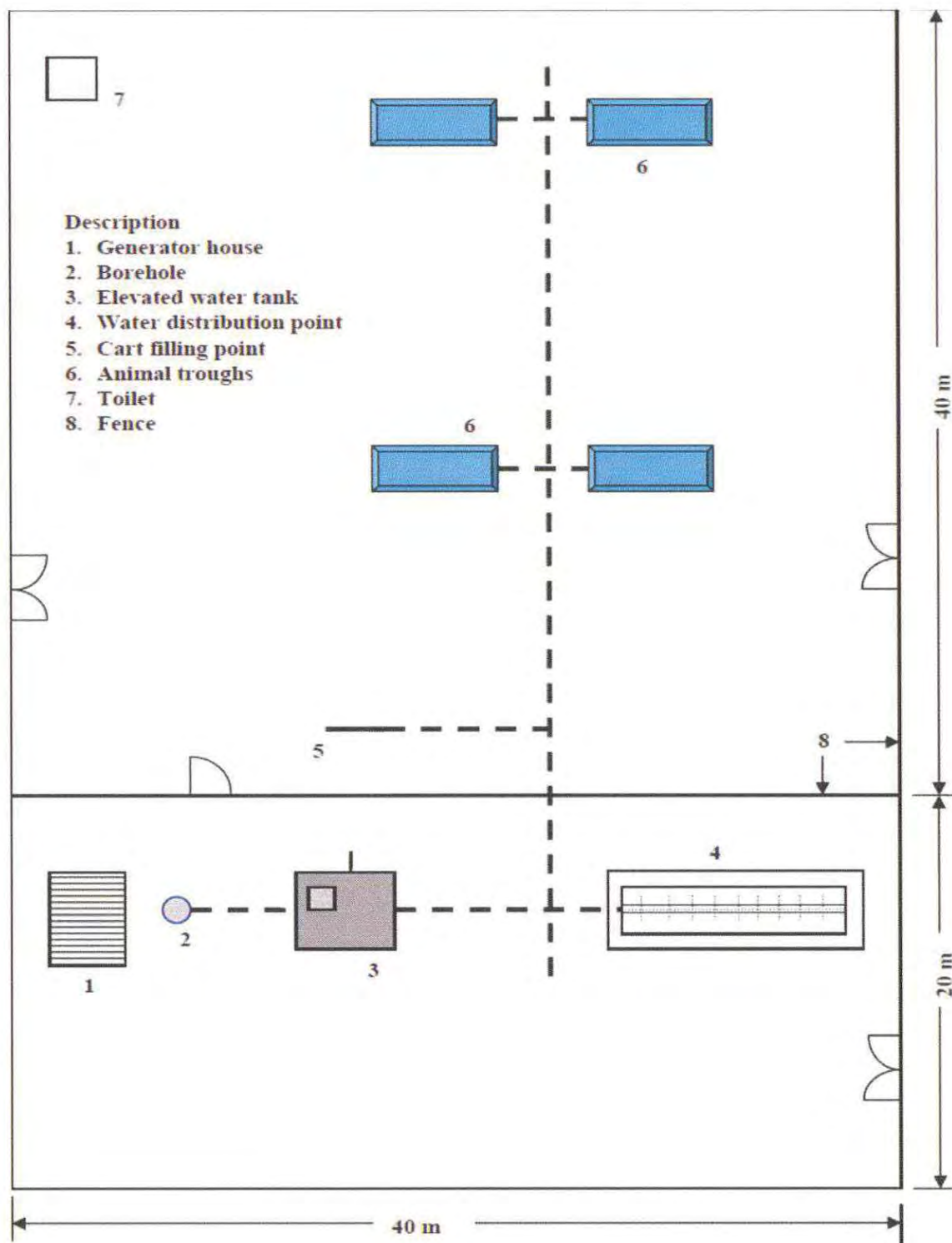
Narrative Summary	Indicators	Means of Verification	Important Assumptions
< Overall Goal > Water supply system is properly managed in Sudan	SWC staff utilize their knowledge and technical skills to maintain and operate water supply facilities		1. Sudan's policies for human resources development for water supply does not change drastically 2. Trainings are implemented continuously in SWCs(excluding pilot SWCs)
< Project Purpose > Human resources in water supply sector are properly trained in Sudan	1. The number of trainees of training courses in Sudan that are trained is more than 2000 after establishment of New Training Center 2. Functionality rate of water supply facilities in the pilot SWCs is higher than 80%	1. PWCT training implementation report 2. Pilot SWC training implementation report 3. Pilot SWC monitoring activities report	1. PSWC's staff who completed training courses do not leave SWC 2. There are no climate changes or disasters that affect the operations water facilities
< OUTPUTS > 1. Training courses are implemented by PWCT based on its mid-term/long-term human resources development plan	1. Mid-term/long-term human resources development plan is completed by March 2013 2. Percentage of contributions from training coordinator on the planning and implementation of training courses increases by 100% 3. Training courses at PWCT are implemented more than 20 times annually	1. Mid-term/long-term human resources development plan 2. PWCT training coordinator questionnaire Japanese expert questionnaire 3. PWCT training implementation report	1. Necessary budget, personnel, equipment, etc are provided in a timely and appropriate
2. Training course implementation structures in Pilot SWCs are developed by Pilot SWCs in collaboration with PWCT	1. Contributions from training coordinators on the planning and implementation of training courses 2. Training courses are implemented according to the SWC training implementation plan	1. Pilot SWC training coordinator questionnaire Japanese expert questionnaire 2. Pilot SWC training implementation report	
3. Monitoring system is established within PWC and pilot SWCs for training course implementation and O&M of water supply system of pilot SWCs	1. Monitoring manual is completed by December 2013 2. Monitoring activities are implemented according to schedule 3. The number of annually maintained water yards** is increased more than 100	1. Monitoring manual 2. Monitoring report 3. Monitoring report	
4. Training course implementation structure is developed within each SWC in Sudan in collaboration with PWCT	1. Human resources development manual is completed by March 2013 2. Workshops in state and disseminate the outputs of pilot SWCs are implemented 6 times	1. Human Resources Development Manual 2. Workshop report	
< ACTIVITIES > 1-1. PWCT elaborates draft plan for mid-term/long-term human resource development 1-2. PWCT prioritizes actual needs for the training courses 1-3. PWCT elaborates its training implementation plan based on the draft plan for mid-term/long-term human resource development 1-4. PWCT implements training courses based on the training course implementation plan 1-5. PWCT evaluates the training courses 1-6. PWCT revises training course contents, textbooks and manuals based on the evaluation results of the training courses 1-7. PWCT improves its capacity responding to the expansion of training center 1-8. PWCT finalizes the mid-term/long-term human resources development plan, which is to be authorized by the government of Sudan 2-1. PWCT strengthens its leadership through the support of below activities of SWC 2-2. Pilot SWC establishes training units within the organization 2-3. Pilot SWC develops the draft SWC activities plan 2-4. Pilot SWC prioritizes actual needs for the training courses 2-5. Pilot SWC develops training course implementation plan based on the priority 2-6. Pilot SWC training unit develops training course curriculum/including OJT in Localities and textbooks 2-7. Pilot SWC training unit implements training courses 2-8. Pilot SWC training unit evaluates the training courses 2-9. Pilot SWC training unit revises training course curriculum and textbooks based on the evaluation results of the training courses 2-10. Pilot SWC reflects the monitoring result of draft SWC activities plan to training course implementation plan 3-1. PWC and Pilot SWC establish monitoring units within the organization 3-2. PWC develops the draft version of monitoring manual to be used by pilot SWC 3-3. Pilot SWC implements baseline survey on the O&M status of current water supply system 3-4. Pilot SWC regularly monitors the current situation of training implementation, examples identified in the State, and O&M of water supply system based on the draft of monitoring manual 3-5. PWC and PWCT analyze and evaluate the monitoring result and give feedbacks such as lessons learned and good practices etc. to SWC monitoring unit 3-6. PWC maintains and manages monitoring data as information source 3-7. PWC finalizes monitoring manual based on the evaluation of monitoring of training courses and O&M of water supply system 4-1. PWCT develops Human Resources Development Manual to each SWC based on the outputs of 1, 2 and 3 4-2. Each SWC (excluding pilot SWC) establishes training unit within the organization 4-3. PWCT implements workshop/in state and disseminate the outputs of pilot SWC activities, and distribute Human Resources Development Manual to each SWC 4-4. Each SWC (excluding pilot SWC) develops training course implementation plan		<< INPUTS >> 1. Japanese side (1) Experts (2) Team leader: training course management (3) Organizational management Administration (4) Water supply facilities management (Water treatment plant/pipe line system) (5) Machinery and electric equipment/Equipment management (6) Well management (7) Data management/Monitoring (8) Water quality control and management (9) Community sensitization (2) Equipment (1) Necessary equipment for PWCT new training courses (2) Necessary equipment for pilot SWCs training courses (3) Necessary equipment for other SWCs (excluding Darfur 3 States, South Kordofan, Blue Nile, Kassala and Khartoum States) (3) Project activities fee (4) Training in Morocco (5) Acceptance Trainers from Morocco 2. Sudanese side (1) Allocation of counterpart and administrative personnel (1) Project Director (2) Project Manager (3) Counterparts (2) Allocation of land, buildings and facilities (1) Office space for Japanese experts in the building of PWC (2) Office space for JICA experts in the building of pilot SWCs (3) Training space in PWCT and pilot SWCs (4) Other necessary facilities, equipment and materials for the administration of the Project (3) Project activities fee (4) Construction of kato ten training center (5) Procurement of office equipment and furniture for the training center	1. Budget of PWC, PWCT, and SWCs does not drastically decrease 2. Organizational restructuring does not occur for counterparts 3. The number of trained SWC staff leaving the organization is not significant 4. Budget, human resources, and necessary equipment for project implementation are properly provided < Pre-Conditions > 1. The economic situation does not worsen than that of initiation period of project implementation 2. Political conflicts do not occur 3. Organization (personnel) and budget at PWC, PWCT and SWC does not change drastically

< Remarks >  
 PWC: Public Water Corporation, PWCT: Public Water Corporation Training Center, SWC: State Water Corporation, O&M: Operation and Maintenance  
 \*Monitoring manual includes the guideline of monitoring activities, the mandate of monitoring unit, the monitoring activity schedule and the reporting schedule from SWC and PWC  
 This manual is used for the monitoring of SWC training course implementation, good practices and lessons learned which are shared with other SWCs, and maintenance of water supply facilities in SWC.

\*\*Water yard is consisting of borehole, elevator tank, generator house and public fountains

at2-16

Annex-4. Definition Figure of the Water Yard



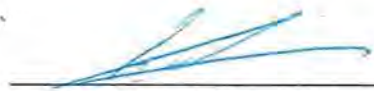
## Annex -5.Outline of the Mid- Long Term Human Resources Development Plan


Activity and Necessary Staff	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>1.Mid Term HRD Plan</b>															
<b>1-1. Activity</b>															
(1) Construction of New Training Center at Kilo Ten															
(2) Set up an Effective Organization and Management System in PWCT															
(3) Establishment of the Training Unit in Each SWC															
(4) Establishment of Concrete Training System in Each SWC															
(5) Establishment of Monitoring System of the Training															
(6) Establishment of the Regular Meeting of each Training Center															
(7) Set up the Information Center at PWCT															
(8) Set up the Database of the Staff for all SWCs															
(9) Set up the Management System by Computer															
(10) Set up an Original Web Site in Each SWC and PWCT															
(11) Introduction and Installation of New Technology( Solar System)															
<b>1-2. Necessary Staff</b>															
(1) High Computer Skill Staff															
(2) High Presentation and Report Making Staff															
(3) High Added Value or High Quality Staff															
(4) High Motivation Staff															
<b>2.Long Term HRD Plan</b>															
<b>2-1. Activity</b>															
(1) Technical Exchange of Morocco															
(2) Global Standard of the PWC Training Center															
(3) Core Training Center in Africa															
(4) Good Maintained Training Center															
(5) Involving Private Sector Trainees															
<b>2-2. Necessary Staff</b>															
(1) Actual generalist who can manage all items															
(2) 1st Class Engineer for each sector															
(3) Staff who can solve any problems															
(4) Staff who can communicate by English															


ON  
**THE 3<sup>rd</sup> JOINT COORDINATION COMMITTEE (JCC3)**  
 FOR  
**THE PROJECT FOR HUMAN RESOURCES DEVELOPMENT**  
**FOR WATER SUPPLY PHASE 2**  
 IN  
**THE REPUBLIC OF SUDAN**

The 3<sup>rd</sup> Joint Coordinating Committee (the JCC) was held on the 8<sup>th</sup> November 2012 for the Project for Human Resources Development for Water Supply Phase 2 (the Project) in the Republic of Sudan, the Public Water Corporation (the PWC) and the Public Water Corporation Training Center (the PWCT) at the PWC conference room. The main topics of the JCC were the activities of the Project and the discussion of the human resources development for water supply. Due to delay of official announcement of changing name of the PWCT, the modification of the Project Design Matrix (PDM) is postponed by the 4<sup>th</sup> JCC in April 2013. As a result of discussion, the meeting members had approved the activities for the human resources development for water supply, and had a mutual understanding concerning the matter referred to in the document attached hereto.

Khartoum, 8<sup>th</sup> November, 2012

  
 \_\_\_\_\_  
 Mm. Eatidal El Rayah Malik  
 Director  
 Public Water Corporation Training  
 Center

witnessed by  
  
 \_\_\_\_\_  
 Mr. Mohamed H. M. Ammar  
 Director General  
 Public Water Corporation

  
 \_\_\_\_\_  
 Mr. Mitsuro Uemura  
 Team Leader  
 JICA Project Team

  
 \_\_\_\_\_  
 Mr. Hiroyuki Mori  
 Resident Representative  
 JICA Sudan Office

Total 37 JCC members participated in the meeting.

The Expert Team explained the contents of the Project and discussed “the future activities for human resources development for water supply” with director of the PWCT and representative of SWCs. The program and attendance list are shown in the Annex of this document.

As a result of the discussion, the PWCT expressed general agreement. Major items discussed are described below.

The Minutes of the Meeting contains 8 pages, including the cover sheet and the Annex.

Annex:

1. Program of Joint Coordination Committee (JCC)
2. Attendance List of the 3<sup>rd</sup> JCC Meeting on 8<sup>th</sup> November 2012
3. Discussion Items for the JCC

The meeting started by Mr. Egbal, who thanked the attendants to the 3<sup>rd</sup> JCC, then he recited some verses from the Holly Quran. Then the participants introduced themselves.

Before and after the discussion of main content of the JCC, the following 6 persons addressed their greetings:

- Mm. Eatidal Elrayah Malik            General Director of Training Center
- Ms. Hisae Kato                            Project Formulation Adviser of JICA Sudan Office
- Mr. Hiroyuki Orikasa                  Deputy Chief of Mission of Embassy of Japan
- Mr. Mohamed H. Ammar                 Director General of the PWC
- Mr. Mohamed A. Babiker Shina        Minister of Physical Planning and Public Utilities in White Nile
- Mr. Al Fatih Aziz                         Minister of Physical Planning and Public Utilities in North Darfur

## **1. Explanation of Work Plan**

Mr. Uemura, the team leader of the Project, explained the content of the 2<sup>nd</sup> year's activity in Phase 2 Project. The main items in the explanation are general information of water sector in Sudan, achieved activity in the 1<sup>st</sup> year activities and an activity plan for the 2<sup>nd</sup> year.

## **2. Discussion of the human resources development for water supply**

Mr. Uemura proposed the activity plan for the “human resources development for water supply” to the Director of the PWCT and representatives of the SWCs, and discussed it with all participants. After the discussion, finally, all participants agreed the content of the following discussion items.

### **(1) PWCT New Training Center**

The Director of the PWCT mentioned that the commencement of the construction of the New Training Center in Khartoum will be by the end of December, 2012.

### **(2) The 2<sup>nd</sup> Joint Seminar in El Gezira and Regular Meeting of the Director of each training center**

Mr. Uemura proposed holding the regular meeting of director of the training center (hereinafter refer to “Director Meeting”). All participants approved holding it 4 times per

year. The 1<sup>st</sup> Director Meeting will be held in El Gezira State at the same meeting of the 2<sup>nd</sup> Joint Seminar on 10<sup>th</sup> November, 2012, and the 3<sup>rd</sup> Director Meeting will be held in Northern State on February, 2013.

(3) Regulation of the Training Center

For the prevention of outflow of the human resources to overseas, participants approved the making efforts for this issue. Mr. Uemura proposed an obligation for at least five year's work for each staff. The model regulation of the training center will be prepared by the PWCT and it will be discussed on the next Director Meeting.

(4) Confirmation of the water supply ratio

Mr. Uemura explained an authorized water access ratio in Sudan. All participants inspected the data of each state. However, this authorized data was based on the population; the present access ratio in each state is lower than this data. Therefore, the Director of the PWCT and JICA Experts requested a submission of the actual water access ratio in 2011 and 2012 to each SWC. The representative from each SWC approved on this request.

(5) Project implementation system for the stable water supply in Sudan

Mr. Uemura introduced the imagination of "Project implementation system for the stable water supply", and explained relationship between the training, securement of budgets and equipment supply. The Human resources development by the training center is one of approaches, concrete security of budget, the project implementation and equipment supply shall be conducted by the government of Sudan for stable drinking water supply in Sudan.

(6) Study Tour in Morocco and invitation of Moroccan Experts

Mr. Uemura explained the plan of "Study Tour in Morocco and Invitation of Moroccan Experts". The first invitation of Moroccan Experts will be conducted from 9<sup>th</sup> December to 16<sup>th</sup> December, 2012, and they will visit to the training center of the PWCT, El Gezira State, Gedaref State and Kassala State.

For the Study Tour in Morocco on April, 2013, a participant from Gedaref State will be shifted to River Nile State.

(7) Collaboration of other project and other donor

The JICA Experts proposed the continuous collaboration of other project which are "Capacity Development Project for Provision of the Services for Basic Human Needs in

Kassala” and “Human Resources Development Project for Darfur and the Three Protocol Areas”. Furthermore, the JICA Experts advised the information sharing between the PWCT and the SWCs about the other donor’s activities, particularly for activities for the human resources development. The representative from each SWC approved it.

(8) Public relation

The JICA Experts request a support for the public relations activity which through mass media for the acknowledgment of the project. The representative from each SWC approved it.



## Annex-1 .Program of the JCC

No	Contents	Time	Name	Organization	Position
1	Reciting of Quran	9:30	Mr.Egbal	PWCT	Course Coordinator
2	Introduction of JCC Members	9:35	Mr.Egbal	PWCT	Course Coordinator
3	Greetings for JCC	9:45	Mm.Eatidal Elrayah Malik	PWCT	Director of the PWCT
4	Greetings for JCC	9:50	Ms. Hisae Kato	JICA Sudan Office	Project Formulation Adviser
5	Greetings for JCC	10:00	Mr. Hiroyuki Orikasa	Embassy of Japan	Deputy Chief of Mission
6	Explanation of the Phase 2 Project	10:10	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
7	Greetings for JCC	10:40	Mr.Mohamed H Ammar	PWC	Director General
8	Greetings for JCC	10:45	Mr. Mohamed A.Babiker Shinaibo	Minister	Ministry of Physical Planning & Public Utilities:White Nile State
9	Mr.Alfatih Aziz	10:50	Minister of Physical Planning & PU.	Minister	Ministry of Physical Planning & Public Utilities: North Darfur State
10	Breakfast	11:00	Mr. Bashary Ibrahim	PWCT	Course Coordinator
11	*Discussion	12:00	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
12	Closing Remarks	14:30	Mm.Eatidal Elrayah Malik	PWCT	Director of the PWCT
*	<b>Discussion Items</b>				
	1. Importance of the Project Implementation (after training)				
	2. Set up the Regulation of the Training Projects				

**Annex-2 .Attendance List**

No	Name	Organization	Position
1	Mr.M.A Babekir Shinab	White Nile SWC	Minister of Physical Planning &PU.
2	Mr.Alfatih Aziz	North Darfur SWC	Minister of Physical Planning &PU.
3	Mr.Hiroyuki Orikasa	Embassy of Japan	Deputy Chief of Mission
4	Mr.Daishiro Murakawa	JICA Sudan Office	Staff
5	Ms.Hisae kato	JICA Sudan Office	Project Formulation
6	Mr. Abdelgader Babiker	JICA	Program officer
7	Mr.Uemura Mitsuro	JICA Expert	Team Leader
8	Mr.Tadashi Sato	JICA Expert	Data Management Expert
9	Mr.Jun Onedera	JICA Expert	Organizational Management Expert
10	Mr.Ryoichi Kimura	JICA Expert	Equipment Management Expert
11	Ms. Ida Veileborg	UNOPS	Program officer
12	Mr.Nihal Samarasinghe	UNOPS	Project Manager
13	Mr.Mohamed Hassan Ammar	PWC	D.G
14	Ms.Eatidal Elrayah Malik	PWCT	PWCT Director
15	Mr.Egbal Bakheit	PWCT	Coordinator
16	Ms.Hanan M. Mahmoud	PWCT	Secretary
17	Mr.Elmontaser Bashary	PWCT	Coordinator
18	Mr.Muataz Hassan Abdalmotlab	PWCT	Assistant
19	Ms.Safya Ali Babiker	PWCT	Assistant(Lab.)
20	Ms.Tawasel Mohamed Ali	PWCT	Assistant(Lab.)
21	Ms.Eman Khider Hussien	PWCT	Assistant (KTC)
22	Mr.Saraf Eldin Mahmoud	PWCT	Assistant
23	Mr.Mohamed Yahia	PWCT	I.T
24	Mr.Hassan Ali Elhaj Elmahi	Northern SWC	D.G
25	Mr.Elsadig M.Tahameed	White Nile SWC	D.G.
26	Mr. Mergani Seddig Hamed	North Kordofan SWC	D.G.
27	Mr.Idris Dabaka Adam	South Darfur SWC	D.G.
28	Mr.Almadani Alkhidir	Sennar SWC	D.G.
29	Mr.Ezarig Gabier Hamid	South Kordofan SWC	D.G.
30	Mr. Yassir Elkinani	South Kordofan SWC	WES P.M
31	Jalal Basheir Doelbit	Sennar SWC	Director of SWCT
32	Mr.Gaafar Abdalla	River Nile SWC	D.G.Deputy
33	Ms.Batoul Saad Faggad	ElGazira SWC	Director of SWCT
34	Mr.Bedreldin Abdalla	ElGazira SWC	WES P.M
35	Mr.Abu Zaid M. Ali	Kassala SWC	Representative
36	Mr.Seed A.M. Elkhir	Red Sea SWC	Representative
37	Mr.Mohamed Hassan Mohamed	West Darfur SWC	Representative

### **Annex-3. Discussion Items for the JCC**

1. PWCT New Training Center(Mm. Eatidal)
2. 2<sup>nd</sup> Joint Seminar in Er Gezira SWC (Mr. Uemura)
3. Set up the Director Meeting of the Training Center(Mr. Uemura)
  - (1) How to share and transfer the PWCT experience and the Training Management System.
  - (2) How to establish the Human Resources Development System in State level.
4. Regulation of the Training Center(Mm. Eatidal)
  - (1) How to protect the change of job from Sudan to other countries (Saudi Arabia etc.).
  - (2) How to maintain the staff motivation.
5. Confirmation of the Water Supply Access Ratio(Mr. Uemura)  
See attached paper
6. About Relationship between the Training, Security of Funds and Equipment Supply (Mr. Uemura)  
See attached figure
7. Study Tour in Morocco and Invitation of Moroccan Expert(Mr. Uemura)  
See attached paper
8. Collaboration of Other Projects(Mm.Eatidal)
9. Public Relations (Mr. Uemura)

**MINUTES OF THE MEETING  
ON  
THE 5<sup>TH</sup> JOINT COORDINATION COMMITTEE (JCC5)  
FOR  
THE PROJECT FOR HUMAN RESOURCES DEVELOPMENT  
FOR WATER SUPPLY PHASE 2  
IN  
THE REPUBLIC OF THE SUDAN**

The 5<sup>th</sup> Joint Coordinating Committee (the JCC) was held on the 31<sup>st</sup> October, 2013 for the Project for Human Resources Development for Water Supply Phase 2 (the Project) in the Republic of Sudan, the Drinking Water and Sanitation Unit (the DWSU) and the Drinking Water and Sanitation Unit Training Center (the DWST) at the DWSU conference room. The main topics of the JCC were the 3<sup>rd</sup> year activities of the Project and the discussion of the Project Design Matrix (the PDM) amendment and human resources development for water supply. As a result of discussion, the meeting members have approved the activities for the human resources development for water supply and the amendments proposed on the PDM. The meeting members have mutual understanding concerning the meeting agendas referred to in the document attached hereto.

Khartoum, 31<sup>st</sup> October, 2013



\_\_\_\_\_  
Mm. Eatidal El Rayah Malik  
Director  
Drinking Water and Sanitation Training  
Centre (DWST)

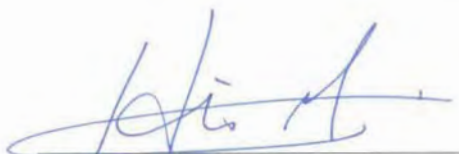


\_\_\_\_\_  
Mr. Mitsuro Uemura  
Team Leader  
JICA Project Team

witnessed by



\_\_\_\_\_  
Mr. Mohamed H. M. Ammar  
Director General  
Drinking Water and Sanitation Unit  
(DWSU)



\_\_\_\_\_  
Mr. Hiroyuki Mori  
Chief Representative  
JICA Sudan Office

Total of 43 JCC members participated in the meeting.

The Expert Team explained the contents of the Project 3<sup>rd</sup> year activities and discussed the future activities for human resources development for water supply with the directors and representatives of the DWSU, DWST, and SWCs respectively. Discussed topics included two (2) new proposed courses i.e. Water Tariff Management and Sanitation Management, a proposal for adopting new water tariff based on actual monthly consumption, and activities based on collaboration with other projects and organizations.

As result of the discussion, the DWSU and the attendees of SWCs expressed general agreement. Major items discussed are described hereafter.

The Minutes of Meeting contains (11) pages including the cover sheet and the annex.

Annex:

1. Program of the 5<sup>th</sup> Joint Coordination Committee (JCC).
2. Attendance List of the 5<sup>th</sup> JCC Meeting on 31<sup>st</sup> October, 2013.
3. Discussion topics for the JCC.
4. PDM (4) Amendments.
5. Photographs of the 5<sup>th</sup> JCC meeting.
6. PDM(4)

The meeting was started by Mr. Abdelmajid of the DWST who welcomed all the audience of the 5<sup>th</sup> JCC members attending. After some verses from the Holly Quran, the participants introduced themselves.

### **1. Greetings by JCC Members**

The self-introduction session was followed by greetings presented by:

1-1. Mm. Eatidal Elrayah Malik                      Director of DWST

After welcoming all the attendees, Mm. Eatidal emphasized on the importance of having a serious discussion concerning the establishment of the monitoring unit at the DWSU. Mm. Eatidal also confirmed the importance of holding on-the-job training for SWCs staff especially on operating and maintaining the recently provided equipment. She confirmed that this approach was found to be the most efficient in improving electromechanical field especially and other fields in general at the SWCs.

Mm. Eatidal mentioned that the feedbacks and suggestions from the SWCs are very valuable for the DWSU/T. She emphasized on the importance of utilizing trained staff of SWCs as TOTs to act as lecturers and trainers at the local training centres of SWCs currently under establishment. Mm. Eatidal also requested all the Directors of the SWCs to prepare the training budget and plan for their respective states.

Mm. Eatidal mentioned that up to the moment, over 1,000 trainees have received various training at the DWST. She mentioned that the feedback on to what extent this conducted training has contributed to the improvement of the trained staff is needed the most.

Mm. Eatidal also mentioned that the DWST has been recognized by UN agencies and International Organizations as a national central training body for water sector. She mentioned that the DWST has held series of meetings with different UN agencies and International NGOs which resulted in training courses being implemented in association with the UNOPS.

At the end of her speech, Mm. Eatidal confirmed on the important role of SWCs' DGs in improving their organizations and developing their organizational systems especially those related to Information Technology. Mm. Eatidal appropriated the audience attention to the fact that the forthcoming fourth year of the Project shall be manly for following up; therefore, issues need to be addressed and resolved within the current third year of the Project.

1-2. Mr. Fumio Imai                                      Senior Representative of JICA Sudan Office

On his turn, Mr. Imai expressed his pleasure to be among the participants of the 5<sup>th</sup> JCC meeting. He mentioned that JICA Sudan Office has been consistently reported by good news among which he is particularly delighted to listen to three (3) of them; the establishment of each SWC training centre as almost each state has established its own, the confirmation on construction of DWST training centre building in kilo ten, and the continuously annually increasing budget of the DWST.

Mr. Imai mentioned that the training implemented in Morocco is a good opportunity for Sudanese trainees to see a good model as he believes that Morocco is a suitable destination for training as it is within reachable distance from Sudan as well as being realizable.

Mr. Imai confirmed on that training implemented in Morocco is not a one-way channel to Sudan only. He also believes that Moroccan engineers and experts would be interested in Sudan as it is dynamic country with high potential field.

Mr. Imai mentioned that the efforts appropriated by the persons in charge in securing budget of the DWST are appreciated considering the critical condition of governmental revenues. Mr. Imai mentioned that despite this increase in budget, water tariff collection systems need to be improved.

At the end of his speech, Mr. Imai emphasized on the importance of raising the awareness with water saving considering the high consumption of potable water in Sudan.

1-3. Mr. Hiroyuki Orikasa Deputy Chief of Mission of Embassy of Japan

After greeting the audience, Mr. Orikasa mentioned that the JCC is the platform to enhance the cooperation among the JCC members in water sector. He also mentioned that the implemented projects by the Embassy of Japan cover various fields that are not only limited to water sector. Mr. Orikasa mentioned that the financial assistance policy of the government of Japan remained unchanged after the independence of South Sudan unlike many other donors who shifted the major portion of their donations and support to the new state. Mr. Orikasa mentioned that Japan is at the same distance towards Sudan before the referendum of the south and its approach is quantity wise and quality wise. Despite being different than capitalist countries like the United States and China, Mr. Orikasa mentioned that the approach of Japan is more practical and realistic.

Mr. Orikasa also mentioned that Japan, unlike many other countries, has no access difficulties to different target area in Sudan. He mentioned that Humanitarian Aid Commission (HAC) and the Sudanese media have been cooperative.

Mr. Orikasa addressed the audience of SWCs attendees saying that they are the main actors and the role of JICA is to provide guidance and equipment. He also mentioned that it is their role to integrate the people of Sudan. He also mentioned that despite the budget limitations due to Japan still being in the recovery phase after the disaster, the government of Japan is still supporting the water sector in Sudan.

Mr. Orikasa mentioned that he appreciates that the access rate to safe water has been altered to 100% in the national laws and regulations. He also mentioned that the activities of the Project need more publicity to share the work being achieved with the people of the Sudan.

Mr. Orikasa mentioned that the JCC is unique in comparison to other meetings held by International Organizations. He mentioned that the latter are normally facilitated by the International Organizations concerned and the role of the governmental agencies is limited to state the needs of the specific sector. He mentioned that in the JCC, on the other hand, the governmental agencies and International Organizations are all discussing together.

At the end of his speech, Mr. Orkasa encouraged the audience to communicate with the Embassy of Japan as their enquiries and suggestions are welcomed at all the times. Mr. Orikasa encouraged the SWCs to share concerns and problems related to different implemented projects by International Organizations with the Embassy as many of these organizations are funded by the Japanese Government.

## **2. Explanation of Work Plan**

Mr. Uemura, the Team Leader of the Project, explained the content of the 3<sup>rd</sup> year's activity in the Project's Second Phase. The main items in the explanation are general information of water sector in Sudan, achieved activity in the 1<sup>st</sup> and 2<sup>nd</sup> years' activities and the proposed activity plan for the 3<sup>rd</sup> year.

## **3. Amendment of Project Design Matrix (PDM)**

Mr. Onodera, the Project Organizational Management Expert, presented the proposed amendments by the Expert Team on the Project PDM. Mr. Onodera explained the purpose of amendment as he emphasized on the importance of having a consensus among the JCC members on the PDM (4). After discussing the proposed amendments, the JCC members agreed and approved all of the proposed amendments.

## **4. Discussion of the human resources development for water supply**

Mr. Uemura proposed the work plan for the "human resources development for water supply" to the directors and representatives of the DWSU and the SWCs respectively. The proposed plan was discussed among the participants. After the discussion, finally, the participants agreed on the contents of the following discussion topics.

### (1) DWST New Training Centre

The Director of DWST mentioned that the construction works of the New Training Centre in Khartoum will start by early November, 2013 and is expected to be completed by May, 2014. The participants agreed to put May, 2014 as a deadline for the opening of the New Training Centre.

### (2) Announcement of New Training System

Mr. Uemura announced that upon the completion of the New Training Centre, a new training system shall be established to match the new facilities capacity. Mr. Uemura mentioned that the new training approach includes implementing several training courses simultaneously rather than the currently implemented approach of implementing only one (1) course a time due to the limited facilities.

### (3) Introduction of two (2) New Training Courses

Mr. Uemura proposed two (2) new training course which are Water Tariff Management supported by Mr. Onodera and Sanitation Management supported by Ms. Aya Kadokami, the newly dispatch Sanitation Management Expert. The participants agreed on including both of the training courses in the training program.

### (4) The 4<sup>th</sup> Joint Seminar in White Nile State and the First Award of Excellence

Mr. Uemura proposed holding the 4<sup>th</sup> Joint Seminar in White Nile State on November 17<sup>th</sup>, 2013. The invitations were addressed to the Directors of each SWC training centre to attend. Mr. Uemura invited the Directors to observe the training centre established in White Nile State as a successful model. Mr. Uemura also proposed the newly established "Award of Excellence" which shall be awarded to the States' training centers based on outstanding performance, quality



assurance, and general merit. Mr. Uemura mentioned that the first award shall be awarded in the forthcoming Joint Seminar.

- (5) Confirmation of the Current Situation of states' training centers establishment, preparation of training plans, and allocation of training budget.

Mm. Eatidal and Mr. Uemura confirmed with the participants the situation of each state concerning the establishment of their respective states' training centers. Mm. Eatidal and Mr. Uemura confirmed that except for South Kordofan, Central Darfur, and the newly founded West Kordofan states, the majority of states have at least appropriated a building to be utilized as a training centre some of which; however, were reported as "need to be rehabilitated".

- (6) Proposal of Improving Water Tariff System

Mr. Uemura and Mm. Eatidal proposed to the audience taking initiative towards replacing the currently implemented water tariff system which is based on installed pipe size, with another system based on actual consumption measured using flow meters. The attendees were encouraged to think of ideas by which the proposal could be taken to consideration at all states. The participants expressed positive opinions as well as difficulties related to the public understanding of water as a free commodity. After discussion, the participants agreed to consider several approaches to improve the currently applied water tariff system in cooperation with the DWSU/T, and the Project.

- (7) Study Tour in Morocco and Invitation of Moroccan Experts

Mr. Uemura explained about the plan of the forthcoming study tour in Morocco which shall be implemented from April 4<sup>th</sup>, 2014 to April 12<sup>th</sup>, 2014. Eleven members are expected to join the training mission to Morocco from the states of White Nile (1), Sennar (1), Northern (1), Gedarif (1), Red Sea (1), El Gezira (1), and Kassala (2) in addition to one (1) JICA Expert and one (1) Coordinator. Kassala participants shall participate as part of Capacity Development Project for Provision of the Services for Basic Human Needs activities in Kassala.

Furthermore, in the 2<sup>nd</sup> invitation to Moroccan experts, a total of four (4) Moroccan experts shall be invited to visit Sudan from December 13<sup>th</sup>, 2013 to December 21<sup>st</sup>, 2013 and are expected to participate in a study tour on the water supply and training system in Sudan.

- (8) International Desalination Seminar in Red Sea State

Mr. Uemura proposed holding a seminar in Port Sudan on desalination. He explained that in response to the request by Red Sea SWC to JICA concerning the rehabilitation of the desalination plant in Port Sudan city, the project in association with Red Sea SWC and JICA is holding a Seminar on Desalination in Port Sudan on December 25<sup>th</sup>, 2013. Mr. Uemura explained that the seminar shall tackle the design, construction, and management of small to mid-sized desalination plants in Sudan. One (1) Moroccan expert shall be invited to participate as well. Mr. Uemura explained that the invitation of the Moroccan expert was decided because the technology used in desalination plants in Morocco is similar to the one used in Sudan. Mr. Uemura also explained that other reasons such as reasonable construction and maintenance costs are among the reasons why Morocco was selected as a good model.

Mr. Uemura extended the invitation to all directors of SWCs as he mentioned that participants from other governmental agencies and local universities are expected to attend.

**Annex-1 . Program of the 5<sup>th</sup> JCC Meeting**

No	Contents	Time	Name	Organization	Position
1	Reciting of Quran	10:00	Mr.Egbal	DWST	Course Coordinator
2	Introduction of JCC Members	10:05	Mr.Egbal	DWST	Course Coordinator
3	Greetings for JCC	10:10	Mm.Eatidal Elrayah Mal	DWST	Director of the DWST
4	Greetings for JCC	10:20	Mr.Mohamed H Ammar	DWSU	Director General
5	Greetings for JCC	10:25	Mr. Fumio Imai	JICA Sudan Office	Senior Representative
6	Greetings for JCC	10:30	Mr. Hiroyuki Orikasa	Embassy of Japan	Deputy Chief of Mission
7	Explanation of the JICA Project	10:35	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
8	Breakfast	11:00	Mr.Egbal	DWST	Course Coordinator
9	Explanation of the PDM	12:00	Mr. Jun Onodera	JICA Project	JICA Expert
10	Discussion	12:20	Mr. Mitsuro Uemura	JICA Project	Project Team Leader
11	Closing Remarks	13:30	Mm.Eatidal Elrayah Mal	DWST	Director of the DWST

## Annex-2 . Attendance List

No	Name	Organization	Position
1	Mr.Hiroyuki Orikasa	Embassy of Japan	Deputy chief of Mission
2	Mr. Fumio Imai	JICA Sudan Office	Senior Representative
3	Ms.Hisae kato	JICA Sudan Office	Project Formulation
4	Ms.Yumi Saito	JICA	Intern
5	Ms.Kazula	JICA	Intern
6	Mr.Abdelgader Babied	JICA Sudan Office	Program officer
7	Mr.Uemura Mitsuro	JICA Expert	Team Leader
8	Mr.Jun Onedera	JICA Expert	Organizational Management Expert
9	Mr.Tarig Hassan	JICA Project	Coordinator
10	Mr.Salah Ibrahim	UNOPS	Project Consultant
11	Ms.Eatidal Elrayah Malik	DWST	PWCT Director
12	Mr. Mohamed Ahmed Buckab	DWST	Coordinator
13	Mr.Elmontaser Bashary	DWST	Coordinator
14	Mr.Abd Elmajed Ahmed	DWST	Coordinator
15	Ms.Hanan M. Mahmoud	DWST	Secretary
16	Ms.Tawsul M.Ali	DWST	Lab.Assistant
17	Mr.Sharaf Eldin Mahmoud	DWST	Assistant
18	Mr. Mutaz Hassan	DWST	Assistant
19	Mr.Mohamed Yahia	DWST	I.T
20	Mr.Hassan Ali Elhaj Elmahi	Northern SWC	D.G
21	Mr.Gaafar Abdalla	River Nile SWC	D.G.Deputy
22	Mr.Elsadig M. Tahameed	White Nile SWC	D.G.
23	Mr.Sami Omer Al Amin	El Gezira SWC	Planning Dept.
24	Mr.Bedreldin Abdalla	ElGazira SWC	WES P.M
25	Ms.Batoul Saad A. Faggad	El Gezira SWC	Director of Training Center
26	Mr.Alsary Kamaleldin	Sennar SWC	Director of Training Center
27	Mr.Jalal Basheir Doelbit	Sennar SWC	Training Center
28	Mr.Siddig Elkhidir	Gedaref SWC	D.G.
29	Mr.Mutaz Shams Eldin M.	Red Sea SWC	D.G.
30	Mr.Altayeb Ahmed Khalifa	Blue Nile SWC	D.G.
31	Mr.Izzeldin Mohamed	South Kordofan SWC	Representative
32	Mr.Wafi Ahmed Hamdan	North Kordofan SWC	Representative
33	Mr.Ibrahim Shaib Mohamed	West Kordofan SWC	D.G.
34	Mr.Fadual Mahmoud Nasr	South Darfur SWC	D.G.
35	Mr.Eldoma Adam Osman	South Darfur SWC	Engineer
36	Mr.Mahmoud Jama	West Darfur SWC	D.G.
37	Mr.Ibrahim Mustafa	West Darfur SWC	Engineer
38	Mahammed Nur Aldeen	East Darfur SWC	Representative
39	Rashed Aldow Abow	North Darfur SWC	Representative
40	Mr.Mohammed Elagib Ali	Central Darfur SWC	D.G.
41	Mr.Hamad Hussein	Central Darfur SWC	DG. Office
42	Mr.Awadalla Addai Khalifa	El Hawata Project	Representative
43	Mr.Alzaki Eljak Medawi	El Hawata Project	Engineer

**Annex-3 .Discussion Topics for the JCC**

1. Amendment of the Project PDM.
2. Additional training courses.
3. Construction of the new training centre.
4. Improvement of water tariff system.
5. Establishment of states' training centers.

## Annex-4. Project Design Matrix (PDM4) Amendments

## &lt; INPUTS &gt;

## 1. Japanese side

## (1) Experts

- ① Team leader/training course management/water supply plan
- ② Organizational management/Water tariff management
- ③ Water supply facilities management (Water treatment plant/pipeline system)
- ④ Machinery and electric equipment/Equipment management
- ⑤ Well management
- ⑥ Data management/Monitoring
- ⑦ Water quality control and management
- ⑧ Community development
- ⑨ Sanitation management

## (2) Equipment

- ① Necessary equipment for DWST new training courses
- ② Necessary equipment for PSWCs training courses
- ③ Necessary equipment for other SWCs (excluding Darfur 5 States, South Kordofan, West Kordofan, Blue Nile, Kassala and Khartoum States)

## (3) Project activities fee

## (4) Training in Morocco

## (5) Acceptance Trainee from Morocco

## 2. Sudanese side

## (1) Allocation of counterparts and administrative personnel

- 1) Project Director
- 2) Project Manager
- 3) Counterparts

## (2) Allocation of land, buildings and facilities

- 1) Office space for Japanese experts in the building of DWSU
- 2) Office space for JICA experts in the building of pilot SWCs
- 3) Training space in DWST and pilot SWCs
- 4) Other necessary facilities, equipment and materials for the administration of the Project

## (3) Project activities fee

## (4) Construction of kilo ten training center (By the end of May 2014)

## (5) Procurement of office equipment and furniture for the training center

Annex-5. Photographs of the 5<sup>th</sup>JCC meeting

	
Mm. Eatidal Speech	Mr. Imai (JICA Sudan) Speech
	
Mr. Orikasa (Embassy of Japan) Speech	Presentation of the 3 <sup>rd</sup> Year Activity
	
Explanation of the PDM(4) by Mr. Onodera	Participants of the JCC Members

Project Design Matrix (IUM4)  
 Project title: Project for Human Resources Development for Water Supply Phase 2  
 Duration: November, 2011 ~ September, 2015  
 Implementation Agency: DWST  
 Target area: 18 States in Sudan  
 Target groups: DWSU, DWST, SWCs

Date: April 30, 2013

Narrative Summary	Indicators	Means of Verification	Important Assumptions
< Overall Goal > Water supply system is properly managed in Sudan.	SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities.		1. Sudan's policies for human resources development for water supply does not change drastically. 2. Trainings are implemented continuously in SWCs(excluding PSWCs).
< Project Purpose > Human resources in water supply sector are properly trained in Sudan.	1. The number of trainees of training courses in Sudan that are trained is more than 2000 after establishment of New Training Center. 2. Functionality rate of water supply facilities in the PSWCs is higher than 80%.	1. DWST training implementation report 2. PSWC training implementation report 3. PSWC monitoring activities report	1. PSWC's staff who completed training courses do not leave SWC. 2. There are no climate changes or disasters that affect the operations water facilities.
< OUTPUTS > 1. Training courses are implemented by DWST based on its mid-term/long-term human resources development plan. 2. Training course implementation structures in PSWCs are developed by PSWCs in collaboration with DWST. 3. Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&M of water supply system of PSWCs.	1. Mid-term/long-term human resources development plan is completed by March 2013. 2. Percentage of contributions from training coordinators on the planning and implementation of training courses increases by 100% 3. Training courses at DWST are implemented more than 20 times annually. 1. Percentage of contributions from training coordinators on the planning and implementation of training courses is increased by 90% in the PSWCs. (1. Contributions from training coordinators on the planning and implementation of training courses ) 2. Training courses are implemented according to the SWC training implementation plan. 1. Monitoring manual is completed by December 2013 2. Monitoring activities are implemented according to schedule. 3. The number of annually maintained water yards** is increased more than 100.	1. Mid-term/long-term human resources development plan 2. DWST training coordinator questionnaire Japanese expert questionnaire 3. DWST training implementation report 1. PSWC training coordinator questionnaire Japanese expert questionnaire 2. PSWC training implementation report 1. Monitoring manual 2. Monitoring report 3. Monitoring report	1. Necessary budget, personnel, equipments, etc are provided in a timely and appropriately.
4. Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST	1. Human resources development manual is completed by March 2013. 2. Workshops to share and disseminate the outputs of PSWCs are implemented 6 times.	1. Human Resources Development Manual 2. Workshop report	
< ACTIVITIES > 1-1. DWST elaborates draft plan for mid-term/long-term human resource development. 1-2. DWST prioritizes actual needs for the training courses. 1-3. DWST elaborates its training implementation plan based on the draft plan for mid-term/long-term human resource development. 1-4. DWST implements training courses based on the training course implementation plan. 1-5. DWST evaluates the training courses. 1-6. DWST revises training course contents, textbooks and manuals based on the evaluation results of the training courses. 1-7. DWST improves its capacity responding to the expansion of training center. 1-8. DWST finalizes the mid-term/long-term human resources development plan, which is to be authorized by the government of Sudan. 2-1. DWST strengthens its leadership through the support of below activities of SWC 2-2. PSWC establishes training units within the organization. 2-3. PSWC develops the draft SWC activities plan. 2-4. PSWC prioritizes actual needs for the training courses. 2-5. PSWC develops training course implementation plan based on the priority. 2-6. PSWC training unit develops training course curriculum(including OJT in localities)and textbooks. 2-7. PSWC training unit implements training courses. 2-8. PSWC training unit evaluates the training courses. 2-9. PSWC training unit revises training course curriculum and textbooks based on the evaluation results of the training courses. 2-10. PSWC reflect the monitoring result of draft SWC activities plan to training course implementation plan. 3-1. DWSU and PSWC establish monitoring units within the organization. 3-2. DWSU develops the draft version of monitoring manual to be used by pilot SWC. 3-3. PSWC implements baseline survey on the O&M status of current water supply system. 3-4. Pilot SWC regularly monitors the current situation of training implementation, examples identified in the State, and O&M of water-supply system based on the draft of monitoring manual. 3-5. DWSU and DWST analyze and evaluate the monitoring result and give feedbacks such as lessons learned and good practices etc. to SWC monitoring unit. 3-6. DWSU maintains and manages monitoring data at information center. 3-7. DWSU finalizes monitoring manual based on the evaluation of monitoring of training courses and O&M of water supply system. 4-1. DWST develops Human Resources Development Manual to each SWC based on the outputs of 1, 2 and 3. 4-2. Each SWC (excluding PSWC) establishes training unit within the organization. 4-3. DWST implements workshop to share and disseminate the outputs of PSWC activities, and distribute Human Resource Development Manual to each SWC. 4-4. Each SWC (excluding PSWC) develops training course implementation plan.	< INPUTS > 1. Japanese side (1)Experts (2)Team leader/training course management/water supply plan (3)Organizational management/Water tariff management (4)Water supply facilities management (Water treatment plant/pipeline system) (5)Machinery and electric equipment/Equipment management (6)Well management (7)Data management/Monitoring (8)Water quality control and management (9)Community development (10)Sanitation management (2)Equipment (1)Necessary equipment for DWST new training courses (2)Necessary equipment for PSWCs training courses. (3)Necessary equipment for other SWCs (excluding Darfur States, South Kordofan, West Kordofan, Blue Nile, Kassala and Khartoum States) (3)Project activities fee (4)Training in Morocco (5)Acceptance Trainee from Morocco. 2. Sudanese side (1)Allocation of counterparts and administrative personnel 1) Project Director 2) Project Manager 3) Counterparts (2)Allocation of land, buildings and facilities 1) Office space for Japanese experts in the building of DWSU 2) Office space for JICA experts in the building of pilot SWCs 3) Training space in DWST and pilot SWCs 4) Other necessary facilities, equipment and materials for the administration of the Project (3)Project activities fee (4)Construction of kilo ten training center (5)Procurement of office equipment and furniture for the training center	1. Budget of DWSU, DWST, and SWCs does not drastically decrease. 2. Organizational restructuring does not occur for counterparts. 3. The number of trained SWC staff leaving the organization is not significant. 4. Budget, human resources, and necessary equipment for project implementation are properly provided.  < Pre-Condition > 1. The economic situation does not worsen than that of initiation period of project implementation. 2. Political conflicts do not occur. 3. Organization (personnel) and budget at DWSU, DWST and SWC does not change drastically.	
< Remarks > DWSU: Drinking Water and Sanitation Unit, DWST: Drinking Water and Sanitation Training Center, PSWC: Pilot State Water Corporation, SWC: State Water Corporation, O&M: Operation and Maintenance *Monitoring manual includes the guideline of monitoring activities, the mandate of monitoring unit, the monitoring activity schedule and the reporting schedule from SWC and DWSU. This manual is used for the monitoring of SWC training course implementation, good practices and lessons learnt, which are shared with other SWCs, and maintenance of water supply facilities in SWC.	**Water yard is consisting of borehole, elevator tank, generator house and public fountain.		

## The Summarized Discussion Transcript

### 1. Discussion on New Sanitation Management Course

**(Mr. Bukab/DWSU)** For sanitation and community-based activities, we have long cooperation with other organizations. We want the Japanese side to focus on technical work rather than that of management. A new big treatment plant is about to be built besides the ones of Al-manarah and others. We need to concentrate on technical issues.

**(Mr. Uemura/JICA P.)** I respect your opinion, please note that we have selected pilot states which are White Nile and Sennar and we have to assist them. As for desalination, only the State of Red Sea is concerned. We know that community development has been undertaken for long time by UNICEF and WES project but what about results? We need to address this issue.

**(Mrs. Eatidal/DWST)** As the structure of DWST has to be renewed, we need to add work to be current which is under our assigned tasks. The definition of “Sanitation” which is done is not clear yet. We need to focus on water protection and JICA will assist us.

**(Dr. Sami/El Gezira)** I would like to comment on Mr. Bukab’s suggestion of excluding sanitation management and focus on technical issues. What I can understand is that water is one body. Not mentioning technicalities in sanitation management does not mean they do not exist. I am happy to hear that a new expert in sanitation management shall be dispatched.

**(Mr. Gaafar/River Nile)** There are more than (700) small water treatment plants in the rural areas taking raw water from the river. We need JICA to consider water supply based on surface water resources.

**(Dr. Sami/El Gezira)** There is a tendency within the governmental strategy in Sudan to combine water supply sector to the sanitation sector.

**(Mr. Sadig/White Nile)** The activities of sanitation started in the seventieth (70s). Now the major issue is pollution. I think sanitation is very important.

**(Ms. Kato/JICA Sudan)** As Mr. Sadig said, sanitation activities could have been undertaken earlier by JICA but, as I asked Mr. Hisham of WES about training courses in sanitation, he said that within two (2) years or so, only two (2) training course were implemented. JICA is the only organization providing sanitation management training. I think the approach is right. Thank you for your opinion.

**(Mr. Uemura/JICA P.)** Our approach is human resources development and not grant aid. Please do not confuse one for another. Only training equipment relevant to this approach shall be provided. Please understand that.

### 2. Discussion on Water Tariff Management/System

**(Mr. Uemura/JICA P.)** Gedarif state and Hawata project have flow meters-based system. Why can they achieve that and you at the other states and SWCs cannot?

**(Mr. Sadig/White Nile)** The success of Hawata project is because that it is almost private project. The main issue to discuss is how to manage water. I have participated in a water seminar in Sweden in 2000 in



which I have known that countries like South Africa, Latin American and European countries have found that the best practice is municipality. If the water industry was done by the government or by private sector, it is absolutely hopeless. Communities should be leading the water management.

**(Dr. Sami/El Gezira)** I agree with most of what has been said. The success of Hawata project is achieved on a principle that water has an economic value. Community participating in water management is the way to success. We have a lack of awareness. The participation of community in water management is needed no matter how sophisticated the system is. From what I have seen during Mr. Uemura's presentation, the community chiefs in Morocco are communicating efficiently with their people because they have a sense of ownership. I recommend JICA course to focus on this matter.

**(Mr. Badereldeem/El Gezira)** One of the main problems in Sudan is control on water. Therefore, water is lost due to lack of control.

**(Mr. Alsary/Sennar)** In the history of Sudan, water has always been taken for granted. It has always been considered as a free commodity. How to change that way of thinking is also a problem. People, especially in rural areas, strongly believe that the government is responsible for constructing facilities and managing them. Otherwise is unacceptable to them. Hawata has resolved many water sever scarcity issues thus, many relied on the project water resources.

**(Mr. Bukab/DWSU)** If everything is already decided, Mr. Uemura, what are we discussing here? Another point is that DWST is in charge of designing training courses for states. We are always talking about Hawata project. Please set engineering economy training courses and that is all.

**(Mr. Awadalla/Hawata P.)** I believe there are two (2) problems; the first is managerial and the second is about community. About management, as known, the SWC is in charge steering water supply facilities in urban areas while in rural ones, localities are in charge sometimes with communities and others all by themselves. Also, localities are authorized to collect the revenues by law.

**(Mr. Sadig/White Nile)** I think the points which are presented here have all been discussed earlier. Hawata project was designed during the war period between Ethiopia and Eretria. It was designed for the purpose of accommodating the refugees and not for the sake of training. JICA is here for training and human resources development, so what is the criticism for? Each state has the authority to implement its own work.

**(Mm. Eatidal/DWST)** The tariff system needs to be changed to another that is based on flow meters. This is included in the water policy. This project is a chance for us to benefit from the experiences of the JICA Experts. Further opinions and ideas on water tariff systems, how to improve them, and how the project and JICA Expert can support, please send them to the DWST.

**(Mm. Eatidal/DWST)** Now, I would like to confirm the actual situation of training centres establishments in the states.

**(Mr. Hassan/Northern)** The centre is complete. We are currently working on preparing training course.

**(Mm. Eatidal/DWST)** We would like to know about the actual situation of the buildings and the start of implementation of training courses.

**(Mr. Badereldin/El Gezira)** The training centre is complete. We have also prepared the training plan.

**(Mr. Siddig/Gedarif)** The training centre is complete as a building; however, no director for training centre is appointed as of the moment. We are expecting that with the support of the DWST and the project, we will be able to appoint one soon.

**(Mr. Sadig/White Nile)** The training plan is done.

**(Mr. Alsary/Sennar)** The training centre is done, training courses have already started, the budget is secured, and computers have been purchased.

**(Mr. Uemura/JICA Project)** As you said, will you continue as the director of training center or a new director shall be assigned?

**(Mr. Alsary/Sennar)** I shall continue, even after my retirement.

**(Mr. Eltayeb/Blue Nile)** One building has been allocated to be a training centre; however, it needs to be rehabilitated. Furthermore, the project and DWST support is needed for the design of facilities.

**(Mr. Uemura/JICA P.)** For the moment, I suggest that the trainees from Blue Nile to join Sennar SWC training centre as the distance between the two (2) states is close.

**(Mr. Naji/Red Sea)** A building has been allocated but it needs rehabilitation as it is an old one. The prospective centre also needs furniture, equipment, and workshop tools.

**(Mr. Izzeldin/South Kordofan)** There is no centre at the state as of the moment. We used to utilize one (1) of WES project buildings but, that is inapplicable any longer. Most of the equipment provided by JICA was either lost or damaged during the last conflict. The majority of trained TOTs have resigned their posts and some of them have been reassigned to the new state.

**(Mm. Etidal/DWST)** What about Darfur project? Any possibility for support here?

**(Ms. Kato/JICA Sudan)** I hope that the state of South Kordofan can support the new state of West Kordofan to make use of the already provided equipment and their training capacity. I also recommend them to contact the international organizations and NGOs as well.

**(Mr. Abdelgader/JICA Sudan)** We know that equipment was divided into three (3) and distributed for the three (3) localities of Almujlad, Alfula, and Kadugli. As far as we know, the only equipment reportedly stolen was one (1) laptop computer.

**(Mr. Ibrahim/West Kordofan)** We received two (2) sets of generators. We will try to allocate an existing building to be utilized as a training centre.

**(Mr. Jama/West Darfur)** The training centre is ready, furniture and equipment are needed. There is a 90% possibility that the needed furniture could be secured by SWC budget.

**(Mr. Fadul/South Darfur)** The situation is "on-going" and we will confirm the status of the training centre within two (2) weeks.

**(Mr. Uemura/JICA P.)** What about the equipment provided by Darfur Project?

**(Mr. Fadul/South Darfur)** All is managed well.

**(Mr. Mohammed/Central Darfur)** The situation in the state is quite different than in other states. There is no infrastructure and we need support from JICA.

<END>

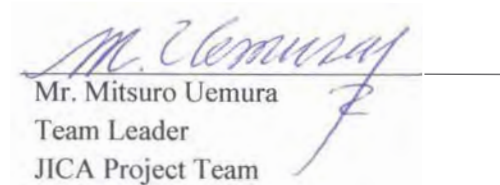
**MINUTES OF THE MEETING  
ON  
THE 6<sup>TH</sup> JOINT COORDINATION COMMITTEE (JCC6)  
FOR  
THE PROJECT FOR HUMAN RESOURCES DEVELOPMENT  
FOR WATER SUPPLY PHASE 2  
IN  
THE REPUBLIC OF THE SUDAN**

The 6<sup>th</sup> Joint Coordinating Committee (the JCC) was held on the 29<sup>th</sup> January, 2014 for the Project for Human Resources Development for Water Supply Phase 2 (the Project) in the Republic of Sudan, the Drinking Water and Sanitation Unit (the DWSU) and the Drinking Water and Sanitation Unit Training Centre (the DWST) at the DWSU conference room. The main topic of the JCC was presenting of the results of the Mid-Term Review of the project. The meeting members have mutual understanding concerning the meeting agendas referred to in the document attached hereto.

Khartoum, 29<sup>th</sup> January, 2014



Mm. Eatidal El Rayah Malik  
Director  
Drinking Water and Sanitation Training  
Centre (DWST)



Mr. Mitsuro Uemura  
Team Leader  
JICA Project Team

witnessed by



Mr. Mohamed H. M. Ammar  
Director General  
Drinking Water and Sanitation Unit  
(DWSU)



Mr. Hiroyuki Mori  
Chief Representative  
JICA Sudan Office

Total of 45 JCC members participated in the meeting (see Annex-2) .

The Joint Mid-Term Review Team presented the results of the project mid-term review to the audience after they were briefed on the project up-to-the-moment achievements by DWST. The Joint Mid-Term Review Team presented lessons learnt as well as recommendations based on their findings.

The audience of the JCC members discussed and commented on the outcomes of the project Mid-Term review and the lessons learnt and recommendations presented. As result of the discussion, the DWSU and the attendees of SWCs acknowledged the presented results and recommendations. Major items discussed are described hereafter.

The Minutes of Meeting contains (33) pages including the cover sheet and the annex.

Annex:

1. Program of the 6<sup>th</sup> Joint Coordination Committee (JCC).
2. Attendance List of the 6<sup>th</sup> JCC Meeting on 29<sup>th</sup> January, 2014.
3. Comments and Remarks by the 6<sup>th</sup> JCC Members.
4. Photographs of the 6<sup>th</sup> JCC meeting.

The meeting was started with reciting from the Holy Quran by Mr. Abdelmajid of the DWST. Mr. Abdelmajid welcomed the 6<sup>th</sup> JCC members attending while paid tributes to the Directors General of SWCs, Mr. Mohammed H. M. Ammar, Director General of DWSU, Mr. Sorimachi and Ms. Nakata of the Embassy of Japan, Mr. Miyazaki of JICA Headquarters, and Mr. Mori and Ms. Kato of JICA Sudan Office. After the opening by Mr. Abdelmajid, the JCC members introduced themselves.

### **1. Opening Remarks by Mr. Ammar of DWSU:**

The 6<sup>th</sup> JCC meeting's opening remarks were delivered by Mr. Mohammed H. M. Ammar the Director General of DWSU in which he first paid tributes to the representatives to the Embassy of Japan in Khartoum, the Mission from JICA Headquarters, JICA Sudan Office, the Director Generals of the SWCs, directors of states training centres, and the audience of JCC members.

Mr. Ammar welcomed the JCC members and thanked them for their attendance. Mr. Ammar expressed appreciations to the Government of Japan for consistently supporting the water sector in Sudan as well as for its efforts appropriated for supporting human resources development. Mr. Ammar complimented the projects implemented by the Government of Japan for human resources development and rural water supply and namely mentioned the projects in Kassala and Kosti which shall start in this year. Mr. Ammar expressed his hopes to see physical progress on constructing desalination plant in PortSudan, Red Sea State.

Mr. Ammar complimented the efforts appropriated for training provision at federal level as he mentioned that over 1,200 engineers have successfully received training. He also complimented the newly included training courses from which he mentioned Monitoring and Evaluation, Sanitation Management, and Water Tariff Management as examples.

Mr. Ammar mentioned that the DWSU, supported by JICA, is following up with establishing training centres at all the states of Sudan. He mentioned that training centres have been successfully established in the States of White Nile, Sennar, El Gezira, and River Nile. He reported to the audience that training centres are planned to be established in the states of North Kordofan, and Northern. He also mentioned that the DWSU shall work with the SWCs in other states to establish their training centres.

Mr. Ammar urged the SWCs to make full use of the trained TOTs when they return to their states and to induce the knowledge and skills transference with their co-workers. Mr. Ammar also urged the SWCs to utilise trained TOTs aiming at preserving the equipment in each SWC's possession by applying proper management on it.

Mr. Ammar reported to the audience on the progress attained on the construction of the new training centre in Kilo Ten. Mr. Ammar mentioned that the construction is expected to start in the next month. Mr. Ammar mentioned that for the success of the new to-be-constructed training centre, the support from the states is needed.

### **2. Presentation on Project Progress by Mr. Egbal of DWST:**

Following the opening remarks by Mr. Ammar, Mr. Egbal Bakhiet, the Chief Course Coordinator of DWST delivered a presentation to the audience on the project progress achieved. The presentation contents included introduction to the project structure and main approach as well as explanation on the project's activities as well as the progress achieved up to the moment.

### **3. Presentation of the Project Mid-Term Evaluation Results:**

The Joint Mid-Term Review team presented the results of the project mid-term evaluation. The presentation on the evaluation results was delivered by Ms. Mio Takagi, the Consultant to JICA and the member of the Joint Mid-Term Review Team. The presentation delivered also included explanation on the evaluation methodology and categories followed as well as justifications to the final evaluation results decided.

Following the presentation of the mid-term evaluation results, the Joint Mid-Term Review Team presented the lessons learnt from project implementation as well as recommendations for the remaining period of the project.

### **4. Signing of the Minutes of Discussion:**

Following the presentation of the mid-term evaluation, the Minutes of Discussion was signed by the Government of Sudan represented by Mr. Mohammed H. M. Ammar, the Director General of DWSU, and JICA represented by Mr. Akihiro Miyazaki.

### **5. Closing Remarks:**

Following the signing of the Minutes of Discussion, the members of the 6<sup>th</sup> JCC meeting commented in part on the results of the mid-term evaluation results presented.

Mrs. Eatidal El Rayah Malik, the General Director of DWST delivered the 6<sup>th</sup> JCC meeting closing remarks to the audience in which she thanked the Government of Japan, the Joint Mid-Term Review Team, the JICA, and the audience for their attendance and participation. Mrs. Eatidal mentioned that this JCC meeting has been appropriated for the mid-term review of the project.

Mrs. Eatidal mentioned that the criteria evaluated in the project mid-term review have been based on the real situation. She also mentioned that it is quite important to clarify the standing point on the project progress as well as to follow the recommendations by the Joint Mid-Term Review Team on amending certain indicators in the PDM to appropriately measuring the progress.

Mrs. Eatidal emphasised on the importance of the mid-term evaluation to achieving the project final goal. She also mentioned that the project has contributed to applying further proper management on the water sector as well as to the development of the human resources working within the water sector in Sudan.

Mrs. Eatidal mentioned that the remaining period of the project, despite being short, shall be crucial for which the mid-term evaluation findings, raised issues, and recommendations should be addressed at high importance. She mentioned that projects implemented on human resources development are quite challenging and therefore, consistent work on covering gaps, resolving issues, and applying improvements, is always required.

Mrs. Eatidal mentioned that she has explained to the Joint Mid-Term Review Team about the significant difference which the project implementation has created. She mentioned that one (1) of the most recognisable impacts of the project is raising the awareness of the SWCs managements with the importance of training and human resources development. She also indicated to the fact that training centres did not exist at states level prior to the project implementation.

Mrs. Eatidal expressed her delights to seeing all of the Director Generals full understanding and cooperation and partnership in implementing the project activities. She mentioned that the

construction of the new training centre is of high importance to capacity building as she reported to the audience that Mr. Jamal Al amin of the DWSU shall be in charge of following up and supervision on the construction progress.

Mrs. Eatidal mentioned that the construction of the new training centre and the establishment of the new training system of the DWST will provide a significant reinforcement to the capacity development efforts considering the new training facilities which shall be available at the DWST's disposal following the construction completion.

Mrs. Eatidal thanked JICA for dispatching a sanitation management expert as she emphasised on the importance of sanitation to water supply. She reported to the audience that the assignment of sanitation management expert dispatched by JICA, have been completed and the first training course in sanitation management has been conducted successfully. She also mentioned that the participants of the sanitation management first training course now possess better knowledge and skills on protecting the environment and water resources against pollution.

Mrs. Eatidal mentioned that the main current issue is establishing efficient links and communication channels between the DWST and the SWCs. She mentioned that establishing regulation and framework to define such links and channels is very important. She mentioned that discussion is needed on establishing a monitoring unit at the DWSU as well as at each of the SWCs which will improve the process of training conduction and make data and information available at anytime. She mentioned that each state should be aware about the situation of all other states. She mentioned that JICA Experts have prepared monitoring formats, and called for the active participation and discussion by the JCC members on the formats proposed.

Mrs. Eatidal mentioned that the indicators of the PDM are quite clear now as she called for amending the PDM. She also called for further improvements to be applied aiming at strengthening the DWST role at states level. She mentioned that the limited administrative capacity of the DWST in the meantime may have caused some issues and she confirmed that efforts are being appropriated to resolving such issues and conduct in more efficient management.

At the end of her speech, Mrs. Eatidal hoped for better communication system between DWST and the SWCs. She mentioned that activities implementation difficulties resulting from budgetary issues could be tackled by enforcing better management on available resources to achieve objectives in the best and most efficient way. She emphasised on the importance of capacity building to achieving development.

<END>



**Annex-1 . Program of the 6<sup>th</sup> JCC Meeting**

No	Contents	Time	Presenter	Organization	Position
1	Reciting of Quran	09:30	Mr. Abdelmajed	DWST	Course Coordinator
2	Introduction of JCC Members	09:35	Mr. Abdelmajed	DWST	Course Coordinator
3	Greetings for JCC Meeting	09:40	Mr. Mohamed H. M. Ammar	DWSU	Director General
4	Explanation of the Project Second Phase Progress	09:45	Mr. Egbal B. Alamir	DWST	Chief Course Coordinator
5	Presentation of Mid-Term Evaluation Results	10:00	Joint Mid-Term Review Team		
6	Signing of Minutes of Discussion	10:30	Mr. Ammar and Mr. Miyazaki		
7	Closing Remarks	10:35	Mrs. Eatidal Elrayah Malik	DWST	General Director
8	Breakfast	10:40	Mr. Egbal B. Alamir	DWST	Chief Course Coordinator

## Annex-2 . Attendance List

No.	Name	Organization	Position
1	Ms. Midori Nakate	Embassy of Japan	Second Secretary
2	Mr. Masayuki Sorimachi	Embassy of Japan	Political & Economic Officer
3	Mr. Hatem Abbas	Embassy of Japan	Economic /Eco Cooperation Assistant
4	Mr.Hiroyuki Mori	JICA Sudan Office	Chief Representative
5	Ms.Hisae kato	JICA Sudan Office	Project Formulation Adisor
6	Mr.Akihiro Miyazaki	JICA H.Q	Adviser Global Eng.Dept.
7	Ms.Mio Takagi	JICA H.Q	Consultant
8	Mr.Hiroyuki Sokamoto	JICA K-TOP	JICA Expert
9	Mr.Uemura Mitsuro	JICA Expert	Team Leader
10	Mr.Abdelgader Babied	JICA Sudan Office	Program officer
11	Mr.Tarig H. Bukhary	JICA Project	Project Coordinator
12	Mr.Mohamed Hassan Ammar	DWSU	Director General
13	Ms.Eatidal Elrayah Malik	DWST	General Director
14	Mr.Egbal Bakheit	DWST	Chief Course Coordinator
15	Mr.Abd Elmajed Ahmed	DWST	Course Coordinator
16	Mr.Omer Elsunni	DWST	Course Coordinator
17	Mr.Elmontaser Bashary	DWST	Course Coordinator
18	Ms.Hanan M. Mahmoud	DWST	Secretary
19	Mr.Sharaf Eldin Mahmoud	DWST	Assistant Course Coordinator
20	Mr.Mohamed Yahia	DWST	I.T. Support
21	Mr.Muataz Hassan	DWST	Assistant Surveyor
22	Ms.Safya Ali Babiker	DWST	Laboratory Assistant
23	Ms.Tawasel Mohamed Ali	DWST	Assistant Surveyor
24	Ms.Saria Jamal	DWST	Assistant Course Coordinator
25	Mr.Gamal Al Amin	DWSU	Construction Director
26	Mr.Abdalla M.Mahmoud	Northern SWC	Director of Training Center
27	Mr.Elsadig M.Tahameed	White Nile SWC	Director General
28	Mr.Ahmed Eltyeb Suliman	White Nile SWC	Director of Training Center
29	Mr.Almadani Alkhidir	Sennar SWC	Director General
30	Mr.Hashim Abdelatif	Kassala SWC	Director General
31	Mr.Anis Ismael	JICA -K-TOP	Project Assistant
32	Mr.Altayeb Ahmed Khalifa	Blue Nile SWC	Director General
33	Mr.Mahgoub Elhalawee	Khartoum SWC	Deputy Director General
34	Mr.Malik Omer	Khartoum SWC	Director of planning & Projects
35	Mr.Abasher Elfaki Eltyeb	Khartoum SWC	Project Management Officer
36	Mr.Abdel Bagi Nor Eldaim	El Gezira SWC	Director General
37	Ms.Batoul Saad Abdalla	El Gezira SWC	Director of Training Center
38	Mr.Sami Omer Al Amin	El Gezira SWC	Planning Department Officer
39	Mr.Mahmoud Ahmed	El Gezira SWC	Projects Director
40	Mr.Ehab Abd Alaal	El Gezira SWC	Training Centre Staff
41	Adris Dabaka	South Darfur SWC	Director General
42	Mr.Hassan Adam Mahmoud	East Darfur SWC	Director General
43	Mr.Mohammed Elagib Ali	Central Darfur SWC	Director General
44	Mr.Mustafa Idress Mohamed	North Darfur SWC	Rural Water Administrative Manager
45	Mr.Mohamed Abdel Gadir	El Hawata W.C	Director General

### Annex-3. Comments and Remarks by the 6<sup>th</sup> JCC Members

**(Mr. Miyazaki / JICA)** Let me make a rap up for this presentation. As Ms. Takagi has explained, this project is going on the right track with the great effort by the Sudanese Side and the Japanese Side. However, there are some obstacles and difficulties to reaching the goal. For example, one of the problems is the indicators used. As Ms. Takagi explained, some of the indicators are not appropriate to be used to evaluate the project purpose or the outcome of some activities. That's why we have discussed changing some of the indicators to evaluate the project purpose. First point is the new training centre planned for construction at Kilo Ten. The construction completion was planned to be done by the end of 2011 but, it still ongoing. We strongly recommend constructing the new training centre as it is believed to be a great contribution to maximising the outcome of the project as well as to providing more opportunities to the SWCs to participate in training courses. The third point is the sanitation expert. Sanitation issue is very important for water supply. We have already dispatched one Japanese Expert to the DWST; however, no sanitation unit exists at the DWST. Furthermore, the communication to link with other organisations is missing. That's why establishing sanitation unit and communication with other organisations should be more advanced. The forth point is the monitoring unit. May be this afternoon, JICA Experts and the Director Generals of SWCs will discuss some monitoring issues; however, the monitoring unit remains missing at the DWST. The outcome (3) focuses on the monitoring issue. That's why we would like to strongly ask establishing a monitoring unit as soon as possible. The last point is the capacity building for SWCs on business and project management skills. As you know, SWCs as independent organisations need business mind or some administration/management skills which are very important for sustainability. Thus, we would like asking adding some training courses on such skills in the near future. Finally, I would like to say that we really appreciate seeing the project nicely done with the efforts by the Sudanese and the Japanese sides. As I said, this project is going on the right track; however, there are still some obstacles, which overcoming them could lead to reaching the final goal. Thank you very much.

**(Mr. Hassan Adam / East Darfur SWC)** At first, we thank the Japanese Government for the provision of this generous training which has created a generation that can be relied on in the future. However, none of the achievements addressed here apply to East Darfur State. It is acknowledged that SWC staff have been trained but, we lack the equipment and instruments to implement the training at the state. We have been promised that the second phase of the project shall be appropriated for East Darfur State. Unfortunately, we have not received any sort of equipment. The remaining period of the project is about one and half years i.e. until July, 2015. I believe that our state should be supported to reach the level of the other states. In twelve (12) states, training centres have been established and training courses implementation has been started. I believe that East and Central Darfur States, as newly formed states, have received nothing. The training provided was sufficient in period and number of staff trained. We have several buildings that could be renovated to be training centre; however, our concern is the equipment needed to operate this training centre. We have requested many equipment that included crane trucks but, our requests have not been responded to. We really do thank the Government of Japan for this support as we also thank the DWSU for inviting us to relevant events and following up with us on major as well as minor issues. Thank you.

**(Mr. Mohamed Abdelbari / Hawatta)** We thank the Joint Mid-Term Review Team for this explanation as well as for the presented results of the project evaluation and recommendations. I think including activities in the PDM on conducting study tours for Director Generals in Japan, Morocco, Egypt, or any other country that is expertly advanced in water supply is necessary. If such skills and knowledge was obtained by Director Generals, they can conduct better leadership to training centres in SWCs. I would like to ask about the new training centre to be constructed in Kilo Ten. As we have

known, both the plan and schedule are finalised but, we do not know about the construction process. This centre is very important to Sudan and for the neighbouring countries in Africa and the Arab League as well. The newly introduced training course on sanitation management is very important to water supply. We appreciate adding this course which comes at a suitable time. Concerning monitoring and data collection, I believe that if we all collaborated together; the DWSU, DWST, and SWCs, it will be easy to conduct monitoring on water supply facilities. Monitoring units should be established at DWST and SWCs too whereas the SWCs' units could feed information to DWST's monitoring unit leading up to establishing central information database that would contribute to good planning of projects in whole Sudan. Thank you.

**(Mr. Al Sadig Tahamid / White Nile SWC)** I would like to thank first the Government of Japan and the Japanese Embassy, JICA, and JICA Experts. The devotion which we have seen from the Japanese Experts is really different than other experts from UNICEF and other organisations. As I speak now, Mr. Oshika, the JICA Expert, is working with our trainees in the rural areas of White Nile State as if he were one of the villagers. We are really indebted to this kind of experts. The second point is, we have the WES project which has been dealing with such issues since 1975; however, its output is very limited. I believe if we continued the way JICA Expert for sanitation management has started, I believe the results will be fruitful.

**(Mr. Altayeb Ahmed / Blue Nile SWC)** At first, I would like to thank the Japanese Government for their support to all fields and especially in training field. We at Blue Nile State have received support from the project; however, as you know in Blue Nile State, twenty (20) new cities were constricted to accommodate the displaced citizens because of the heightening of Al Rouseries dam. In all these cities, water supply networks have been constructed. We have allocated one (1) building to be used as a training centre and we are about to renovate it. The numbers of engineers trained at DWST is not enough. We need to provide training to labour class workers. We are hereby inviting you to visit the state to witness the allocated building as well as to confirm the need for training centre there. We request supporting the new training centre with necessary equipment as much as applicable so as we could reach the level of other states such as Sennar and White Nile States which are our neighbours and we thank them for their cooperation with our state. We hope that we will get the support to establish our training centre and start conducting training locally at the state.

**(Mr. Mohamed Al Agib / Central Darfur SWC)** I would like to thank the Government of Japan for its generous support. The newly formed states of Central and East Darfur are lacking the infrastructure. We hope that the Japanese Government would support us to reach the level of other states. Thank you.

**(Mr. Idriss Dabaka / South Darfur SWC)** There are some obstructions that delayed the establishment of the training centre in South Darfur State; however, we would like to confirm that the training centre is currently at an establishment phase at which necessary equipment could be installed to it. Sending trainees to DWST in Khartoum has become quite difficult considering the long distance as well as the security issues. We believe establishing a training centre as in the two (2) pilot states is quite necessary for the training provision and to rule out the difficulties previously mentioned. We are grateful to the DWST for following up with the SWC trainees. Many of the staff have received training at the DWST and this has been seen in their performance which have been improved. We hope to get support to establish the training centre. Thank you.

**(Mr. Hashim Abdelatif / Kassala SWC)** Kassala is one of the states which benefited the most from this programme. Throughout implementing the activities of JICA Project in the State, we have established very good and strong relation with the Government of the State that contributed to the

efficient implementation of activities. The State Government has issued a decision by which the local component needed for water projects in the state is given the second highest priority immediately after workers wages. Meantime, the local component for all of the water projects in the state has been disbursed in full. The training at the SWC has become a compulsory component of its operation and the participants of local and overseas training courses held seminars and workshops in which they transferred their gained knowledge and skills to their co-workers. We have established a training unit that is formed from the SWC staff. This unit is in charge of managing the training at the state including specifying training needs and nomination of staff to training courses. The project by JICA has established water supply models in rural areas and we hereby welcome all cooperation with other SWCs. JICA project has supported establishing an efficient water tariff based on both cubic metre and flat rate by which we were able to propose a new tariff to the State Government aiming at the sustainability of services provided to consumers. The cooperation with JICA project has also supported the combined collection of water tariff in the electricity bill in association with the Sudanese Electricity Distribution Company. Before this collection method; the SWC monthly collection efficiency was 34% ~ 36%; however, after adopting the new approach, the collection efficiency reached 89%.

**(Mr. Almadani Alkhidir / Sennar SWC)** I would like to address two (2) points. Firstly, we would like to present our sincere appreciations to the Government of Japan and JICA Experts for their generous support to Sennar State and selecting it as a pilot state. Secondly, I believe that in the second half of the project the focus should be on the newly introduced topics i.e. sanitation management and monitoring. I believe it is quite important to work towards establishing monitoring units at the states. Another important issue is establishing information databases for the monitoring process. I believe these three issues are required to be the focus hub in the remaining period of the project. Thank you.

<END>

**Annex-6. Photographs of the 6<sup>th</sup> JCC meeting**

		
<p><b>Explanation of Results</b></p>	<p><b>Participants of JCC</b></p>	<p><b>Discussion</b></p>

Narrative Summary	Indicators	Means of Verification	Important Assumptions
< Overall Goal > Water supply system is properly managed in Sudan.	SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities.		1. Sudan's policies for human resources development for water supply does not change drastically. 2. Trainings are implemented continuously in SWCs.
< Project Purpose > Human resources in water supply sector are properly trained in Sudan.	1. The number of trainees that are trained in Sudan exceeds 2000 2. The number of annually maintained water yards*** is increased 10 more than 20 in each PSWC.	1. DWST, PSWC, SWCs training implementation report 2. PSWC training implementation report	1. PSWC's staff who completed training courses do not leave SWC. 2. There are no climate changes or disasters that affect the operations water facilities. 3. Necessary budget, personnel, equipment, etc are provided in SWC at the appropriate timing.
< OUTPUTS > 1. Training courses are implemented by DWST based on its mid-term/long-term human resources development plan.	1. Mid-term/long-term human resources development plan is completed by March 2013. 2. Percentage of contributions from training coordinator on the planning and implementation of training courses increases by 100%. 3. Training courses at DWST are implemented more than 20 times annually.	1. Mid-term/long-term human resources development plan 2. DWST training coordinator questionnaire Japanese expert questionnaire 3. DWST training implementation report	1. Necessary budget, personnel, equipment, etc are provided in a timely and appropriately.
2. Training course implementation structures in PSWCs are developed by PSWCs in collaboration with DWST.	1. Percentage of contributions from training coordinators on the planning and implementation of training courses is increased by 80% in the PSWCs. 2. Training courses are implemented according to the SWC training implementation plan.	1. PSWC training coordinator questionnaire Japanese expert questionnaire 2. PSWC training implementation report	
3. Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&M of water supply system of PSWCs.	1. Monitoring manual is completed by March 2013. 2. Monitoring activities are implemented according to schedule.	1. Monitoring manual**** 2. Monitoring report	
4. Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST.	1. Human resources development manual is completed by March 2013. 2. Joint Seminar to share and disseminate the outputs of PSWCs are implemented 6 times.	1. Human Resources Development Manual 2. Joint Seminar report	
< ACTIVITIES > 1-1. DWST elaborates draft plan for mid-term/long-term human resource development. 1-2. DWST prioritizes actual needs for the training courses. 1-3. DWST elaborates its training implementation plan based on the draft plan for mid-term/long-term human resource development. 1-4. DWST implements training courses based on the training course implementation plan. 1-5. DWST evaluates the training courses. 1-6. DWST revises training course contents, textbooks and manuals based on the evaluation results of the training courses. 1-7. DWST improves its capacity responding to the expansion of training center. 1-8. DWST finalizes the mid-term/long-term human resources development plan, which is to be authorized by the government of Sudan.  2-1. DWST strengthens its leadership through the support of below activities of SWC. 2-2. PSWCs establish training units within the organization. 2-3. PSWCs develop the draft SWC activities plan. 2-4. PSWCs prioritize actual needs for the training courses. 2-5. PSWCs develop training course implementation plan based on the priority. 2-6. PSWCs' training units develop training course curriculum (including OJT in Localities) and textbooks. 2-7. PSWCs' training units implement training courses. 2-8. PSWCs' training unit evaluate the training courses. 2-9. PSWCs' training units revise training course curriculum and textbooks based on the evaluation results of the training courses. 2-10. PSWCs reflect the monitoring result of draft SWC activities plan to training course implementation plan.  3-1. DWSU and PSWCs establish monitoring units within the organization. 3-2. DWSU develops the draft version of monitoring manual to be used by PSWCs. 3-3. PSWCs implement baseline survey on the O&M status of current water supply system. 3-4. PSWCs regularly monitor the current situation of training implementation, examples identified in the State, and O&M of water supply system based on the draft of monitoring manual. 3-5. DWSU and DWST analyze and evaluate the monitoring result and give feedbacks such as lessons learned and good practices etc. to SWC monitoring unit. 3-6. DWSU maintains and manages monitoring data at information center. 3-7. DWSU finalizes monitoring manual based on the evaluation of monitoring of training courses and O&M of water supply system.  4-1. Each SWC (excluding PSWCs) establishes training unit within the organization. 4-2. DWST develops Human Resources Development Manual to each SWC based on the outputs of 1, 2 and 3. 4-3. DWST implements Joint Seminar(s) to share and disseminate the outputs of PSWCs' activities, and distribute Human Resource Development Manual to each SWC. 4-4. Each SWC (excluding PSWCs) develops training course implementation plan.	< INPUTS > 1. Japanese side (1) Experts ① Team leader/training course management/water supply plan ② Organizational management/Water tariff management ③ Water supply facilities management (Water treatment plant/Pipe network management) ④ Machinery and electric equipment/Equipment management ⑤ Well management ⑥ Data management/Monitoring ⑦ Water quality control and management ⑧ Community development ⑨ Sanitation management (2) Equipment ① Necessary equipment for DWST new training courses ② Necessary equipment for PSWCs training courses ③ Necessary equipment for other SWCs (excluding Darfur 5 States, South Kordofan, West Kordofan, Blue Nile, Kassala and Khartoum States) (3) Project activities fee (4) Training in Morocco (5) Acceptance Trainee from Morocco  2. Sudanese side (1) Allocation of counterparts and administrative personnel 1) Project Director 2) Project Manager 3) Counterparts (2) Allocation of land, buildings and facilities 1) Office space for Japanese experts in the building of DWSU 2) Office space for JICA experts in the building of PSWCs 3) Training space in DWST and PSWCs 4) Other necessary facilities, equipment and materials for the administration of the Project (3) Project activities fee (4) Construction of Kilo ten training center (5) Procurement of office equipment and furniture for the training	1. Budget of DWSU, DWST, and SWCs does not drastically decrease. 2. Organizational restructuring does not occur for counterparts. 3. The number of trained SWC staff leaving the organization is not significant. 4. Budget, human resources, and necessary equipment for project implementation are properly provided.  < Pre-Condition > 1. The economic situation does not worsen than that of initiation period of project implementation. 2. Political conflicts do not occur 3. Organization (personnel) and budget at DWSU, DWST and SWC does not change drastically.	

< Remarks >  
 DWSU: Drinking Water and Sanitation Unit, DWST: Drinking Water and Sanitation Training Center, PSWC: Public State Water Corporation,  
 SWC: State Water Corporation, O&M: Operation and Maintenance  
 \* Project activities are conducted indirectly in areas that are inaccessible for Japanese side.  
 \*\* Water yard is consisting of borehole, elevator tank, generator house and public fountain.

\*\*\*\*Monitoring manual includes the guideline of monitoring activities, the mandate of monitoring unit, the monitoring activity schedule and the reporting schedule from SWC and DWSU  
 † This manual is used for the monitoring of SWC training course implementation, good practices and lessons learnt which are shared with other SWCs, and maintenance of water supply facilities in SWC.





**MINUTES OF THE MEETING**  
**ON**  
**THE 7<sup>TH</sup> JOINT COORDINATION COMMITTEE (JCC7)**  
**FOR**  
**THE PROJECT FOR HUMAN RESOURCES DEVELOPMENT**  
**FOR WATER SUPPLY PHASE 2**  
**IN**  
**THE REPUBLIC OF THE SUDAN**

The 7<sup>th</sup> Joint Coordinating Committee (the JCC) was held on the 28<sup>th</sup> May, 2014 for the Project for Human Resources Development for Water Supply Phase 2 (the Project) in the Republic of Sudan, the Drinking Water and Sanitation Unit (the DWSU) and the Drinking Water and Sanitation Unit Training Centre (the DWST) at the DWSU conference room. The main topics of the JCC were presenting the third year activities, briefing on the new training centre, and discussing community involvement approaches in managing water supply facilities as well as sharing successful stories among participating members. The meeting members have mutual understanding concerning the meeting agendas referred to in the document attached hereto.

Khartoum, 28<sup>th</sup> May, 2014

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Mm. Eatidal El Rayah Malik  
Director  
Drinking Water and Sanitation Training  
Centre (DWST)

witnessed by

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Mr. Mitsuro Uemura  
Team Leader  
JICA Project Team

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Mr. Mohamed H. M. Ammar  
Director General  
Drinking Water and Sanitation Unit  
(DWSU)

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Mr. Koike  
Chief Representative  
JICA Sudan Office

Total of 43 JCC members participated in the meeting.

Mr. Mitsuro Uemura, the Project Team Leader, presented to the participants the activities implemented in the third year of the project after which they were briefed on the project up-to-the-moment achievements by the DWST as well as the latest progress concerning the new training centre construction and establishment. Mr. Arata Sasaki, the JICA Expert on Community Development, delivered a presentation on involving community members in managing and steering of water supply facilities after which an extensive discussion took place.

The audience of the JCC members discussed and commented on the information presented. As result of the discussion, the DWSU and the attendees of SWCs expressed general agreement. Major items discussed are described hereafter.

The Minutes of Meeting contains (8) pages including the cover sheet and the annex.

Annex:

1. Program of the 7<sup>th</sup>Joint Coordination Committee (JCC).
2. Attendance List of the 7<sup>th</sup> JCC Meeting on 28<sup>th</sup> May, 2014.

The meeting was started with reciting from the Holy Quran by Mr. Abdelmajid of the DWST. Mr. Abdelmajid welcomed the 7<sup>th</sup> JCC members attending while paid tributes to Mr. Koike, the Chief Representative to JICA Office in Sudan, Ms. Nakata, Secretary to the Embassy of Japan in Khartoum, Mr. Mohammed H. M. Ammar, Director General of DWSU, the Directors General of the SWCs, and JICA Sudan Office staff. After the opening by Mr. Abdelmajid, the JCC members introduced themselves.

### **1. Greetings by JCC Members:**

Mr. Koike, the Chief Representative to JICA Office in Sudan paid tributes to Mr. Ammar, the Director General of DWSU, Mrs. Eatidal, the Director of DWST, Director General of SWCs, and Ms. Nakata, Secretary to the Embassy of Japan in Khartoum.

Mr. Koike expressed his pleasure to be among the participants of the JCC meeting. Mr. Koike mentioned that it is not important where one starts as it is to where one ends. He reminded the JCC members with the fact that only one (1) year remains in the project span. Mr. Koike reminded the JCC members with the project's purpose which is "water supply in Sudan is properly managed". He mentioned that in order to achieve that purpose, the project implementers have been working very hard. He also mentioned that many states have established their own training centres and have successfully allocated training budget. Mr. Koike mentioned that sustainability is what really matters. He complimented the work done by Mrs. Eatidal and her small team as he described it as tremendous.

Mr. Koike mentioned that it may have been believed that the delay of the construction of the new centre for three (3) years has affected the project implementation. He also mentioned that the pilot states of White Nile and Sennar have certainly faced their unique challenges as he called for the SWCs in both pilot states to share their experiences and collaborate with other SWCs. He mentioned that the project coordinators at each pilot SWC have the opportunity to disclose information and share their states good practices and success stories.

Mr. Koike mentioned that JICA has set the cooperation with Morocco considering that both countries have many aspects in common despite which Moroccans have managed to make good water supply system. Mr. Koike expressed appreciations to the hospitality and good reception shown by the Sudanese counterparts when receiving Moroccan Experts in Sudan. He also complimented the Sudanese counterparts' active engagement in discussions and other activities included in the study tour for Moroccan Experts in Sudan.

At the end of his speech, Mr. Koike called for the Directors General to believe in themselves and to put faith in the great potentials of Sudan.

From her side, Ms. Nakata, the Secretary to the Embassy of Japan in Khartoum paid tributes to Mr. Ammar, the Director General of DWSU, and Mr. Koike, the Chief Representative to JICA Office in Sudan. Ms. Nakata expressed her pleasure to participate in the 7<sup>th</sup> JCC meeting and thanked the members for their attendance.

Ms. Nakata paid tributes to the Ministry of Water Resources and Electricity, the DWSU, and JICA for their efforts in implementing the project's plan. Ms. Nakata mentioned that Japan believes in the potentials of Sudan as it does in the importance of peace and stability to the country's future. She reassured the audience on Japan's commitment to supporting Sudan as an equal partner. She also mentioned that this support to Sudan is not only limited to humanitarian aid.

Ms. Nakata mentioned that the project is one of the first ones implemented to cover the Japan and JICA pillars of Water, vocational training, and health. She mentioned that the project is expected to be concluded in September, 2015. Ms. Nakata mentioned that the most significant asset for project implementation is not its plan or equipment but its human resources. Ms. Nakata mentioned that the transfer of technology and knowledge from one generation to another as well as from one state to another is the key to development. She mentioned that one day Sudanese will be able to execute the work without the need of Japanese Experts aid. She mentioned that mutual cooperation is what shall remain.

Ms. Nakata mentioned that the Embassy would like to see a collaboration taking place between UN agencies, JICA, and the Government of Sudan. She expressed her delight to announce that in last February, the Government of Japan has approved appropriating US\$22.5M for Sudan that shall be disbursed to different UN agencies. She mentioned that the approved fund shall be utilised for implementing many projects that covers various sectors including water.

Ms. Nakata mentioned that the Government of Japan is happy to lend hands to those who believe in the mutual goal; peace, stability, and sustainable economic development. She mentioned that the latter require preparation as she called for the JCC members to smoothen communication. Ms. Nakata mentioned that the funding of projects is the evidence to the commitment by the Government of Japan to Sudan's development.

At the end of her speech, Ms. Nakata mentioned that the Government of Japan shall continue supporting Sudan.

## **2. Opening Remarks by Mr. Ammar of DWSU:**

The 7<sup>th</sup> JCC meeting's opening remarks were delivered by Mr. Mohammed H. M. Ammar the Director General of DWSU in which he first paid tributes to Mr. Koike, the Chief Representative to JICA Office in Sudan, and Ms. Nakata, the Secretary to the Embassy of Japan in Khartoum.

Mr. Ammar welcomed all the audience to the meeting as he also welcomed the support by the Government of Japan to Sudan which he described as generous. Mr. Ammar also welcomed Mr. Koike and wished him a successful assignment in his new position.

Mr. Ammar explained to the audience on the efforts appropriated by the DWST in 2014 which resulted in conducting (12) different training courses covering various topics in water. He mentioned that over (182) trainees have successfully participated in these courses. Mr. Ammar also mentioned that the DWST is intending to implement additional (13) courses by the end of 2014.

Mr. Ammar mentioned that several new courses have been proposed by the DWST on design and construction to haffirs and dams, operation and maintenance of mechanical equipment, management of Water Yards, the importance of activating water-related legislations, and sanitation and its impact on water resources.

Mr. Ammar reported to the audience on the efforts appropriated by the SWCs which resulted in completely establishing (7) training centres in the states. Mr. Ammar expressed hopes for the Government of Japan extending the project to a third term of four (4) years. He mentioned that such extension shall be essential for completing the establishment of states' training centres, activating

monitoring units, and linking the DWSU with SWCs via information network that would ease the exchange and sharing of data and information.

**3. Presentation on Project Third Year Activities by Mr. Uemura of the Project:**

Following the opening remarks by Mr. Ammar, Mr. Mitsuro Uemura, the Project Team Leader delivered a presentation to the audience on the project third year activities implemented. The presentation contents included introduction to the project structure and main approach as well as explanation on the project and the progress achieved up to the moment.

At the end of his presentation, Mr. Uemura urged the DWSU to completing the construction of the new training centre in kilo ten.

**4. Presentation and Proposal on Community Involvement Approach by Mr. Sasaki of the Project:**

Following the presentation by Mr. Uemura, Mr. Arata Sasaki, JICA Expert on Community Development delivered a presentation on the approaches of community involvement in water supply facilities operation and maintenance.

Mr. Sasaki started his presentation by introducing the differences between Morocco and Sudan in terms of community-based water supply facilities management. He demonstrated to the audience that the government in Sudan is implementing the majority of operation and maintenance work required in water supply facilities. He also explained about the current issues within the existing Water Yards.

Mr. Sasaki proposed a new approach in managing the supply facilities in which the members of community are involved in implemented minor maintenance works on supply facilities.

**5. Presentation on the Results of Morocco Training by Ms. Tawasul of the DWST:**

Following Mr. Sasaki's presentation, Ms. Tawasul Mohamed of the DWST delivered a presentation on the results of training in Morocco in which she, among other SWC staff, has participated. Ms. Tawasul briefed the audience on the various training activities implemented in Morocco and she made clear comparison between Morocco, an advanced model country to Sudan, and the current situation of water supply in Sudan. Her presentation included suggestions and recommendations for developing water sector in Sudan as well.

**6. Presentation on the New Training Centre by Mrs. Eatidal of the DWST:**

Mrs. Eatidal El Rayah Malik, the Director of DWST delivered a presentation to the audience in which she explained about the training system that is expected to be adopted upon the completion of the new training centre construction in kilo ten. Mrs. Eatidal presentation included the new approaches which shall be considered when the new training centre is done such as implementing several training courses simultaneously, etc.

**7. Signing of Handover Agreements on Equipment Procured in the Third Year of the Project:**

Following the presentations session, the handover agreement on the equipment procured in the third year of the project was signed by the Government of Sudan, represented by Mr. Mohammed H. M. Ammar, the Director General of DWSU, and JICA represented by Mr. Koike, the Chief Representative to JICA Office in Sudan.

**8. Discussion on Community Involvement Approach and Budget Allocation:**

Following a short break, the JCC members discussed thoroughly the two (2) points on the discussion agenda which are; the feasibility of involving community members in operation and maintenance of water supply facilities and various approaches for allocating necessary operation budget.

The discussion was joint by Ms. Takahashi of the UNOPS who explained about the latter's activities particularly in North Darfur State where a water treatment plant is being constructed. Ms. Takahashi expressed appreciations for the collaboration with the DWST and JICA Project.

At the end of the discussion, the JCC members mutually agreed on the importance of involving community members in operating and maintaining water supply facilities.

**9. Extension of JCC meeting period:**

The JCC members agreed on the proposal for extending the JCC meeting to be held in two (2) days rather than one (1) day. The JCC members also agreed that the new period shall be applied starting the forthcoming JCC meeting expected to take place in October, 2014.

**10. Closing Remarks:**

Mrs. Eatidal El Rayah Malik, the General Director of DWST delivered the 7<sup>th</sup> JCC meeting closing remarks to the audience in which she recapped the outputs of the 7<sup>th</sup> JCC meeting. Mrs. Eatidal encouraged the SWCs to investigate every possible budget resources.

<END>

## Annex-1 . Program of the 7<sup>th</sup> JCC Meeting

No	Contents	Time	Name	Organization	Position
1	Reciting of Quran	9:30	Mr.Abdela Majed	DWST	Training Course Coordinator
2	Introduction of JCC Members	9:35	Mr.Abdela Majed	DWST	Training Course Coordinator
3	Greetings for JCC(1)	9:40	Mr. Seiichi Koike	JICA Office	Representative
4	Greetings for JCC(2)	9:50	Ms. Midori Nakata	Embassy of Japan	Second Secretary
5	Greetings for JCC(3)	10:00	Mr.Mohamed H Ammar	DWSU	Director General
6	Summary of the 3rd Year Activities	10:10	Mr. Mitsuro Uemura	JICA Project	Team Leader
7	Approach of the Community Development	10:30	Mr. Arata Sasaki	JICA Project	Expert
8	Results of the 3rd Training in Morocco	10:40	Ms. Tawasul Mohamed	DWST	Training Course Coordinator
9	About New Training Center	10:50	Mm.Eatidal Elrayah Malik	DWST	Director
10	Handing Over of the Equipment	11:05	Mr. Mitsuro Uemura	JICA Project	Team Leader
11	Discussion	11:10	Mm.Eatidal Elrayah Malik	DWST	Director
12	Closing Remarks	11:30	Mm.Eatidal Elrayah Malik	DWST	Director
13	Breakfast	11:40	Mr.Egbal	DWST	Training Course Coordinator

## Annex-2 . Attendance List

No.	Name	Organization	Position
1	Ms. Nakata Midori	Embassy of Japan	Second Secretary
2	Mr.Hatem Elhag Abbas	Embassy of Japan	
3	Mr. Koike Seiichi	JICA Sudan Office	Chief Representative
4	Ms.Hisae kato	JICA Sudan Office	Project Formulation
5	Ms.Nahla Hussein Hassan	JICA Sudan Office	Program officer
6	Mr.Kiyofumi Tanaka	JICA K-top	Team Leader
7	Mr.Uemura Mitsuro	JICA Expert	Team Leader
8	Mr.Sato Tadashi	JICA Expert	Expert(Darfur Project)
9	Mr.Arata Sasaki	JICA Expert	Expert(Community Development)
10	Mr.Tarig Hassan	JICA Project	Project Coordinator
11	Mr.Kazuyo Mitsuhashi	UNOPS	Project coordinator
12	Mr.Salah Ibrahim	UNOPS	Project coordinator
13	Mr.Mohamed Hassan Ammar	DWSU	D.G
14	Ms.Eatidal Elrayah Malik	DWST	PWCT Director
15	Mr.Egbal Bakheit	DWST	Coordinator
16	Mr.Abd Elmajed Ahmed	DWST	Coordinator
17	Mr.Elmontaser Bashary	DWST	Coordinator
18	Mr.Muataz Hassan	DWST	Assistant
19	Ms.Safya Ali Babker	DWST	Chemist
20	Ms.Tawasel Mohamed Ali	DWST	Chemist
21	Mr.Omer Elsunni	DWST	Coordinator
22	Mr.Mohamed Yahia	DWST	I.T
23	Mr.Hassan Ali Elhaj Elmahi	Northern SWC	D.G
24	Mr.Abdalla M.Mahmoud	Northern SWC	Director of Training Center
25	Mr.Elsadig M.Tahameed	White Nile SWC	D.G.
26	Mr.Ahmed Elyeb Suliman	White Nile SWC	Director of Training Center
27	Mr.Abbas Hamid	Sennar SWC	Director of Training Center
28	Mr.Hashim Abdelatif	Kassala SWC	D.G.
29	Mr.Alayh Ahmed Jebreel	Blue Nile SWC	D.G. representative
30	Ms.Batoul Saad Abdalla	El Gezira SWC	Director of Training Center
31	Mr.Bedreldin Abdalla	ElGazira SWC	WES P.M
32	Mr.Abdalla Mohammed	ElGazira SWC	Tech. officer
33	Mustafa Ibrahim Mustafa	Gedaref SWC	D.G.
34	Mr.Awwad Abdel Rahim	Red Sea SWC	Director of Training Center
35	Ms.Maha Eltayb	Red Sea SWC	Chemist
36	Mr. Mawui Adam Mohammed	North Kordofan SWC	D.G. representative
37	Mr.Hassab Alla Hamed	South Kordofan SWC	D.G. representative
38	Mr.Ibrahim Shaib Mohamed	West Kordofan SWC	D.G.
39	Mr.Ibrahim Abaker Digies	Central Darfur SWC	D.G.
40	Adris Dabaka	South Darfur SWC	D.G.
41	Mr.Mohamed Hassan Mohamed	West DarfurSWC	Representative
42	Mr.Ali Eltom Ali Rawi	East Darfur SWC	D.G.
43	Mr.Mustafa Idress Mohamed	North Darfur SWC	Rural water manager
44	Mr.Mohamed Abdel Gadir Mahdi	El Hawata W.C	D.G.





**MINUTES OF THE MEETING**  
**ON**  
**THE 8<sup>TH</sup> JOINT COORDINATION COMMITTEE MEETING (JCC8)**  
**FOR**  
**THE PROJECT FOR HUMAN RESOURCES DEVELOPMENT**  
**FOR WTAER SUPPLY PHASE II**  
**IN**  
**THE REPUBLIC OF SUDAN**

The 8<sup>TH</sup> Joint coordination committee meeting for the Project for Human resources Development for Water Supply Phase 2 (the Project) in the Republic of Sudan was held on 3<sup>rd</sup> November 2014 at the Drinking Water and Sanitation Unit (DWSU) conference room. The main topics of the JCC were the activities of the 4<sup>th</sup> year of the Project, the establishing of the monitoring and information center and the construction of the Kilo-10 new training center.

As a result of discussion, the meeting members had approved the activities of the Project for the 4<sup>th</sup> year, and had a mutual understanding concerning the matter referred to in the document attached hereto.

Khartoum, 3<sup>rd</sup> November, 2014

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Mm. Eatidal El Rayah Malik

Director

Drinking Water and Sanitation Unit  
Training Center

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Mr. Jun Onodera

Deputy Project Team Leader

JICA Project Team

Witnessed by

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Mr. Mohamed H. M. Ammar

Director General

Drinking Water and Sanitation Unit  
Training Center

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Mr. Sigeru Otake

Sennior Representative

JICA Sudan Office

Total (xxx) participated in the JCC meeting.

Mr. Jun Onodera, Deputy Project Team leader explained the circumstances of absence of the Project Team leader Mr. Uemura, the measures been taken to manage the Project during the 4<sup>th</sup> year.

The future activities for human resources development for water supply were explained and discussed with the director of DWSU and the representatives of SWCs. The programme and attendance list are shown in the Annex of this document.

As a result of the discussion, the DWST expressed general agreement. Major items discussed are described below.

The Minutes of the Meeting contains (xxx) pages, including the cover sheet and the Annex.

Annex:

1. Greetings to the JCC meeting.
2. Programme of Joint Coordination Committee Meeting (JCC).
3. Attendance List of the 8<sup>th</sup> JCC Meeting on 3<sup>rd</sup> November, 2014.

The meeting started by Mr. Abdelmajid, who thanked the attendance to the 8<sup>th</sup> JCC Meeting, then he recited some verses from the Holly Quran. Then participants introduced themselves.

Before and after the discussion of main content of the JCC, the following 6 persons addressed their greetings (greetings enclosed in the Annex):

- Mr. Mr. Shigeru Otake, Senior Representative, JICA Sudan Office
- Ms. Midori Nakata, Second Secretary, Embassy of Japan
- Mr. Mohamed Hassan Ammar, Director General, DWSU

Mr. Onodera explained the “Summary of the fourth year activities” which will be implemented in the absence of Mr. Uemura, Project Team Leader who will supervise the work from Japan.

Mr. Onodera explained about the circumstances of the absence of Mr. Uemura, Project Team Leader who will stay in Japan for personal reason to take care of his sick wife. Mr. Onodera explained that a TV conference system will be established this year to enhance the communication between Tokyo, Khartoum and the Pilot States.

The main topics of the 8<sup>th</sup> JCC were the 4<sup>th</sup> year activities are the establishment of the monitoring unit in DWSU and the States, and the construction of the new Kilo-10 training center, in addition to the human resources development plan for water supply. After the presentations and discussion, the participants agreed the content of the following discussion items:

#### **1. Monitoring and Information Center:**

- **Monitoring structure:** The Ministry of Physical Planning in each state shall be included in the monitoring structure as it is the responsible organization to finance the activity of the SWC at state level, while the Ministry of Water Resources and Electricity remain in the monitoring structure in the federal level.
- **Monitoring Feedback:** In spite the decentralization policy of Sudan Government, but still the need to share the state monitoring information with DWSU for the purpose of:
  - a) National Planning
  - b) The comparison between the states to extract lesson learned and exchange of experience.
- **Time table:** A monitoring time table to visit the states shall be fixed in consultation with each state, in order to avoid overlapping of activities.
- **Specification type:** The specification is the responsibility of the DWSU, but for the monitoring purpose, the Monitoring Unit shall collect information according to the available technology in each state.
- **The restructuring of DWSU:** The decentralization is a national policy, and then the DWSU will not be restructured to have centralized form unless the decentralization is cancelled.

However the relation between the state and the DWSU remain in the level of planning and coordination.

➤ **The equipment for monitoring:** The top priority is to establish the monitoring unit in each state. However, the DWST will consider supporting the equipment as second step.

➤ **Role of DWSU:** Mm. Eatidal explained that in spite of the decentralization, but DWSU still has relation with the states such as the foreign aid projects, the specifications and the tenders and so on. All these activities can be expanded and continued if we have good information sharing.

She added that by the coming March 2015, we would like to have tangible progress on monitoring activity. It is very important to build database that link the DWSU to the states. DWSU is ready to visit all the states and provide supports, but it is your responsibility to establish the Monitoring Units.

➤ **Challenges:** Mm. Eatidal explained that there are financial challenges facing the monitoring, but she requested from the states to follow White Nile state who allocated budget for the monitoring effectively.

She added that the small number of engineers (about 40 engineers) of DWSU creates limitation for WSU to support all the states. And then she persuaded the states to start establishing the monitoring unit by their own effort.

The participants from other states as well mentioned many challenges facing the monitoring, such as the overlapping of responsibilities between DWSU, SWCs, Dam Unit, Ground Water and Wadi Department and Ministry of Urban Planning. In general the relation between SWCs and DWSU is unclear.

## 2. About New Training Center

Mr. Ammar in his speech explained that the construction of the new training center at Kilo-10 already started October last month. However, DWSU has some problem with the Iranian contractor yet to be solved. Extensive meeting with the Iranian contractor are ongoing and the training center will be completed in the near future.

## 3. Others

### The Moroccan Experts visit

The Moroccan experts will visit Sudan next December, 2014. DWST has new vision of the cooperation with the Moroccan experts. This vision exceeds the training to more comprehensive goal that addresses the formulation of water laws and policies. The Moroccan experts during their next visit to Sudan will meet with the Minister of Human Resources and Labour and the Minister of Water Resources and Electricity to discuss more on such issues.

Annex 1

**1) Greetings to JCC (1) by Ms. Midori Nakata, Second Secretary, Embassy of Japan**

Mr. Mohamed Ammar, Director General of Drinking Water and Sanitation Unit

Mrs. Eatidal Elrayah Malik, Director of Drinking Water and Sanitation Unit

Mr. Jun Onodera, Deputy Team Leader of JICA Project

Mr. Shigeru Otake, Senior Representative of JICA

Distinguished Guests,

Ladies and Gentlemen,

Good morning,

I am very happy to be here with you today to attend this important meeting that comes some months before the conclusion of this vital project. Allow me in the beginning to thank everyone attending today as your presence will help to exchange views and opinions and discuss achievements and performance reports to pave the way for the success of this project. I also want to express my deepest appreciation and gratitude for the Ministry of Water Resources and Electricity, Drinking Water and Sanitation Unit (DWSU) and JICA for their sincere efforts to realize the overall goals of the project.

Our life is completely dependent on water and all living species need water to live. JICA knows the significance of water and the importance of addressing this problem in Sudan; therefore, JICA has included water in its 4 main sectors that also embrace health, vocational training and agriculture. Japan has decided to implement this project to develop the capacity of training implementation of the Public Water Corporation Training Center (PWCT). As you all know this year marks the 4th year of the Phase 2 of the project that kicked off in 2011. At this moment, all the Japanese experts and their Sudanese counterparts are exerting their maximum efforts to realize the fruits of the project. I do hope that the project will be implemented on a broader scale to include all Sudanese states.

Ladies and Gentlemen

Meeting the basic human needs and promoting the capacity building is the part of Japan's focuses in its development assistance to Sudan. In this regard, Japan has been supporting the improved access to water supply through both rehabilitation and expansion of existing water treatment plants and providing technical assistance in the human resource development for water supply system management. At this point, I want to praise and laud the level of coordination between Sudan and Morocco in the water sector since 2012 which has been highly evaluated. I hope that the results of this cooperation will play a key role in the water sector, not only at the present time, but in the future as well.

Japan has been implementing various development projects all around Sudan with the respect of “Ownership”, “Self-help” and “Partnership”. This concept has been the underlying principle of Japan’s overall assistance to Sudan, which is our assistance “Philosophy”. To this extend, I must stress that the Japanese assistance to Sudan is not a “charity”. Not one-way approach from a donor to a recipient, but we move forward hand-in-hand with the people and the Government of Sudan in order to realize the peace, stability and sustainable development based on the Sudanese people’s strong commitments. This requires long preparations, careful research and your action, yet this is the essence of our approach. For that purpose, we strongly encourage all the counterparts and stakeholders to strengthen smooth internal communications in each administration so that our joint projects will bear bigger fruits.

Despite the positive achievements and remarkable progress that were realized so far from this project, I would like to draw your attention to some challenges that need to be addressed and settled through the Sudanese side. These challenges were highlighted in the interim report of 2014 and we still need early completion of construction of the new training centres, establishment of the monitoring unit and its substantial activity and establishment of sanitation unit and activity. Despite being mentioned in the interim report, we Japanese side, requests each actor to step forward in the fore mentioned points. Please keep this in mind without fear of the misunderstanding; I would say this project can’t be evaluated properly unless these issues are resolved. The final report of this project is expected to be issued in March 2015, till this date, I sincerely hope that maximum efforts will be realized to acquire the best evaluation. I also hope that the newly constructed training centre will be the most excellent and elaborated one in East Africa, where the trainees wait to join seeking for the best trainings.

Ladies and Gentlemen

Japan recognizes Sudan as an important country for realizing peace and stability in Africa and the whole world. Japan has committed itself to support Sudan, not only through multilateral humanitarian assistance but also more actively through bilateral development assistance.

At the end of my remarks, allow me to reiterate that Japan will continue working towards Sudan’s peace, development and stability through implementing a number of projects hand in hand with the people and the Government of Sudan. I sincerely hope that the Japanese contributions will continue to serve Sudanese people, and will be remembered by the people for decades to come and will further enhance our distinguished friendship and partnership.

Thank you.

## **2) Greetings to JCC by Mr. Shigeru Otake, Senior Representative of JICA**

Mr. Mohammed Ammar, Director General of Drinking Water and Sanitation Unit  
Madame Eatidal Malik, Director of DWSU Training Center

Director Generals of State Water Corporations  
Ms. Midori Nakata, Second Secretary of Embassy of Japan  
Distinguished Guests,  
Ladies and Gentlemen

It is my great pleasure to join 8th JCC meeting today with all of you.

This is the fourth and Last year of our project. This is the last mile in this phase but the beginning of the journey for the water sector in Sudan.

In the last three years all of you worked very hard. DWST strived to build a national training system. The pilot states of White Nile and Sennar faced their challenges and learnt a lot from the expert and are now willing to disseminate their experience to other states. While almost all of the states now has their own training centers.

You have developed a lot in this project but still a lot needs to be done. Remember this is your responsibility & your burden. It is your job no one else will do it. JICA can help so little but you are the ones who will do the job, you are the ones who are working now and who will continue. Remember this may be your last time to meet the Japanese experts, learn as much as you can, work as hard as you can, and be proud and appreciate what you have done.

We are very happy that the construction of the New Training Center has finally started; and although the construction delay has minimized its contribution in this project we hope that DWST will utilize it to the maximum by preparing plans and budget for the expected expansion.

The objective of this project is “water supply system is properly managed in Sudan” this is the actual goal. Training and capacity building are just tools. The end goal is for Sudanese citizens to have access to clean drinking water. For that the status of water facilities is of utmost importance. Monitoring operation & maintenance of water facilities is essential to your work. It is an indicator for the impact of this project but it should continue & be an integral process in water sector. After the last JCC Kassala SWC made great efforts, they have prepared monitoring forms with the help of K-TOP experts and started collecting data in the different localities. They are expected to finish collecting data from all the localities within two months. These are great efforts that we can all learn from.

DWSU has established a directorate for Sanitation Management. Hopefully this directorate will be activated and DWSU will cooperate with other ministries and agencies like ministry of health and UNICEF to streamline sanitation activities.

We understand that water sector situation is very far from ideal but that doesn't mean you can't achieve your goals. Always look at the Moroccan experience and when you see the great change they made remember that you are more than capable to do it too. And by continuing cooperation with the Moroccans after the end of this project you have a great model to follow and learn from.

The Terminal Evaluation Mission for this project will come in March we hope that the mission will find great progress from the results of the mid-term review report.



In the end Actions are lauder than words and we are sure that the actions you made and will make will have a lasting effect in this country.

Thank you for your efforts, thank for your time.

**3) Greeting to the JCC By Mr. Mohamed H. M. Ammar, Director General, DWSU**

Ms. Midori Nakata, Second Secretary, Embassy of Japan

Mr. Shigeru Otake, Senior Representative of JICA Sudan Office

Distinguished Guests

Ladies and Gentlemen

Good morning,

The Project will end by 2015, hence some issues need to be addressed such as the monitoring and the database management. However, we would like to discuss with the Japanese Government to extend the Project till 2018. He mentioned that such programs are highly considered and important. It would give the opportunity to improve the link between DWSU and the SWCs and it will provide rich information on the water resources, facility and the development projects progress and then we will be well acquainted about the water supply shortages in each state. Nevertheless, the establishment of the training center in the states having some progress but yet to complete. So in this occasion I would like to ask the states who don't have training center to accelerate the work so that we can request the support from the Japanese Government to provide the equipment.

DWSU started the monitoring in Gazira State and it will continue to cover other states.

Not only that but also we have problems in the networks, which we would like to add it as one of the training program in order to build the capacity of the states to construct new networks and to rehabilitate the existing ones.

Regarding the new Kilo-10 training center, the DWSU still have some problems with the Iranian contractor but an effort is ongoing to complete the center in the near future.

The new Kilo-10 training center is the only solution for the sustainability of the water yards in addition, the training center will provide TOT for the states in order to build their capacity in the rehabilitation of the water yards and the networks which a critical problem that create huge demands from the states for procurement of new pumps and other equipment which eventually constitute extra cost burden that can be avoid by the good training for operation and maintenance.

I would like to address the states saying that you know your problems better than others, but you need to take this opportunity to discuss it inclusively and we are ready to provide training programs that touch your interest.

Annex 2

8th JCC Program					
3-Nov-14					
No	Contents	Time	Name	Organization	Position
1	Reciting of Quran	9:30	Mr.Abdela Majed	DWST	Training Course Coordinator
2	Introduction of JCC Members	9:35	Mr.Abdela Majed	DWST	Training Course Coordinator
3	Greetings for JCC(1)	9:40	Mr. Shigeru Otake	JICA Office	Representative
4	Greetings for JCC(2)	9:50	Ms. Midori Nakata	Embassy of Japan	Second Secretary
5	Greetings for JCC(3)	10:00	Mr.Mohamed H Ammar	DWSU	Director General
6	Summary of the 4th Year Activities	10:10	Mr. Jun Onodera	JICA Project	Deputy Team Leader
8	Monitoring and information Center	10:30	Mr. Sala/ Mr. Omer Elsunr	DWSU	Information Center, DWSU
9	About New Training Center	10:40	Mm.Eatidal Elrayah Malik	DWST	Director
10	Discussion	10:50	Mr. Jun Onodera	JICA Project	Deputy Team Leader
11	Closing Remarks	11:10	Mm.Eatidal Elrayah Malik	DWST	Director
12	Breakfast	11:15	Mm.Eatidal Elrayah Malik	DWST	Director

## Annex3

**Joint Coordination Committee (JCC) 8th Meeting****Attendance List**

Date: November 3, 2014

No.	Name	Organization	Position
1	Ms. Midori Nakata	Embassy of Japan	Second Secretary
2	Mr. Hatem Elhag Abbas	Embassy of Japan	Socio / Economic Cooperation assistant
3	Mr. Shigeru Otake	JICA Sudan Office	Senior Representative
4	Mr. Yoshinori Kitaguchi	JICA Sudan Office	Representative
5	Mr. Jun Onedera	JICA Expert	Organizational Management
6	Ms. Nahla Hussein Hassan	JICA Sudan Office	Program officer
7	Mr. Abdelgader Babiker	JICA Project	Project Coordinator
8	Mr. Kiyofumi Tanaka	JICA K-top	Team Leader
9	Mr. Mohamed Hassan Ammar	DWSU	D.G
10	Mr. Salah El Siddig Mohamed	DWSU	WES
11	Ms. Eatidal Elrayah Malik	DWST	DWST Director
12	Mr. Egbal Bakheit	DWST	Coordinator
13	Mr. Abd Elmajed Ahmed	DWST	Coordinator
14	Ms. Safya Ali Babiker	DWST	Chemist
15	Ms. Tawasel Mohamed Ali	DWST	Chemist
16	Mr. Omer Elsunni	DWST	Coordinator
17	Mr. Mohamed Yahia	DWST	IT
18	Mr. Sharaf Eldin Mahmoud	DWST	Assistant
19	Ms. Rawaa M. Mahdi	DWST	Assistant
20	Mr. Hassan Ali Elhaj Elmahi	Northern SWC	D.G
21	Mr. Abdalla M. Mahmoud	Northern SWC	Director of Training Center
22	Mr. Fouad Awad Ahmed	Northern SWC	Accountant
23	Mr. Abdelrahman M. Elhassan	River Nile SWC	Planning Dept.
24	Mr. Elsadig M. Tahameed	White Nile SWC	D.G.
25	Mr. Ahmed Eltyeb Suliman	White Nile SWC	Director of Training Center
26	Mr. Awad Hameed	White Nile SWC	Director of Finance
27	Mr. Abbas Hamid	Sennar SWC	Director of Training Center
28	Mr. Alsari Kamaleldin	Sennar SWC	D.G. Deputy
29	Mr. Abu Zaid M. Ali	Kassala SWC	Representative
30	Mr. Moutaz Hassab Elrassol	Kassala SWC	Geologist
31	Mr. Abdalla Ahmed Mohamed	Kassala SWC	Accountant
32	Mr. Ahmed Jafar Abdalla	Kassala SWC	Chief engineer
33	Mr. Abdelrahman M. Ahmed	Blue Nile SWC	D.G.
34	Ms. Batoul Saad Abdalla	El Gezira SWC	Director of Training Center
35	Mr. Sami Omer Al Amin	El Gezira SWC	Planning Dept.
36	Mr. Isameldeen	ElGazira SWC	D.G. representative
37	Mr. Mustafa Ibrahim Mustafa	Gedaref SWC	D.G.
38	Mr. Mubarak Fateh Elrhman	Red Sea SWC	WES
39	Ms. Afra Mustafa Mohamed	North Kordofan SWC	Director of Training Center
40	Mr. Jzeldin Mohammed M. Ali	North Kordofan SWC	Training Director assistant
41	Mr. Mohyeldin Mohamed	West Kordofan SWC	Rural water Dept.
42	Mr. Ibrahim Abaker Digies	Central Darfur SWC	D.G.
43	Mr. Osman Abdel. Hamed	East Darfur SWC	Engineer
44	Mr. Ahmed Hamza Bushra	South Darfur SWC	D.G. representative
45	Mr. Nasir Eldeen Mahmoud	North Darfur SWC	D.G.
46	Mr. Mohamed Abdel Gadir Mahdi	El Hawata W.C	D.G.
47	Mr. Ashraf Abdalla Alamin	El Hawata W.C	Accountant

**JICA Project on Human Resources Development for Water Supply Phase (2)**

**Final JCC 10<sup>th</sup> and Joint Seminar**

**2<sup>nd</sup> September 2015**

**Minutes of Meeting**

**Greeting (1):**

**Mr. Mohamed Hassan M. Ammar, Director General, Drinking Water and Sanitation Unit (DWSU)**

Mr. Ammar, appreciated the Japan government and JICA for the continuous support to water sector in Sudan which assisted to improve and sustain the water services in many states. Mr. Ammar as well thanks Japan for the grant projects in Kassala and White Nile States, but he persuade Japan to support Port Sudan and North Korodfan states which suffer serious problems.

Mr. Ammar listed up the output of the human resources development achieved through the project period which represented by:

- Number of (122) training courses have been completed at DWST with total number of 1,805 persons from all the states.
- Several seminars and workshops have been conducted to exchange knowledge and experiences among different states.
- Number of (48) staffs were dispatched to Morocco for study tour; while (38) others were dispatched for more advance training in Japan.
- Training centers were established at many states including training system and equipment.
- A monitoring system was developed where actual monitoring of the rural supply facility was achieved in the pilot states.

Mr. Ammar in his final speech, strongly request from each SWC director general to support the state training centers, and he promised to continuously support their efforts.

**Greeting (2):**

**Ambassador, Mr. Hideki Ito, Embassy of Japan**



Mr. Ambassador expressed his pleasure to attend the 10<sup>th</sup> JCC meeting, and thanks Ministry of Water Resources, Irrigation and Electricity, the DWSU, DWST, the Japanese experts and all those who contributed to the success of the Project in Sudan.

Mr. Ambassador refers to his visit to White Nile State, which he described as good opportunity to recognize the appreciation of the Sudanese people to the Japanese support.

The efforts of North Kordofan, Gezira, River Nile, Kassala, North Darfur states to establish their own training centers were outstanding because they succeeded to achieve it by their own.

The water issue is very important and vital, but it is also difficult for sustainable development. It is worth to mention that Japan supported the water supply system development in Sudan in 1980<sup>th</sup> in Kassala and Omdurman, but the Sudanese has to maintain it by themselves.

Mr. Ambassador requested from the Sudanese to learn from the Japanese experts the good practices and he call them as assets for Sudan.

H.E. encouraged them to discuss and evaluate their performance; in return he promised the support of Japan to their sincere efforts. H.E. persuades the Sudanese side to exchange their experiences not only among Sudanese, but also to the African countries such as Morocco.

At the end of Mr. Ambassador Speech, he took the tree of Mr. Uemura in White Nile State which growing very good as a symbolic to the Japanese-Sudanese cooperation in the future that he wish to grow fruitfully as well.

## **DISTRIBUTION OF AWARD**

The Project for Human Resources Development for Water Supply (Phase II) adapted an approach to enhance the management at each state training center, which is the "competition". This time the JICA expert and DWSU visited about eight states to check their progress. Accordingly, the Award of Excellence was awarded to:

- Gezira State Training Center
- North Korodfan State Training Center

### **Discussion:**

#### **(1) QUESTION OF EACH PRESENTATION:**

➤ **Questions:**

*mu*

*M*

- Mr. Mohamed Abdelgader, Director General, Hawata Water Corporation

Mr. Abdelgader pointed out three topics:

- The importance to support the Project approach to have training center at each state and,
  - The support of state-state relationship through joint seminar and site visit.
  - The importance to have Morocco as model country for Sudan in water sector.
  - The importance to discuss construction of the new Kilo 10 training center during the Steering Committee meeting.
- Mr. Almadani, Director General, Sennar SWC

The new JICA technical cooperation project selected Kassala and White Nile states as pilot states. However, it is not clear what kind of support the remaining states will have?

- Mr. Mubarak Fathelrahman, Red Sea State

Mr. Mubarak believes that the study team of JICA didn't consider the difference between the states in terms of water sources, water quality and type of problems. In his opinion, Port Sudan relies on desalination treatment to supply water, but JICA expert, Mr. Uemura had bad expression about the situation in Port Sudan which might affect negatively of the Study Team. In this connection, Mr. Mubarak inquired about the criteria of selection for the pilot states.

- Mr. Ibrahim Digaice, Director General, Central Darfur State

Mr. Digaice refers that the Project completed two phases following the approach of modeling state. The Project evaluated as successful, and then we expected that the new Project shall not go for more piloting, but instead shall take the most needy, underdeveloped states as top priority.

The comment of Mr. Digaice was supported by South Kordofan state representative

➤ Answers:

- Mr. Koji Shimizu, JICA HQ

The selection criteria for the pilot states were considered as follows:

- Kassala state applied for technical cooperation project, and Japan government accepted the application and decided to make a survey. The survey found that it is important to have another state. Then;
- White Nile state Minister of Urban Planning demonstrated a strong commitment to the Project which supported the selection of White Nile as second pilot state.

- JICA has two water purification plants in Kassala and White Nile states, and from the point of utility maximization and cost efficiency, we think that it is better to have Kassala and White Nile as pilot states.

Yet, Sennar state as well as other states can always share this Project experiences through the joint seminar and study tour.

It is not only Japan and Morocco that you can extract experience out, but also there are good models in Hawata and Gezira.

Mr. Miyazaki commented that although the Project has only two pilot states but it actually supports all Sudan indirectly. It is expected that DWSU dispatches its staff to all states for more technical support.

Mr. Uemura explained to Port Sudan representative about the background of non-selection of his state as pilot. The application was submitted by DWSU in 2008, and then JICA visited Port Sudan for survey. After the survey on 2013 during the desalination convention, the Moroccan expert Mr. Hafsi explained that the maintenance system of the desalination plant was very weak and dangerous. However it was very difficult to support Port Sudan for this reason.

As for South Kordofan, JICA supported your state through an emergency program and provided equipment, unfortunately the equipment was lost during the war, and JICA couldn't confirm the situation at all.

Mm. Etidal directed the SWCs Directors to discuss more with DWSU about the problem of water sector and way to solve it.

## **(2) CONFORMATION OF THE PROGRESS OF THE TRAINING CENTER FACILITY AND TRAINING ACTIVITY IN EACH SWC:**

### **▪ South Kordofan State:**

The building and the staff already decided two years ago but nor rehabilitation was done.

### **▪ Blue Nile State:**

We have old building and staff but we couldn't make rehabilitation as we are expecting approval of DWSU, which wasn't happen till today.

### **▪ Central Darfur State;**

We have a small building that we do training on it, but we are planning to have another building within three months.

### **▪ Kassala State:**

Mr. Hashim requested to reconsider the ranking of his state in term of training achievement. He said that Kassala state has many UN agencies and NGOs who are supporting the capacity building programs.

*m. g*

Accordingly his state completed the training for 400 staffs last year 2014. Currently, total 50 staffs have been trained, although the target by the end of 2015 is 180 staffs. Not only that but also we trained 18 staffs abroad.

Mm. Etidal emphasized that DWSU is ready to dispatch national experts to each state that complete the training center building and assist to setup the training system.

### **(3) FINDING NEW TRAINING CUSTOMERS:**

Mm. Etidal directed the SWCs directors to contact the Ministry of Human Resources Development in Khartoum who are able to support the state's training centers.

#### **▪ Northern State;**

Mr. Abdalla inform that Northern state has conducted English language training courses and established a vegetable farm that produces for community for profit. The financial return out of these activities is used to finance the training center activities. In the future we would like to make use of a four kilo meter area for gold mining. Mr. Abdalla added that the Northern State Ministry of Finance promised to support the training budget by covering the cost of some training courses.

#### **▪ Hawata Water Corporation:**

Mr. Abdelgader emphasize the importance of all the lesson learnt out of the Project Phase 2 and the good examples of Gezira, Northern, White Nile and Sennar states, in addition to the support of the Ministry for Human resources Development to DWSU, but he brought the attention to the importance of the State Governors support as well which must be taken into consideration.

#### **▪ North Kordofan State:**

Ms. Afra explained that North Kordofan SWC training center already has partnership with local university and business relationship with some private companies to support customer service capacity building.

#### **▪ Khartoum State:**

Khartoum SWC has no training center, but it used to be responsible to train all the staff of the water sector. The KSWC didn't receive training application since long time but we didn't know the reason. Apparently, because each state finds other customer and that is DWST who succeeded to take our customers.

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**(4) ESTABLISHMENT OF ORIGINAL BUDGET AND BANK ACCOUNT:**

Sennar, White Nile and North Kassala states already have separate account for their training centers.

The approval of the budget is under the Director General.

**(5) TRAINING CENTER DIRECTOR MEETING AND INFORMATION SHARING SYSTEM:**

Mm. Etidal persuades the Director of each state training center to share the information not only among each other during the director meeting, but also with their SWC Director Generals, because the training center can help the DGs to analyze the problems and provide solutions. Eventually, the situation of the water sector can be improved.

**Greeting (3):**

**Mr. Hashim Abdel-Latif, Director General, Kassala SWC**

Today we are very happy to sign the new project for capacity building and infrastructure with JICA. Although this Project has two pilot states that's Kassala and White Nile, but we are ready to share all the information, and receive any number of trainees as we did before. We promise to share the knowledge and experiences with you all.

**Greeting (4):**

**Mr. Mohammed Hassan M. Ammar. Director General, DWSU**

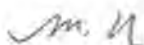
This Project will be very important for all Sudan, and hereby, I would like to seize the opportunity to thank JICA and the Government of Japan for their continuous support to the water sector in Sudan. This Project will not be limited to the two pilot states only but it will support all Sudan.

**Greeting (5):**

**Mr. Mohamed Yahia, Director General, White Nile SWC**

We are the luckiest state to have a grant project and a technical project by JICA. We appreciate a lot Mr. Uemura, Mr. Ammar and Mr. Tahameed.

**Greeting (6):**



**Mr. Akihiro Miyazaki, JICA HQ**

I am very pleased today to attend the 10<sup>th</sup> JCC of this Project which I consider the best JICA project in Africa. You have all factors to make it successful. You have the skills, the knowledge, the attitude and the most important the very good leadership.

Although this Project was completed, but today we signed a new project, of which we focus this time much more on the institutional management and the urban water supply management.

We expect from you all to participate positively on this project even if you are not a pilot state. You shall work together and share the information because it will be a good opportunity for future planning for Sudan.



Mr. Mohammed Hassan M. Ammar

Director General

Drinking Water and Sanitation Unit



Mr. Mitsuro Uemura

Team Leader

JICA Project on Human Resources

For Water Supply (Phase 2)



Mrs. Etidal Elrayah Malik

Director

Drinking Water and Sanitation Unit

Training Center



**JOINT TERMINAL EVALUATION REPORT  
FOR  
THE JAPANESE TECHNICAL COOPERATION PROJECT  
FOR  
HUMAN RESOURCES DEVELOPMENT  
FOR WATER SUPPLY PHASE 2  
IN  
THE REPUBLIC OF SUDAN**

Japan International Cooperation Agency  
and  
Drinking Water and Sanitation Unit,  
Ministry of Water Resources and Electricity,  
The Republic of Sudan

March 11, 2015

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## Abbreviations

ABHSMD	The Hydraulic Agency of South Massa-Basin in Morocco
AfDB	African Development Bank
C/P	Counterpart Personnel
DG	Director General
DWSU	Drinking Water and Sanitation Unit
DWST	Drinking Water and Sanitation Unit Training Center
IOM	International Organization for Migration
IPRSP	Interim Poverty Reduction Strategy Paper
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
M/M	Minutes of Meetings
MoH	Federal Ministry of Health
MoWRE	Federal Ministry of Water Resources and Electricity
NGO	Non-Governmental Organization
ODA	Official Development Assistance
OJT	On the Job Training
O&M	Operation and Maintenance
ONEE	National Drinking Water and Electricity Corporation in Morocco
ONEP	National Water Corporation in Morocco
PDM	Project Design Matrix
PO	Plan of Operations
PSWC	Pilot State Water Corporation
R/D	Record of Discussions
SDG	Sudan Pond
SWC	State Water Corporation
ToT	Training of Trainers
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
WB	World Bank
WES	Water, Environment and Sanitation
WHO	World Health Organization

# 1.INTRODUCTION

## 1-1. Background of the Terminal Evaluation

The Project for Human Resources Development for Water Supply Phase 2 (hereinafter referred to as “the Project”) is a bilateral technical cooperation project between the Government of Japan through JICA and the Government of Sudan through DWSU. This four-year project was launched in November 2011 and will be completed in September 2015<sup>1</sup>. With the remaining project period of about seven (7) months, JICA dispatched the Japanese Team to Sudan from 20 February to 13 March 2015, for evaluating the achievement of the Project. The Joint Terminal Evaluation team consisting of the Japanese Team and DWSU officers has undertaken the terminal evaluation jointly.

## 1-2. Objective of the Evaluation

Objectives of the terminal evaluation are as follows:

- 1) To review the degree of the achievement of inputs, outputs and the Project Purpose based on the Project Design Matrix (hereinafter referred to as “PDM”) (Annex 1: PDM version. 5);
- 2) To conduct a comprehensive evaluation of the Project from the viewpoints of five evaluation criteria (defined in 1-5. Methodology of the Evaluation);
- 3) To identify contributing and hindering factors of the progress of the Project;
- 4) To formulate recommendations for the Project and relevant parties; and
- 5) To draw out lessons learned from the Project for future cooperation in the same field.

## 1-3. Members of the Joint Terminal Evaluation Team

(1) Japanese side

Name	Job title	Occupation
Mr. Yukihiro EJIRI	Leader	Senior Assistant Director, Water Resources and Disaster Management Group, Global Environment Department, JICA
Mr. Koji SHIMIZU	Evaluation Planning	Deputy Director, Water Resources Management Team 2, Water Resources and Disaster Management Group, Global Environment Department, JICA
Ms. Hiroyo ONOZATO	Evaluation Analysis	Researcher, Global Link Management

(2) Sudanese side

Name	Position	Organization
Mr. Egbal B. Alamir	Course coordinator	Department of Training Management, Drinking Water and Sanitation Unit Training Center (DWST)

## 1-4. Schedule of the Japanese Team

The schedule of the Terminal Evaluation Team is shown in Annex 5-1.

## 1-5. Methodology of the Evaluation

In accordance with New JICA Guidelines for Project Evaluation, First Edition (June 2013), the Terminal Evaluation of the Project was conducted. The definition of the five evaluation criteria applied in the analysis for the evaluation is given in the table below.

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<sup>1</sup> Project period is divided as follows: Year 1 (2011.11 -2012.8), Year 2 (2012.10 -2013.6), Year 3 is (2013.9 - 2014.7), and Year 4 (2014.9 - 2015.10).

<b>Five Evaluation Criteria</b>	<b>Definition as per the JICA Evaluation Guidelines</b>
<b>1. Relevance</b>	Relevance of the plan for the Project has been reviewed in terms of validity of the Project objective and overall goal, in connection with the development policy of the Government of Sudan, the foreign assistance policy of the Government of Japan, the needs of beneficiaries, and the logical coherence of the Project.
<b>2. Effectiveness</b>	Effectiveness is considered by assessing the extent of achievement of the Project objective and the clarification of the relationship between the Project purpose and the outputs.
<b>3. Efficiency</b>	Efficiency of the implementation of the Project is analyzed with focus on the relationship between outputs and inputs in terms of time, quality and quantity of inputs.
<b>4. Impact</b>	Impact of the Project is evaluated on expectation level to achieve the Overall Goal and the basis of direct or indirect, positive or negative, intended or unintended influences generated by the Project.
<b>5. Sustainability</b>	Sustainability of the Project is evaluated on the political, institutional, financial and technical aspects for examining how the achievements of the Project would be sustainable after the period of the Project.

### **1-6. Data Collection Method**

Data collection methods used for the terminal evaluation were as follows:

- Review of the Project documents
- Questionnaires of Sudanese counterpart personnel (C/Ps)
- Key informant interviews of Sudanese counterpart personnel and Japanese experts, to draw out their opinions on the issues above
- Site visits of training centers and workshop, training courses, and water supply facilities

The list of C/Ps and stakeholders consulted is shown in Annex 5-2.

## **2. BACKGROUND AND OUTLINE OF THE PROJECT**

In Sudan, access rate to improved water source was 67.5% in 1990<sup>2</sup>. However, the situation has been stagnant at around 65% (91.1% in urban, 56.8% in rural as of 2010<sup>3</sup>) because of the effects of civil wars<sup>4</sup>. Government of Sudan has made efforts on improving water supply facilities with the aim to achieve full coverage of adequate and safe water supply at consumption rates of 50 liters per capita per day (L/C/day) for the rural population and 150L/C/day for the urban population by the end of 2031 as stated in “Quarter Century Strategy for Water Supply, 2007-2031”<sup>5</sup>.

The Decentralization Law, which was approved in 1994, led the local government to have much authority,

<sup>2</sup> Source: WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (<http://www.wssinfo.org/>)

<sup>3</sup> These figures are average rates of 14 states as of 2010 (Blue Nile, Gedaref, North Kordofan, Northern, Red Sea, River Nile, Sennar, South Kordofan, White Nile, Gezira, Kassala, North Darfur, South Darfur, West Darfur). Source: Documents prepared by JICA experts based on data from 2008 Census and state statistic offices. Average rates for 14 states as of 2010 (Blue Nile, Gedaref, Kordofan North, Northern, Red Sea, River Nile, Sennar, South Kordofan, White Nile, Gezira, Kassala, North Darfur, South Darfur, West Darfur)

<sup>4</sup> Comprehensive Peace Agreement was signed between northern Sudan and Southern Sudan in 2005 followed by the Darfur Peace Agreement in May 2006 and the Eastern Sudan Peace Agreement in October 2006.

<sup>5</sup> Source: “Quarter Century Strategy for Water Supply First phase programme 2007-2011”, “National Water Corporation, Ministry of Irrigation and Water Resources (2007)”

As of 2010, consumption rate is 24.0L/C/Day (18.7 in rural 42.1 in urban) according to the document prepared by JICA experts based on data of SWC and WES projects 2010



transferred from the federal government. Before the decentralization, the Public Water Corporation (hereinafter referred to as “PWC”), which renamed as Drinking Water and Sanitation Unit (hereinafter referred to as “DWSU”)<sup>6</sup>, was responsible for water supply throughout Sudan. Under the decentralization policy, the responsibility for operation and maintenance (O&M) of the water supply facilities was transferred from PWC to State Water Corporations (hereinafter referred to as “SWCs”). Therefore, the role of the PWC became limited to water supply policy, the construction of large-scale water supply facilities, coordination of the international cooperation projects, monitoring of SWCs and human resources development. However, the water sector in Sudan faced serious problems associated with lack of budget, human resources, and equipment in most SWCs.

In response, the Human Resources Development Project for Water Supply in the Republic of Sudan (hereinafter referred to as “Phase 1”) was implemented with technical cooperation by JICA for 3 years from June 2008 to March 2011. As a result, PWC Training Center, which renamed to Drinking Water and Sanitation Unit Training Center (hereinafter referred to as “DWST”), developed its training implementation capacity<sup>7</sup>. On the other hand, the issue of human resources development in the water supply sector in the state level remained to be improved further.

Therefore, the Government of Sudan requested the Phase 2 to the Government of Japan with the aim to enhance the management of the water supply system all over the country. The Project has been carried out since 2011 for the period of 4 years until September 2015 with a purpose to train properly human resources in the water supply sector in Sudan. Two pilot States Water Corporations (hereinafter referred to as “PSWCs”) of Sennar state and White Nile state were identified for pilot activities through which PSWCs developed training implementation structures as well as the monitoring system for training as well as for O&M of their water supply facilities<sup>8</sup>. At the same time, throughout the Phase 1 and Phase 2, DWSU and DWST strengthened their roles as the main center for the human resources development targeting all 18 SWCs<sup>9</sup>. Details of the project framework is PDM (Annex 1).

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<sup>6</sup> Ministry of Irrigation and Water Resources was reformed to Ministry of Water Resources in December 2011 and then to Ministry of Water Resources and Electricity in July 2012. Upon this reform in 2012, PWC changed to DWSU to cover sanitation aspect as well in 2013.

<sup>7</sup> SWC was changed to DWSU so as to cover sanitation aspect in 2013, and accordingly PWCT was renamed to DWST.

<sup>8</sup> Access rates to improved water in pilot states were 61.1% (84.2% for urban, 49.5% for rural) in White Nile state, and 82.2% (92.9% in Urban, 79.3% in Rural) in Sennar state. Consumption rates in 2010 were 25.4 L/C/Day (32.2 L/C/Day for Urban, 20.5 L/C/Day for Rural) in White Nile state, and 34L/C/Day (50.0 L/C/Day for Urban, 30.0 L/C/Day for Rural).

<sup>9</sup> The number of states increased from 15 to 18. [1. Khartoum state, 2. White Nile state, 3. Sennar state, 4. Northern state, 5. River Nile state, 6. Gezira state, 7. Gadaref state, 8. Kassala state, 9. North Kordofan state, 10. Red Sea state, 11. South Kordofan state, 12. North Darfur state, 13. West Darfur state, 14. South Darfur state, 15. Blue Nile state, 16. Central Darfur state (separated from West Darfur in January 2012), 17. East Darfur state (separated from South Darfur in January 2012), 18. West Kordofan state (separated from South Kordofan in February 2013)]

### 3. PROJECT ACHIEVEMENT AND IMPLEMENTATION PROCESS

Achievements of the Project are measured in terms of inputs, activities, outputs, project purpose and overall goals, all of which are in accordance with the PDM (Version 5.0) as in Annex 1.

#### 3-1. Inputs

The following is the list of inputs provided for the project implementation. More detail information is described in Annex 2.

##### 3-1-1 Japanese Side

(1) Experts	<ul style="list-style-type: none"> <li>In total, 10 JICA experts have been dispatched in various fields. (Annex 2-1)</li> </ul>
(2) Provision of Equipment	<ul style="list-style-type: none"> <li>245,249,213 Japanese Yen (8,880,298SDG) has been disbursed for the equipment costs of the Project<sup>10</sup>. (Annex 2-4)</li> <li>The list of equipment procured is shown in Annex 2-5.</li> </ul>
(3) Local operational Costs	<ul style="list-style-type: none"> <li>The amount of financial contribution from the Japanese side for local operational costs during the Project is 62,607,000 Japanese Yen (3,118,466 SDG) at the time of the terminal evaluation. (Annex 2-4)</li> </ul>
(4) Training of C/Ps	<ul style="list-style-type: none"> <li>In total, 36 C/Ps were trained in Morocco through three-group training by Year 3. In addition, 11 C/Ps will be dispatched in Year 4. (Annex 2-3)</li> </ul>
(5) Moroccan mission	<ul style="list-style-type: none"> <li>In total, 11 experts have been dispatched from Morocco. (Annex 2-2)</li> </ul>

##### 3-1-2 Sudanese Side

(1) Assignment of C/P	<ul style="list-style-type: none"> <li>In total, 68 personnel have been assigned as C/Ps from DWSU &amp; DWST (16), and PSWCs (24 from Sennar state, 28 from White Nile state). (Annex 2-6)<sup>11</sup></li> </ul>
(2) Provision of land, buildings and facilities	<ul style="list-style-type: none"> <li>Office space for the Project has been provided in DWST, Sennar SWC, and White Nile SWC with communication network and electricity.</li> <li>Training space were provided in DWST, PSWCs.</li> </ul>
(3) Budgetary allocation	<ul style="list-style-type: none"> <li>DWST and PSWCs secured training activity budget as below. (Annex 2-7) <ul style="list-style-type: none"> <li>✓ DWSU: 11,283,200SDG for FY2011 - FY2015<sup>12</sup>.</li> <li>✓ Sennar SWC: 1,829,621SDG for FY2011 - FY2015<sup>13</sup>.</li> <li>✓ White Nile SWC: 1,612,765SDG for FY2011 - FY2015<sup>14</sup>.</li> </ul> </li> </ul>
(4) Construction of Kilo Ten training center	<ul style="list-style-type: none"> <li>Construction of Kilo Ten training center has not been completed at the time of the terminal evaluation due to the delay in funding.</li> </ul>
(5) Office equipment and furniture for the training centers	<ul style="list-style-type: none"> <li>DWST provided office equipment and furniture, which had been used since Phase 1.</li> <li>PSWCs procured necessary office equipment and furniture for their training centers.</li> </ul>

#### 3-2. Achievement of the Project Activities

The Project activities were implemented as shown in Annex 3-1: Achievement of the Project.

<sup>10</sup> There is a difference between the figures mentioned here and those shown in ANNEX 2-5, which is caused by differences in exchange rates used for calculation. Please refer to the note in ANNEX 2-4 for details.

<sup>11</sup> Information of DG and Training center directors of other 16 SWCs (16 DG, 13 Training Directors) are listed in Annex 2-6.

<sup>12</sup> Fiscal year of Sudan starts from 1 January and ends on 31 December. DWST annual budget has increased by 12% from FY2011 to FY2012, 82% from FY 2012 to FY2013, and 18% from FY2013 to FY2014.

<sup>13</sup> Sennar SWC annual budget for training activities has decreased by 57% from FY2012 to FY2013 and increased by 36% from FY2013 to FY2014 and 15% from FY2014 to FY2015.

<sup>14</sup> White Nile SWC annual budget for training activities has increased by 9% from FY2012 to FY2013, 150% from FY2013 to FY2014 and 20% from FY2014 to FY2015.

### 3-3. Achievement of the Outputs

Findings regarding the achievement of the expected outputs as of the time of the terminal evaluation are as follows:

#### 3-3-1. OUTPUT 1

<b>Output 1:</b> Training courses are implemented by DWST based on its Mid-term/ Long-term human resources development plan.	
<b>Objectively Verifiable Indicators</b>	<b>Achievement</b>
1-1 Mid-term/long-term human resources development plan is completed by March 2013.	<ul style="list-style-type: none"> <li>▪ Based on “Quarter Century Strategy for Water Supply 2011-2031”, DWST prepared the outline of the “Mid-term and Long-Term Human Resources Developments Plan 2012-2026.” JCC discussed and approved it at the 2<sup>nd</sup> JCC meeting on 27 June 2012.</li> <li>▪ In February 2015, DWST submitted the final draft of the plan to the Federal Ministry of Water Resources and Electricity (MoWRE).</li> <li>▪ Once the MoWRE approves it, DWST will submit the final version to the Federal Ministry of Human Resources Development (MoHRD) for approval and issuing the certificate of authorization.</li> </ul>
1-2 Percentage of contributions from training coordinator on the planning and implementation of training courses increases by 100% <sup>15</sup> .	<ul style="list-style-type: none"> <li>▪ By the Mid-term review in January 2014, it has been confirmed that contribution rates of DWST training coordinators on planning and implementation of training courses reached 100%.</li> </ul>
1-3 Training courses at DWST are implemented more than 20 times annually.	<ul style="list-style-type: none"> <li>▪ DWST implemented training courses for 18 times in 2011, 21 times in 2012, 28 times in 2013, and 23 times in 2014. (Annex 3-1: Activity 1-4)</li> </ul>

Output 1 has mostly been achieved by the time of the terminal evaluation as shown in the indicators above.

Based on discussion with MoHRD, DWST worked on finalization of the “Mid-term and Long-Term Human Resources Developments Plan 2012-2026” by integrating the concept of the national strategy of human resources development. It is now at the stage of approval process by MoWRE followed by MoHRD. Regarding technical exchange between Morocco and Sudan, which is stated as one of the activities in the long-term plan, dispatch of experts from Morocco and training of Sudanese C/Ps in Morocco have been conducted annually. Annual training plan at DWST has been also developed based on “Mid-term and Long-Term Human Resources Developments Plan 2012-2026.” On the other hand, the plan is on condition that a new Kilo Ten training center is established (Indicator 1-1). Improvement of DWST training coordinators’ capacities in training management cycle can be seen in the training curriculum, textbooks and manuals which have been revised by them based on evaluation results of every course by trainees (Indicator 1-2). Although the new training center has not been built yet, DWST have planned and implemented training courses at the larger scale every year than the previous year utilizing the existing training facilities and resources (Indicator 1-3).

Through Phase 1 and Phase 2, DWST developed more than 32 training courses. Participants of these training courses are from more than 30 different organizations<sup>16</sup>. Over 80% of total trainees in DWST are from SWCs in which ex-trainees utilize their trained skills and knowledge as training coordinators as well as trainers as

<sup>15</sup> In Phase 1, DWST with technical advice by JICA Experts developed a quantitative evaluation method for the C/Ps’ training management capability. 34 necessary steps for planning and implementing training courses were extracted. After each training course, C/Ps and JICA Experts discussed to what extent C/Ps contributed to each work item and quantified it from 0 to 100. The average of the 34 marks was recorded as a contribution rate.

<sup>16</sup> In addition to 18 SWCs, trainees were dispatched to DWST from El Hawata Project, N.W.E. company, Groundwater & wadis, South Sudan authority, Sudan University, Gezira University, Africa city technology, General Administration of customs, Maritime ports authority of Red Sea state, Sudan currency printing press.

explained in 3-3-2. On the other hand, United Nations Office for Project Services (UNOPS), International Organization for Migration (IOM) and African Development Bank (AfDB), which operate in Darfur states and South Kordofan, dispatched more than 120 trainees from these areas to DWST. The issue is now how DWSU and DWST can develop further by mobilizing available internal and external resources to meet the international standard of training center with the aim to be a core center in Africa, as stated in the “Mid-term and Long-Term Human Resources Developments Plan 2012-2026”.

### 3-3-2. Output 2

<b>Output 2:</b> Training course implementation structures in PSWCs are developed by PSWCs in collaboration with DWST.	
<b>Objectively Verifiable Indicators</b>	<b>Achievement</b>
2-1 Percentage of contributions from training coordinators on the planning and implementation of training courses is increased by 80% in the PSWCs	After starting training center in 2012, both PSWCs have achieved target contribution rates (annual average of all courses) of 80% in 2013 as below. <ul style="list-style-type: none"> <li>✓ White Nile SWC: 64.8% in 2012, 80.7% in 2013, 89.1 % in 2014</li> <li>✓ Sennar SWC: 69.31% in 2012, 84.1% in 2013, 91.2% in 2014</li> </ul> (In addition, Sennar SWC have planned and implemented more than 11 courses by their own without technical guidance by JICA Experts.) (Annex 3-1: Activity 2-7)
2-2 Training courses are implemented according to the SWC training implementation plan.	<ul style="list-style-type: none"> <li>• According to the annual training implementation plan prepared, each PSWC have implemented the more courses than the previous years.</li> <li>✓ White Nile SWC: 7 courses (8 times) in 2012, 8 courses (9 times) in 2013, 8 courses (12 times) in 2014</li> <li>✓ Sennar SWC: 6 courses (9 times) in 2012, 13 courses (17 times) in 2013, 11 courses (14 times) in 2014</li> </ul> (Annex 3-1: Activity 2-7)

Output 2 has been achieved by the time of the terminal evaluation as shown in the indicators above. In both PSWCs, training coordinators have been increasing their involvement in training designing and implementation utilizing training materials and instructors’ cooperation from the previous courses. Satisfaction rates of trainees towards the courses, lecturers and facilities have generally been high at constant rates throughout the Project period<sup>17</sup> (Activity 2-8). It is remarkable that in many courses, PSWC staff members, who were trained at DWST in Phase 1, have conducted training in Phase 2 not only as training coordinators but also as instructors (e.g. water analysis, organizational management, well management, electrical, mechanical & equipment management, data management, water treatment plant management, and pipe network management). On the other hand, many of course coordinators have also taken training courses in their own training centers since 2012 and applied trained knowledge and skills at their work as well as for coordination of training courses (Indicator 2-1).

Based on “Water, Sanitation and Hygiene Sector Strategic Plan 2011-2016” of each PSWC, PSWCs have been performing their mandate. This strategic plan was formulated before PSWCs planned for establishment of training centers. Since the establishment of training centers in 2012, both PSWCs have been able to achieved target number of trainees in technical and managerial training as stated in WASH strategic plan<sup>18</sup>. In order to secure sustainability of training activities in the pilot states, PSWC with JICA Experts have been working on

<sup>17</sup> For detailed figures for evaluation results of course, lecturer & facilities for all courses implemented by PSWCs are listed in Annex 3-1: Activity 2-8)

<sup>18</sup> In Sennar State WASH strategic plan 2011-2016, activities of sector capacity building activities includes (1) training of 100 staff on managerial related issues at all levels, and (2) training of 150 staff on technical issues at all levels. In White Nile state WASH strategic plan 2011-2016, activities of sector capacity building activities includes (1) training of 120 SWC and MoH staff on WASH related technical and managerial subjects, and (2) training of 150 staff on technical issues.

formulation of “Action Plan 2015-2018”, which consists of training implementation plan<sup>19</sup> (Indicator 2-2).

### 3-3-3. Output 3

<b>Output 3:</b> Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&M of water supply system of PSWCs.	
<b>Objectively Verifiable Indicators</b>	<b>Achievement</b>
3-1 Monitoring manual is completed by March 2015.	<ul style="list-style-type: none"> <li>▪ The monitoring results of water yards at the model sites in selected localities for PSWCs were reflected for finalization of the manual. After the monitoring workshop were held at both PSWCs in January - February 2015, monitoring &amp; evaluation units completed the following monitoring manuals.               <ul style="list-style-type: none"> <li>✓ “DWSU Monitoring manual – Water Yard. March 2015”,</li> <li>✓ “DWSU/DWST Monitoring manual – Human Resources Development (Training). March 2015”</li> </ul> </li> </ul> (Annex 3-1: Activity 3-7)
3-2 Monitoring activities are implemented according to schedule.	(1) Training implementation <ul style="list-style-type: none"> <li>▪ DWST and PSWCs have been conducting monitoring activities for training implementation along with their annual training plan.</li> </ul> (2) O&M of water supply system (Water yards) <sup>20</sup> <ul style="list-style-type: none"> <li>▪ According to the monitoring plan of 2014-2015, Monitoring &amp; evaluation units conducted monitoring activities of the water yards in model sites in Year 4.               <ul style="list-style-type: none"> <li>✓ 114 sites in Tandalti locality of White Nile state</li> <li>✓ 116 sites in Singa locality of Sennar state</li> </ul> </li> <li>▪ Monitoring &amp; evaluation units of each PSWC have been conducting monitoring activities (baseline survey of water yards) for rests of the localities with their goal to complete by the end of 2015.</li> </ul>

Output 3 has been achieved by the time of the terminal evaluation as shown in the indicators above. In Output 3, two components (1. Training implementation, 2. O&M of water supply system, specifically water yards) are expected to be covered by the monitoring framework linking the locality level to the state level and the state level to the federal level.

#### (1) Training implementation

As explained in 3-3-1, in terms of monitoring framework for training implementation, the degree of achievements for establishing the monitoring system is high both at DWST and PSWCs. In case of DWST, course coordinators with JICA Experts developed tools and methods for training implementation as well as monitoring & evaluation during Phase 1. They have been practicing these effective methods and tools repeatedly during Phase 2. Similarly, in PSWCs, training coordinators have also adopted these methods and developed training database, which includes course materials and trainees’ information and results of course evaluation by trainees. Based on the monitoring plan developed by each state<sup>21</sup>, PSWCs started to share accumulated data with the DWST monitoring unit by form of “Training monitoring report”. These achievements can be recognized as the significant outcomes of the foundation of training monitoring structure at both SWCs. It is expected for DWST to systematically analyze the data received from PSWCs and feedback

<sup>19</sup> It consists of (1) Concept of human resources development, (2) Issues of water supply, Needs of human resources, Training target, (3) Achievement of human resources development (The number of courses & trainees, Comparison with State WASH strategy 2011-2016), (4) Training implementation structure, (5) Three year training plan (2014-2018) (The number of courses & participants, Target number of trainees, Budget). Source: “Sennar State Water Cooperation Training Center Action Plan (2015-2018) – Human Resources Development for Water Supply (Draft)”.

<sup>20</sup> The number of water yards is 720 in Sennar state (Source: Sennar SWC, 2015.02.24) and 372 in White Nile state. (Source: White Nile SWC, 2015.03.05)

<sup>21</sup> “Sennar SWC Monitoring Plan – Human Resources Development (Training) (2014-2015). November 2014.”, “White Nile SWC Monitoring Plan – Human Resources Development (Training) (2014-2015). November 2014.”

to PSWCs and other SWCs as well as highlight good practices and lesson learned from training center activities.

(2) O&M of water yards<sup>22</sup>

Regarding the monitoring framework for O&M of water yards, DWSU and PSWCs have accelerated their activities after the Mid-term review in January 2014. Newly formed monitoring & evaluation unit members of White Nile state and Sennar state, developed the monitoring format to measure and record condition of water yards<sup>23</sup>. According to the water yard-monitoring plan<sup>24</sup> and the monitoring manual, data of each water yard at locality level have been compiled in the database by monitoring & evaluation unit of PSWC. Moreover, in Sennar state, results of monitoring data analysis is compiled in the action plan for rehabilitation of water yards by monitoring & evaluation unit members<sup>25</sup>.

It is planned, after PSWC monitoring & evaluation units complete the monitoring activities for baseline information of water yards in all localities by 2015, regular monitoring activities with involvement of sector offices will be followed, including daily recording by water yard operators. They are planning to prepare rehabilitation plan for each locality upon completion of the monitoring activities for baseline data. Moreover, as instructed in the monitoring manual, it is planned for PSWCs to systematically update water yard data from all localities on their database and send regularly to DWSU information center for updating the database of existing water supply facilities in Sudan<sup>26</sup>. It is also intended that DWSU and DWST to utilize database for formulating of national water supply plan and systematic mobilization of equipment and materials provided by external supports.

**3-3-4. Output 4**

<b>Output 4:</b> Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST.	
<b>Objectively Verifiable Indicators</b>	<b>Achievement</b>
4-1 Human resources development manual is completed by March 2015.	<ul style="list-style-type: none"> <li>▪ DWST started developing the “Human resources development manual” in line with “Mid-term and Long-Term Human Resources Developments Plan 2012-2026”.</li> <li>▪ DWST is planning to finalize the manual by March 2015 and distribute it to all SWCs.</li> </ul>
4-2 Joint Seminar to share and disseminate the outputs of PSWCs are implemented 6 times.	<ul style="list-style-type: none"> <li>▪ DWST and SWCs implemented Joint Seminar for 6 times by November 2014 and have been planning for the seventh seminar in August or September 2015 for sharing outputs of PSWCs as well as achievements of other newly established SWC training centers. (Annex 3-1: Activity 4-3)</li> </ul>

Output 4 has been achieved by the time of the terminal evaluation as shown in above indicators. By reflecting the results of Output 1, 2 and 3, DWST has been working on development of “Human resources development

<sup>22</sup> According to State WASH strategy plan (2011-2016), consumption rates of improved water are 25.4(l/c/d) at White Nile state and 34.0 (l/c/d) in Sennar state. In both states, water supply is much lower in rural area than urban area. Thus, for monitoring activities, C/Ps and JICA Experts decided to focus on water yards which are the main water supply facilities in rural areas.

<sup>23</sup> Water yard monitoring formats were developed for (1) Baseline survey, (2) Annual survey for SWC monitoring units, (3) Seasonal survey, (4) Monthly survey for SWC locality, and (5) Daily recording for operators.

<sup>24</sup> “Sennar SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014.”, “White Nile SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014.”

<sup>25</sup> “Sennar SWC Monitoring Follow-up and Evaluation Unit Action Plan – Water Yard Rehabilitation (2015-2016). February 2015.” In this plan, Shinja sector office will conduct rehabilitation of 14 water yards with high priorities by December 2015.

<sup>26</sup> DWSU Information center/Monitoring & evaluation department use “WES Information System” which has been developed since 2005 with support of UNICEF. This database covers hand pump, water yard, hafir/dam, open well, water plant, sanitation hygiene, training, school water/sanitation, rehabilitation/O&M.

manual” in Year 4. It is intended that all SWCs utilize this manual (Indicator 4-1). The series of Joint Seminar have brought about increases in motivations and active information sharing among relevant C/Ps including all SWCs, relevant line ministries, international organizations and local organizations in the water, sanitation and hygiene sector (Indicator 4-2).

One of the significant achievements by SWCs is establishment of training centers by their own resources with technical advices by DWST and JICA Experts. Since the beginning of Phase 1, 14 SWCs out of 18 SWCs established training centers among which 2 centers are currently under renovation (Annex 3-1: Activity 4-2). These achievements at state level have been led by initiatives of SWC management staff and engineers who were trained at DWST during Phase 1 and/or participated in Joint Seminar in Phase 2. The Project contributed on provision of equipment for these newly established training centers. In addition, DWST provided technical advice on training management, training materials, and introducing course lecturers, as well as setting up of water analysis lab and computer lab<sup>27</sup>. In the most recent case of North Kordofan state training center, PSWCs visited and held a workshop for North Kordofan training center staff to transfer their training management system that they built through the Project. These technical exchanges among different states have been activated through unique gathering occasions of the Project such as Joint Seminar and JCC, Study tours, and Training in Morocco and by DWST training centers.

### 3-4. Achievement of the Project Purpose

Findings regarding the achievement of the Project Purpose at the time of the terminal evaluation are as follows:

<b>Project Purpose: Human resources in water supply sector are properly trained in Sudan.</b>	
<b>Objectively Verifiable Indicators</b>	<b>Achievement</b>
1. The number of trainees that are trained in Sudan exceeds 2,000.	<ul style="list-style-type: none"> <li>• Total number of training participants reached 1,775 in DWST and 941 in PSWCs. Thus in total, the number of the trainees in Sudan exceeds 2,716. (Annex 3-1: Activity 1-4)               <ul style="list-style-type: none"> <li>✓ DWST: Total 1,629 [182 (2009), 231 (2010), 219 (2011), 287 (2012), 380 (2013), 330 (2014), 146 (as of 11 March 2015)]</li> <li>✓ Sennar SWC: Total 418 [92 (2012), 174 (2013), 133 (2014), 19 ( as of 5 March 2015)]</li> <li>✓ White Nile SWC: Total 523 [82 (2012), 133 (2013), 222 (2014), 86 (as of 5 March 2015)]</li> </ul> </li> <li>• The number of trainees that were trained in non-pilot SWCs is also increasing as shown in Annex 3-1: Activities 4-4.</li> </ul>
2. The number of annually maintained water yards is increased to more than 20 in each PSWC.	<ul style="list-style-type: none"> <li>• Renovation and maintenance of the water yards (pump, control panel, generator, well rehabilitation, water tap, elevated tank, pipes, and others) have been conducted for more than 20 in each PSWC in Year 4 as below.               <ul style="list-style-type: none"> <li>✓ Sennar state: 32 sites (57 items) in 6 localities<sup>28</sup> (2014.10.01-2015.02.02)</li> <li>✓ White Nile state: 48 sites (85 items) in 3 localities<sup>29</sup> (2014.10.02-2015.02.20)</li> </ul> </li> </ul>

The Project Purpose has been achieved at the time of the terminal evaluation as shown in the indicators above.

<sup>27</sup> As in Annex 2-5, sets of training equipment were installed at SWCs in Northern state, River Nile state, Gezira state, Gadaref state, Red Sea state, and North Kordofan state. DWST Director provide technical guidance for basic facility components and training center management.

<sup>28</sup> Information are available for 6 localities out of 7 localities. Data from other 1 locality is not available at the time of the terminal evaluation.

<sup>29</sup> Information are available for 5 localities out of 8 localities. Data for 3 other localities are not available at the time of the terminal evaluation.

Throughout the Project period, DWST and both PSWCs have increased their training capacities by accepting the larger number of trainees with more varieties of training courses associated with stable training budget. This is the indication of high commitment given by DWSU and PSWCs for the human resources development in the water supply sector regardless of the recession that Sudanese economy has been experiencing in recent years<sup>30</sup> (Indicator 1). Regarding water yard maintenance, PSWCs staff members including those from sector offices participated in On the Job Training (OJT) for rehabilitation of water yards at the communities<sup>31</sup>. Besides training courses, trained engineers and technicians have been utilizing available equipment and tools for rehabilitation and maintenance of water yards. In addition, as explained in 3-3-3, Shinja sector office has started implementation of the rehabilitation plan of the water yards in response to the monitoring result and analysis (Indicator 2).

### 3-5. Prospects for Achieving the Overall Goal

Findings regarding the achievement of the Overall Goal are as follows:

<b>Overall Goal: Water supply system is properly managed in Sudan.</b>	
<b>Objectively Verifiable Indicators</b>	<b>Achievement</b>
1. SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities.	<ul style="list-style-type: none"> <li>▪ PSWCs staff members who were trained in DWST, PSWC training centers and the third country training courses<sup>32</sup> have been utilizing their technical skills and knowledge for their work at the locality level as illustrated in following good practices.</li> <li>✓ Trainees of well management, electrical management, mechanical management, equipment management and pipe network management engage in rehabilitation of borehole (air lift), pumps, control panels, generators, elevated tanks and pipes during and after the courses.</li> <li>✓ Trainees of community development involved in rehabilitation of water yard environment during the training.</li> <li>✓ Ex-trainees of pipe network management engage in rehabilitation of pipes as well as designing of distribution network.</li> <li>✓ Ex-trainees of water quality management revised water analysis database both for water treatment plant and water yards as well as the reporting format for analysis results.</li> <li>✓ Ex-trainee of database management and GIS/Remote sensing developed database of water facilities, water yards, alarming system for rehabilitation needs, consumption of electricity for operating water facilities and customer account as well as administrative and personnel information of the sector.</li> </ul>

It is assumable to say that the indicator of the Overall Goal will be achieved to some extent in two pilot states and some states within three to five years after the completion of the Project. As mentioned in 3-4, the Project Purpose has mostly been achieved and continuation of the Project effects will be depend on how far DWSU, DWST and every SWC can activate their monitoring structures and system for water supply facilities. However, the number of existing water facilities is large in the vast extent of land in Sudan. Types of facilities vary from treatment plant, water yard, slow sand filter, hand pump, dug well, small dam, and hafir. On the other hand, in order to achieve the Overall Goal, external factors as stated in PDM as important assumptions have to be

<sup>30</sup> After losing three quarters of oil production associated with the session of South Sudan in 2011, Sudanese economy is in recession. Government of Sudan has applied austerity measure since 2012. GDP growth rates remain negative at -3% in 2011, -10% in 2012, -6% in 2013. Inflation rates (consumer prices) remain high at 22% (2011), 37% (2012), 29% (2013). (Source: World Bank. World Development Indicators) Therefore, DWSU like other authorities have faced tight financial condition with disbursement rates of around 50% of approved budget amount from Federal Ministry of Finance. (Source: DWSU)

<sup>31</sup> Especially through well management, mechanical management, electrical management, and equipment management courses,

<sup>32</sup> Some of PSWCs staff members participated in training in Morocco (as Annex 3-1: Activity 1-4) and JICA GIS training in Ethiopia.



fulfilled (1. PSWC's staff who complete training courses do not leave SWC, 2. There is no climate change or disaster that affect the operations of water facilities, 3. Necessary budget, personnel, equipment etc. are provided in SWC at the appropriate timing).

### **3-6. Project Implementation Process**

#### **3-6-1 Contributing factors**

(1) Method of transferring skill, knowledge and techniques

<Training management cycle, evaluation method and budget planning tools developed at DWST in Phase 1>

- As mentioned in 3-3-2, PSWC training coordinators have adapted to the training management cycle including the evaluation method developed at DWST in Phase 1. In addition, in Phase 1, DWST analyzed training costs and developed training budget-planning format. In Phase 2, not only DWST but also PSWCs and some other newly established SWCs use this budget planning method and format. After one year since the opening of their training centers in 2012, PSWCs have been able to manage accurate budget planning and timely disbursement for training center activities.

<Awarding system for the trainees with high technical levels>

- Since Phase 1, DWST has issued the special certificate for the trainees with high technical levels. This resulted in promoting motivations of trainees in active participations in training courses as well as their work back in their states.

<Technical exchange among SWCs>

- Starting from Phase 1, SWCs such as Kassala SWCs and Gezira SWCs have contributed on the expansion of the technical transfer through dispatching their staff members as training course instructors to DWST and PSWCs<sup>33</sup>. Consequently, DWST and SWCs have been able to coordinate dynamic technical transfer by mobilizing available resources throughout Sudan. For instance, regarding well management course, Kassala PWC dispatched 3 staff member as instructors for the rehabilitation of the 1st well during the 1st course in PSWCs. For the rehabilitation of the 2nd well, those PSWC trainees involved in the 1st rehabilitation transferred their trained skills to new trainees. This method was repeatedly applied to increase the number of trained electrical and mechanical engineering staff as well as geologists of PSWCs in well management.

<Joint seminar and study tours>

- Information and opinion exchange opportunities have increased among participants from different states and localities not only through training in DWST and PSWCs but also through Joint Seminar and study tours implemented in different states<sup>34</sup>.

<Training in Morocco and dispatch of experts from Morocco>

- Training in Morocco and dispatch of experts from Morocco have led mutual effects on both Sudanese side and Moroccan side. For Moroccan side, which had been providing training in French, it became new opportunity to provide training in Arabic. Relevant Moroccan authorities also gained more experiences in hosting third country training in North African Region.

<Collaboration with other JICA Projects and Program>

- Mutual effects have been identified through collaboration with other JICA Projects, which implement water supply sector supports<sup>35</sup> and implement health sector support in the same target state<sup>36</sup>. Collaboration

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<sup>33</sup> Kassala SWC staff members instructed the training courses in water tariff management, Geophysical Survey (2D Geo-Electrical Imaging), and well management. Gezira SWCs staff members conducted training in database management in Sennar SWC.

<sup>34</sup> In study tour by PSWCs in , trainees visited water treatment plants in Kassala state, Gadaref state, and Gezira state

<sup>35</sup> "Capacity development project for the provision of services for basic human needs in Kassala"(2011.05-2015.04), "Project for Human Resources Development for Darfur and the Three Protocol Areas"(209.05-2013.06)

<sup>36</sup> "Frontline maternal and child health empowerment project phase 2"(2011.09-2014.09) was implemented in Sennar state.

was also made with Japan Overseas Cooperation Volunteer (JOCV) in electric/electronics for implementation of the training courses in PSWCs.

- The Project also collaborates with “The Project for improvement of water treatment plant in Kosti city” with survey activities in the target areas. JICA Experts conducted Kosti special training for relevant C/Ps of the grant project with objectives of increasing capacities in management of mechanics, equipment and electricity.

## (2) Project management system

C/Ps and JICA Experts have activated communications through JCC meetings, series of the Joint Seminar and regular meetings of SWC DGs with DWSU and DWST<sup>37</sup>. In addition, foundation of relationship among C/P organizations had already developed through Phase 1 of the Project since most of the training center directors of SWCs participated in the series of the training courses in DWST during Phase 1. Moreover, team work spirit of C/Ps have strengthened through the Project and brought about effective Project management.

## (3) Appropriate assignment of C/Ps

DWSU, DWST and SWCs assigned C/Ps appropriately in terms of number, position, and capacities (Annex 2-5). Especially those who were trained in Phase 1 played the significant roles as the training center directors of SWCs as well as training instructors and coordinators for various courses (e.g. water analysis, organizational management, well management, electrical/equipment/mechanical management, data management, water treatment plant, pipe network management) in PSWCs.

## (4) High recognition and participations of DWSU, DWST, SWCs

Through Phase 1 and Phase 2, DWSU and DWST staff members have highly recognized the Project activities. SWCs are also highly recognize the Project as reflected in the establishment and operations of training centers in 14 states and the active participations by all SWCs in JCC, Joint Seminar and training activities as explained in 3-3-4. In Phase 1, executive staff members and engineers of SWCs were core targets of the capacity development on series of training courses at DWST. It was their responsibility to disseminate their trained skills and knowledge to their colleagues. In Phase 2, once they established training centers they became the directors and course coordinators of these centers. Some of them became the Director General of SWCs.

## (5) Involvement of other stakeholders

Through training activities and Joint seminar, other organizations (e.g. Hawata water corporation, women’s association) besides SWCs involved in the Project as trainees. International organizations (e.g. UNICEF, UNOPS, IOM, and AfDB) collaborated with DWST in human resources development in the water, sanitation and hygiene sector.

### **3-6-2 Hindering factors**

#### (1) Changes in pre-condition for Output 1 & Output 3

Project activities have been implemented in line with the initial Plan of Operations (PO) for Output 2 & 4. On the other hand, there are some changes in pre-conditions for Output 1 due to lack of new Kilo Ten training center up to present and for Output 3 caused by delay in establishment of the Monitoring & Evaluation Department/Units in DWSU and PSWCs till Year 3. Because of the organizational reform of the Ministry of Irrigation and Water Resources to Ministry of Water Resources in December 2011, and then to Ministry of

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<sup>37</sup> Information of JCC and Joint seminar are shown in Annex 3-1 Achievement of the Project “List of meetings” and Topics and participants

Water Resources and Electricity in July 2012, Public Water Corporation also reformed to Drinking Water and Sanitation Unit. As a result, there was delay in establishment of the Monitoring & Evaluation Department by DWSU.

### **3-6-3 Responses to the recommendations by the Mid-term review**

In order to improve the implementation mechanism and environment of the activities during the remaining period, the Mid-term review team made the following recommendations (1) to (4). In response, following actions have been undertaken since January 2014.

#### **(1) Construction of a new Kilo Ten Training Center**

In order to maximize outcomes of the Project and to provide more opportunities to participate in the training courses, which coordinated by DWST, it is essential to establish a new Kilo Ten training center. With attempt of DWSU to solve the funding and contracting issues for construction, there had been discussion among relevant parties of DWSU and the donor. However, the construction of the training center building is unlikely to complete within the Project period.

#### **(2) Assigning a sanitation expert in DWSU**

DWST newly hired a sanitation management coordinator in June 2014. As a course coordinator of sanitation management, he has designed and coordinated the sanitation management course at DWST. MoWRE and Ministry of Health (MoH) had discussion to clarify their roles in water, sanitation and hygiene. As a result, it has been clarified that roles of DWSU and SWCs are to manage sanitation of water facilities and their surroundings as well as water quality as service providers. On the other hand, roles of MoH is to increase awareness of end users of water regarding hygiene.

#### **(3) Establishment of monitoring units**

Monitoring & evaluation department/units were formulated in DWSU, Sennar SWC and White Nile SWC with appropriate allocation of staff members (Annex 3-1 Achievement of the Project: Activity 3-1). Due to delay in formulation of the monitoring units, monitoring activities for water supply facilities under Output 3 were activated after the Mid-term Review in January 2014. Given the limited remaining Project period and inputs (e.g. human resources, equipment, vehicle), PSWCs monitoring & evaluation units have been able to conduct monitoring activities for water yards in selected localities as explained in 3-3-3.

#### **(4) Develop business mind and management capacities**

There are good examples of developing business mind and management capacities as follows.

- In Shinja sector office of Sennar SWC, director with technical support by the computer engineer of Gezira SWC developed various databases to improve management capacities of the sector office as mentioned in 3-5. Through these databases, director is able to capture situation and trend of electricity consumption by clients, consumption of electricity to operate water facilities,<sup>38</sup> and information of water facilities with malfunction that are to be rehabilitated. Consequently, it has led to efficient management for tariff collection as well as cost saving by capturing adequate operation hours and timely maintenance, and rehabilitation of water yards. Gezira SWC has applied the same system in Wad Medani and linked the database network with the training center so that sector office staff can receive training at the computer laboratory of the training center. Through introducing this database system to all sector offices in near future, Gezira SWC is aiming to provide timely and useful data to the management for decision-making.

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<sup>38</sup> In Sennar state, water tariff is collected through linking to the National Electricity Corporation pre-paid digital collection system.

- In case of Northern SWC training center, director has been working on income generation utilizing facilities and equipment such as through providing car repair services and vocational training.
- DWST provides management courses covering accounting and financing topics as well with objectives to build capacities of SWC staff in management capacities.

## **4. RESULT OF THE EVALUATION IN TERMS OF FIVE CRITERIA**

Each criteria is judged using 5 grades (High, Relatively high, Moderate, Relatively low and Low). Positive factor is indicated as [+]. Negative factor is indicated as [-].

### **4-1. Relevance**

Relevance of the Project is high as evidenced by the following factors.

The objectives and activities of the Project are in line with policies and strategy of the Government of Sudan and the Government of Japan, Project design, selection of the target groups, and Japanese technical expertise as follows.

#### **4-1-1. Consistency with the policy/strategy of Government of Sudan**

- [+] As stated in Sudan Interim Poverty Reduction Strategy Paper (IPRSP), the key challenges in the area of safe water provision in Sudan include 1) inadequate sector policies, plans, implementation and coordination, 2) lack of resources for investment in conservation, water quality and monitoring, 3) lack of community awareness of water supply & sanitation issues, and 4) the poor record of sustainability of interventions, for which DWSU, DWST and SWCs with localities are responsible<sup>39</sup>. In order to tackle these challenges, the national priority is given for capacity building and community empowerment training programs in the water, sanitation and hygiene sector partners as federal, state, and community level.
- [+] In “Quarter Century Strategic Plan for Water Supply (2007-2031)”, the Government of Sudan set the target to achieve full coverage of adequate and safe water supply for the population at a consumption level<sup>40</sup>. Under the “Water Sanitation and Hygiene (WASH) sector policy (2010)”, the government developed “Water Sanitation and Hygiene Sector Strategic Plan (2011-2016)” for federal and states and implemented with the aim to facilitate the increase of access to safe water.

#### **4-1-2. Project design**

- [+] At the end of the Phase 1, the issues of human resources development in the water supply sector in the state level remained to be improved further. The Project is designed to develop human resources through strengthening the training structure at the federal level and the state level, which is the subject of Output 1, 2 & 4. In addition, the Project integrated the approach to establish the monitoring system linking localities, states and federal for O&M of water supply facilities in addition to monitoring system for training implementation, which is the subject of Output 3.

<sup>39</sup> Source: International Monetary Fund. 2013. Sudan Interim Poverty Reduction Strategy Paper (P. 46). The basic goals of the Government is emphasized to maintain a consumption rate of 90 liters per capita per day (L/C/D) for urban centers and 20L/C/D for rural areas and to achieved the MDGs of access to improved water at 82% of population and improved sanitation facility at 67% of population by 2015. IPRSP is to support implementation of The 3-year Salvation Economic Program (2012-2014), which is an emergency plan for adjusting to new political and economic situation upon secession of South Sudan, and The 5 year Development Plan (2012-2016).

<sup>40</sup> Source: Ministry of Irrigation and Water Resources. National Water Corporation. (2008). Quarter Century Strategy for Water Supply: First phase programme 2007-2011. (P. 2) Goal is set for consumption rate of improved water at not less than 20-50 L/C/day for rural areas and 150 L/C/day for urban areas.

#### **4-1-3. The selection and needs of the target groups**

- [+] The Project targets all 18 SWCs among which two SWCs were selected as pilot sites. In term of their locations next to each other and convenience, it was appropriate to select White Nile state and Sennar state for the pilot states. Regarding Sennar state, since the “Frontline maternal and child health empowerment project” had been implemented since 2008, it was expected to generate mutual effects between the health sector and the water supply sector. As for White Nile state, the grant project by Government of Japan has been planned for rehabilitation of water treatment plants in Kosti. It is expected to have mutual effects as well. As mentioned in 3-6-1, expected mutual effects have been generated through collaboration with other JICA technical cooperation projects covering the water supply sector in Kassala state, Darfur states, South Kordofan state and Blue Nile state and the health sector in Sennar state as well as with grant projects for water treatment plants in White Nile state and Kassala state.

#### **4-1-4. Consistency with the Japanese aid policy and strategy**

- [+] Japanese development assistance policy for Sudan is to contribute on promoting sustainable peace through improvement of basic infrastructure and poverty reduction. Improvement and maintenance & management of the water and sanitation infrastructure is one of the priorities. The Project is identified as the part of the water and sanitation support program, which aims to strengthen water & sanitation facilities and management capacities as well as improvement of public service of the water supply sector.

#### **4-1-5. Japanese technical expertise in the water supply sector**

- [+] Japanese ODA to Sudan in the water supply sector started in the 70s utilizing its technical expertise for rehabilitation of water supply facilities etc. In addition, the Project utilized resources of Moroccan water supply authorities, which achieved development the water supply system with involvement of technical cooperation by JICA since the 80s.

### **4-2. Effectiveness**

Effectiveness of the Project is high as evidenced by the following factors.

#### **4-2-1. Achievement forecast and causal relations of the Project Purpose and Outputs**

- [+] As mentioned in 3-4, achievement level of the Project Purpose indicators is high. Increases in number of trainees are results of the strengthened training implementation structure with collaboration among DWST, PSWCs and SWCs under Output 1, 2 & 4. As explained in 3-4 and 3-5, trained engineers, operators and technicians in Output 1 & 2 have increased the number of maintenance of the water yards.
- [+]&[-] With the systematic monitoring & evaluation approaches just developed in Output 3, it is expected to improve O&M of water yards which does not have direct link to the Project Purpose.

#### **4-2-2. Constraints**

- [+]&[-] As in PDM, the pre-condition for the project framework includes “Political conflicts do not occur.” On the other hand, security conditions have not been stable in Darfur states, South Kordofan state, and Blue Nile state. Due to travel restrictions of DWST staff and JICA Experts to these areas, it has been hindering the Project to provide on-site technical transfer directly. In response to these constraints, DWST and PSWCs coordinated some special training courses to receive trainees from Darfur states.

#### **4-2-3. Utilization of lessons from other JICA projects and scheme**

- [+] Training in Morocco and dispatch of Moroccan experts to Sudan brought about initiation of South-South cooperation between Sudan and Morocco in the human resources development of the water supply sector. JICA have started technical cooperation in the water supply sector with Morocco since the 90s.

Morocco was selected as the training sites because of their significant achievement in water supply development associated with development of sound policy, strategy and water laws as well as integration of communities. Relevant C/Ps in Sudan gained knowledge and skills through lessons shared with the Moroccan water supply authorities.

- [+] “Capacity development project for the provision of services for basic human needs in Kassala” Project shared its resources through dispatch of trainers from Kassala SWC for well management, water tariff collection, urban water supply and geophysical survey training.

### **4-3. Efficiency**

Efficiency of the Project is relatively high as evidenced by the following factors.

#### **4-3-1. Achievement level of the Outputs**

- [+] As explained in 3-3, all Outputs have mostly been achieved by the time of the terminal evaluation. As mentioned in 3-1, inputs from the Japanese side were appropriate in terms of number, expertise, and timing of dispatching experts and providing equipment. DWST and SWCs have utilized equipment procured by the Project for training courses. Regarding the Sudanese side, DWST and PSWCs allocated necessary budget for the Project activities from their annual training budget and provided project office space, training facilities and necessary expenses to operate the planned activities. C/Ps and operations staff have been allocated in the timely manner to cover Output 1, 2, & 4 activities.
- [-] However, delay in inputs for Output 1 and personnel allocation for Output 3 have lowered efficiency of the Project as explain in the following 4-3-2 (2).

#### **4-3-2. Contributing and Hindering factors for achievement of the Outputs**

##### (1) Contributing factors

<Utilization of experiences gained through DWST training>

- [+] As explained in 3-6-1, core target groups of Phase 1, who were trained in a series of expertise at DWST, performed active roles in Phase 2 as training coordinators, instructors and training center directors in PSWC and other SWCs. Training center staff at PSWCs have efficiently adapted to the training management cycle by utilizing their experiences and technical skills gained during their stay in DWST.

<OJT for technical courses>

- [+] As explained in 3-4, regarding technical courses such as well management, electrical management, equipment management and mechanical management, PSWCs applied OJT method to ensure practical transfer of necessary O&M skills at water facility sites.

<Collaborations among stakeholders>

- [+] Collaboration among DWST and SWCs as well as with other JICA projects have resulted in efficient management of the Project activities such as training in Morocco, study tours for water treatment plants in various states, training courses at DWST & PSWCs by inviting other SWCs staff as instructors.
- [+] DWST has been able to enrich their outreach training services through collaboration with international organizations in providing training services to their program beneficiaries from conflict-affected areas.

##### (2) Hindering factors

<Delay in inputs by the Sudanese side for Output 1>

- [-] As explained in 3-6, delay in construction of new Kilo Ten training center, which is designed to have the larger capacities, caused changes in scope of some activities under Output 1. Although DWST has continued training implementation in the existing facilities, DWST has managed implementing the

training plan every year at the larger scale than previous years.

<Delay in personnel allocations by the Sudanese side for Output 3>

- [-] Delay in formulation of the monitoring units resulted in slow start of relevant activities especially for water yard monitoring under Output 3. With limited number of staff members, equipment (e.g. water level meter, EC meters) and vehicles, it has been a challenge for PSWCs monitoring & evaluation unit members to manage water yard monitoring on sites in parallel with training course implementation.
- [+] Nevertheless, the Project succeeded to develop manual and formats for monitoring O&M status of water yard as well as for monitoring training implementation. However, it is still necessary for PSWCs with sector offices and operators to adapt themselves to this constant monitoring system. It is common understanding among C/Ps and JICA Experts that the more inputs are necessary to monitor O&M status of all the existing water yards most of which are located in remote areas.

#### **4-3-3. Important assumptions on the attainment of the Outputs**

Important assumptions set out in PDM both positively and negatively affected attainment of Outputs as follows.

- [+] As mentioned in 3-3-1, throughout the Project, DWST and PSWCs have secured annual training budget constantly in spite of austerity measures by Government of Sudan and high inflation rates.
- [+]&[-] Organizational reforms were taken placed in December 2011 (from the Ministry of Irrigation and Water Resources to Ministry of Water Resources) and in July 2012 (Ministry of Water Resources and Electricity). In 2013, Public Water Corporation also reformed to Drinking Water and Sanitation Unit to integrate sanitation aspect which is the positive factor for the organization.
- [-] Some training coordinators working in DWST in Phase 1 left their jobs. However, DWST has managed training implementation activities with existing staff and new staff during Phase 2. PSWCs maintained the mostly the same training center staff members since the establishment of the centers.
- [+] Budget, human resources and necessary equipment have been provided properly by DWSU, DWST, and PSWCs for the project implementation.

#### **4-4. Impact**

Impact of the Project is moderate because Overall Goals is unlikely to be achieved within three to five years after the completion of the Project. On the other hand, there are noticeable positive impacts as evidenced by the following factors.

##### **4-4-1. Prospect of achieving the Overall Goal**

- [-] As mentioned in 3-5, it is assumable to say that the indicator of the Overall Goal will be achieved to some extent in pilot states and some other states within three to five years after the completion of the Project. Capacity development of SWC staff members are affected by operational management factors (financial, organizational, and environmental such as facilities and equipment availabilities, and security condition). In other words, if necessary inputs are allocated for O&M of water supply facilities in the sustainable manner, it is possible for trained SWC staff members, technicians and operators to properly manage water supply facilities in their states and localities with utilization of their knowledge & skills. However, in order to ensure achievement of the Overall Goal, it is also prerequisite to establish the monitoring system at every state and grasp the situation of the existing water supply facilities not limited to water yards throughout the country. Moreover, it is essential for DWSU and SWCs to fully coordinate with relevant stakeholders including Water Atlas Project and Groundwater & Wadis to carry out monitoring activities.
- [-] Setting of Overall goal in the Project framework was not appropriate in terms of external factors & time taking for building management of water supply system in the country. That is because improvement

of the water supply system required capital inputs of water supply facilities, improvement of O&M of those facilities with equipment and tools in addition to human resources development.

#### 4-4-2. Institutional aspect

- [+] Reputation of DWST as the main training center for the water supply sector has increased because of continuous efforts of DWST staff members since its establishment in 2008. While DWST has been increasing their training implementation capacities year by year, there are more inquiries from local organizations and international organizations than before. Since the participants in the training courses in DWST are not only from SWCs but also from various organizations such as research institutes, and universities, it is the positive factor to identify the clients' training needs in future.
- [+] As explained in 3-3-4, prior to the Project, majorities of SWCs did not have training centers. The Project stimulated the motivations of other SWCs. As a result, training center was established in 14 states out of 18 states with self-effort.

#### 4-5. Sustainability

Sustainability of the Project is relatively high as evidenced by the following factors.

##### 4-5-1. Policy aspect

Sustainability of the Project in terms of policy aspect is high.

[+] Water, Sanitation and Hygiene sector development through capacity building of human resources remains to be an important development agenda for Sudan as explained in 4-1-1. In line with federal and state strategies, DWSU and DWST as well as PSWCs developed various plans relevant to human resources development, O&M of water yards, and monitoring to meet the on-sites needs of water facilities with feasible timeframe and inputs as listed below. Although the existing state strategies were developed in the past without constant monitoring data, through the Project, PSWCs have prepared action plan for rehabilitation of water yards in the locality level based on the results of monitoring activities conducted for the localities set as the model sites.

Category	Organization	Relevant plan developed
(1) Human Resources Development	DWSU/DWST	Mid-term/Long-term Human Resources Development Plan. March 2015
	Sennar SWC	Sennar SWC Training Center Action Plan (2015-2018)
	White Nile SWC	White Nile SWC Training Center Action Plan (2015-2018)
(2) O&M of water facilities	Sennar SWC	Sennar State SWC Monitoring Follow-up and Evaluation Unit Action Plan – Water Yard Rehabilitation (2015-2016). February 2015
	White Nile SWC	White Nile State SWC Monitoring Follow-up and Evaluation Unit Action Plan – Water Yard Rehabilitation (2015-2016). February 2015
(3) Monitoring (Training, O&M of Water Yards)	Sennar SWC	Sennar SWC Monitoring Plan – Human Resources Development (Training) (2014-2015). November 2014
		Sennar SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014
	White Nile SWC	White Nile SWC Monitoring Plan– Human Resources Development (Training) (2014-2015). November 2014
		White Nile SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014

##### 4-5-2. Institutional aspect

Sustainability in terms of institutional aspect is high.

###### (1) Human Resources Development through training centers

- [+] If the “Mid-term/long-term human resources development plan 2012-2026” is approved by MoHRD, it is expected that DWSU and DWST will be able to increase sustainability of the Project effects. It is also essential to actualize this plan in terms of retaining trained staff members in their organizations for long-term by improving administrative management.
- [+] Both PSWCs have strong will of continuation and expansion of their training center activities. For the implementation of training center action plan for 2015-2018, sufficient number of course coordinators



were allocated to cover different topics of the course as shown in Annex 2-6.

(2) O&M of water facilities

- [+] Both PSWCs have recognized improvement of O&M quality at sector/locality level as a result of training activities. By mobilizing trained staff members and machinery and equipment provided through the Project, it is possible to continue improvement of O&M of water yards.
- [+] As explained in 3-6-3, development of databases has been progressive for management in O&M status for water yards and alarming system for rehabilitation needs in Shinga sector office of Sennar SWC and Great Medani locality office in Gezira SWC.

(3) Monitoring of water yards

- [+] DWSU and PSWCs recognize necessity of introducing monitoring system for water yards in order to manage O&M in efficient manner and to grasp the needs on sites accurately and timely. As indicated in the monitoring manual for water yards, it is feasible for monitoring & evaluation department/unit members to conduct monitoring activities by coordinating with operators at water yards and sector/locality office technical and management staff.

#### 4-5-3. Financial aspect

Sustainability of the Project in terms of financial aspect is relatively high.

(1) Human Resources Development through training centers

- [+] DWST and PSWCs have constantly secured budget for training activities every year throughout the Project as indicated in Annex 2-7. Both PSWC training centers have prepared action plan for the next 3 year. However, disbursement of annual budget is highly depend on financial condition of federal government for DWST and state government and water tariff revenue for PSWCs.

(2) O&M of water facilities

- [+] & [-] SWCs depend on water tariff revenue from which O&M costs are generated by each sector/locality. Therefore, common challenges are remained for all SWCs in how to reduce the costs of O&M by timely monitoring & early detection of problems with equipment and machinery of the water facilities.
- [+] Good practices can be seen in some SWCs. Kassala SWC has been planned to revise the urban water tariff<sup>41</sup> in order to generate financial resources for maintenance of water facilities and secure human resources for rural water supply services management. In Shinga sector office of Sennar SWC and Wad Medani sector office in Gezira SWC, where databases were developed to monitor consumption of electricity and fuel for operating water yards and clients' data with water tariff collection, it has been improvement in efficiency of financial management.
- [-] On the other hand, it has been common challenges for all SWCs to secure budget for upgrading old facilities and equipment and capital development, which normally funded by state government and federal government accordingly.

(3) Monitoring of water yards

- [-] According to the PSWCs, costs of monitoring costs by operators and locality staff are managed by sector/locality offices. Regarding the costs for logistics for monitoring & evaluation staff and locality staff, they anticipate difficulties to outreach all the water yards that are mostly in remote areas in the vast extent of land due to insufficient vehicles as mentioned in 4-3-2 as well.

#### 4-5-4. Technical aspect

Technical aspect is relatively high.

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<sup>41</sup> Urban tariff was set based on costs estimated through monitoring the meters set up in some points.

(1) Human Resources Development through training centers

- [+] C/Ps of DWST and PSWCs are confident about training management strengthened by the Project and they are willing to continue practicing tools and methods with utilization of the manuals and equipment introduced by the Project. Through Phase 1 and Phase 2, DWST became the main center of the training human resources in the water supply sector in Sudan. It is expected that DWST will be able to scale up their performance in dissemination of advance skills and techniques.
- [-] It is still essential for non-pilot SWCs to gain capacity of training implementation management through receiving technical support by DWST and PSWCs.

(2) O&M of water facilities

- [+] In order to upgrade human resources for advance technology installed in new water supply facilities in Sudan, DWST takes initiative in introducing new technology to their training courses such as Programmable logic controllers (PLC), SCADA, 2D Geo-Electrical imaging and solar energy system.

(3) Monitoring of water yards

- [-] At the pilot state level, in order to maximize the effect of training and link to the quality O&M of water supply facilities, C/Ps in PSWCs recognize that further technical supports are in needs for monitoring activities as well as technical training activities in O&M of water supply facilities.

**4-5-5. Hindering factors**

- [-] Stability in security condition of Darfur states, South Kordofan state and Blue Nile state are essential for sustainability of the project impacts.

## **5. CONCLUSION**

The Project has successfully been implemented so far although there were several internal and external factors occurred on the way and is expected to achieve its outputs fully by the end of the Project period.

Relevance of the Project is high because the objectives of the Project are consistent with strategy of Government of Sudan and the Government of Japan in the human resources development in the water supply sector in Sudan. Project design & selection of the target groups are in line with the needs of human resources development of the water supply sector utilizing the Japanese technical expertise.

Effectiveness of the Project is evaluated high since the achievement level of Project Purpose is high. Although there was constraint associate with unstable security condition in Darfur and South Kordofan and Blue Nile states, the Project was able to manage delivering the training activities for SWCs staff from these areas by inviting them in DWST and PSWCs as well as dispatching to Morocco training.

Efficiency of the Project is relatively high with high achievement level of outputs associated with various contributing factors such as active roles of DWST, PSWCs and other SWCs staff who were trained in Phase 1 as well as OJT for technical training courses, and collaboration among stakeholders. However, due to the delay in establishment of monitoring & evaluation department/units, there have been delay in monitoring activities for O&M of water yards.

Impact of the Project is evaluated moderate because of the unlikeliness of achievement of the Overall Goals within three to five years after the Project completion. Although the Project Purpose has been achieved, it is still required that various external factors to be fulfilled to achieve the Overall Goal: “Water supply system is properly managed in Sudan.”

Sustainability of the Project is relatively high because of high policy & institutional aspect and relatively high financial and technical aspect. Especially, common challenges are remained for PSWCs to involve all the operators and sector/locality offices and make the monitoring system function to cover all water yards and then to utilize the monitoring results for development of the O&M and rehabilitation plan for all localities.

Now DWSU, DWST and SWCs are expected to take initiative for continuing these activities by taking the following recommendations into account.

## **6. RECOMMENDATION AND LESSONS LEARNED**

### **6-1 Recommendations**

The Joint Terminal Evaluation Team recommends that the following actions be taken so that the outcomes of the Project will be utilized and sustained after the Project.

#### **6-1-1. Recommendations for the activities until the end of the Project Period**

In order to secure the achievement of the Project, recommendations are made as follows.

(1) Approval process of “Mid-term/Long-term Human Resources Development Plan 2012-2026”

In order to ensure the implementation of the “Mid-term/Long-term Human Resources Development Plan 2012-2026”, it shall be approved by MoHRD by the end of June 2015.

(2) Disclosure of information about DWST training program through website

Since international organizations working in the water supply development are interested in utilizing DWST training courses to build the capacities of beneficiaries targeted in their programs/projects, it is recommended for DWST to launch the website (and some communication tools) by the end of June 2015 to release the announcement of annual training course schedule with syllabus of each course. It is also essential for DWSU to assign the person in charge of the website management. For DWST, it is recommended to develop independent financial sources such as through promoting training courses for the private sector, universities, institutions and even for other directorates in MoWRE.

(3) Implementation of the Monitoring Plan (Water yards)

There is remaining a certain amount of activities for monitoring of water yards in Output 3. Those remaining activities need to be completed according to the “Sennar SWC Monitoring Plan – Water Supply Facility (Water Yard)” and “White Nile SWC Monitoring Plan – Water Supply Facility (Water Yard).”

(4) Final Seminar for sharing the Project Outputs

The Final Seminar shall be held to aim at sharing the Project Outputs among stakeholders including SWCs and international organizations by the end of the Project period. Main Project Outputs to be shared in the Seminar are the approved “Mid-term/Long-term Human Resources Development Plan 2012-2026,” the disclosure system of training program, and the monitoring system of water yards.

(5) Establishing the steering committee for Joint Seminar

For DWSU, DWST and SWCs, it will be beneficial to continue Joint Seminar regularly to promote human resources development at state level and scale up the water supply sector in Sudan. It is recommended to form the steering committee for the Joint Seminar. The steering committee is expected to coordinate among different SWCs and stakeholders in the water development sectors and to plan for seminar programs such as

introducing good practices (e.g. adopting databases for management in locality level in Gezira and Sennar states as mentioned in 3-6-3 (4)). It is beneficial for all participants to learn from good practices during the seminar.

### **6-1-2. Recommendations for the activities after the completion of the Project**

In order to secure the sustainability of the Project and fill the gap to achieve the overall goal, recommendations are made as follows.

#### **(1) Technical support to SWCs for strengthening of training management system**

It is expected for DWST and PSWCs to provide technical support for building training management system for other SWC training centers. It is also recommended for DWSU and DWST to create the lending system of tools and equipment for training courses in SWCs by mobilizing available tools and equipment among SWCs.

#### **(2) Reflecting the monitoring results to the strategic plan**

After completing monitoring activities, SWCs are expected to reflect monitoring results to the next WASH strategic plan 2017-2021<sup>42</sup>.

#### **(3) Introducing the monitoring system to other SWCs and other types of water facilities**

It is also recommended for PSWCs to expand monitoring activities to cover other water facilities besides water yards such as pipe network and water treatment plants, hand pumps etc. in order to improve O&M. Moreover, it is recommended to introduce this monitoring system to other states with cooperation with SWCs and stakeholders including international organizations.

#### **(4) Continuation of the technical cooperation with Morocco**

Training in Morocco as well as dispatch of Moroccan experts to Sudan were one of the most effective activities that widen the perspectives of Sudanese C/Ps. Thus, for DWSU and SWCs, it is recommended to continue the technical cooperation with the Moroccan authorities in order for Sudan to improve water supply sector with sound policy, regulations and strategy.

#### **(5) Establishment of the new Kilo Ten Training Center**

Likewise the recommendation at the time of mid-term review, it is expected for DWSU to solve the issues for the construction of the new Kilo Ten training center as soon as possible. Once the new training center is constructed, it is necessary to allocate additional human resources and strengthen the training implementation framework for scaling up and to be the model center in the East African region.

## **6-2. Lessons Learned**

As explained in 3-6-1, in order to increase ownership of the C/Ps for the Project, the following methods were proved for maximizing their effectiveness.

- Learning from experiences of Morocco in the water supply sector which have similarities with Sudan
- Award system for the best trainees and best training center to encourage C/Ps for further improvement of their organizations associated with increasing their sense of ownership
- Joint seminar hosted in various states for sharing information and experiences among SWCs and other stakeholders in water supply development

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<sup>42</sup> According to UNICEF Sudan, progress of WASH strategic plan 2011-2015 will be assessed at every state by DWSU with technical support by UNICEF in 2015. The results of the assessment will be reflected to design of the next WASH strategic plan 2016-2021 (Source: UNICEF Sudan. 20150309).

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## ANNEX 1: PDM (Version 5.0)

Project title: Project for Human Resources Development for Water Supply Phase 2

Duration : November, 2011～September, 2015

Implementation Agency : DWSU

Target area : 18 States in Sudan\*

Target groups : DWSU, DWST, SWCs

Narrative Summary	Objectively Verifiable Indicators	Means of Verifications	Important Assumptions
< Overall Goal > Water supply system is properly managed in Sudan.	SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities.		1. Sudan's policies for human resources development for water supply does not change drastically. 2. Trainings are implemented continuously in SWCs.
< Project Purpose > Human resources in water supply sector are properly trained in Sudan.	1. The number of trainees that are trained in Sudan exceeds 2000. 2. The number of annually maintained water yards** is increased to more than 20 in each PSWC.	1. DWST, PSWC, SWCs training implementation report 2. PSWC training implementation report	1. PSWC's staff who completed training courses do not leave SWC. 2. There are no climate changes or disasters that affect the operations water facilities. 3. Necessary budget, personnel, equipment, etc. are provided in SWC at the appropriate timing.
< OUTPUTS > 1. Training courses are implemented by DWST based on its midterm/long-term human resources development plan.	1. Mid-term/long-term human resources development plan is completed by March 2013. 2. Percentage of contributions from training coordinator on the planning and implementation of training courses increases by 100%. 3. Training courses at DWST are implemented more than 20 times annually.	1. Mid-term/long-term human resources development plan 2. DWST training coordinator questionnaire Japanese expert questionnaire 3. DWST training implementation report	1. Necessary budget, personnel, equipment, etc. are provided in a timely and appropriately.
2. Training course implementation structures in PSWCs are developed by PSWCs in collaboration with DWST.	1. Percentage of contributions from training coordinators on the planning and implementation of training courses is increased by 80% in the PSWCs 2. Training courses are implemented according to the SWC training implementation plan.	1. PSWC training coordinator questionnaire Japanese expert questionnaire 2. PSWC training implementation report	
3. Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&M of water supply system of PSWCs.	1. Monitoring manual is completed by March 2015. 2. Monitoring activities are implemented according to schedule.	1. Monitoring manual*** 2. Monitoring report	
4. Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST.	1. Human resources development manual is completed by March 2015. 2. Joint Seminar to share and disseminate the outputs of PSWCs are implemented 6 times.	1. Human Resources Development Manual 2. Joint Seminar report	
< ACTIVITIES > 1-1. DWST elaborates draft plan for mid-term/long-term human resource development. 1-2. DWST prioritizes actual needs for the training courses. 1-3. DWST elaborates its training implementation plan based on the draft plan for midterm/long term human resource development.		< INPUTS > 1. Japanese side (1)Experts ①Team leader/training course management/water supply plan	1. Budget of DWSU, DWST, and SWCs does not drastically decrease. 2. Organizational restructuring does not occur for counterparts.

<p>1-4. DWST implements training courses based on the training course implementation plan.  1-5. DWST evaluates the training courses.  1-6. DWST revises training course contents, textbooks and manuals based on the evaluation results of the training courses.  1-7. DWST improves its capacity responding to the expansion of training center.  1-8. DWST finalizes the mid-term/long-term human resources development plan, which is to be authorized by the government of Sudan.</p> <p>2-1. DWST strengthens its leadership through the support of below activities of SWC.  2-2. PSWCs establish training units within the organization.  2-3. PSWCs develop the draft SWC activities plan.  2-4. PSWCs prioritize actual needs for the training courses.  2-5. PSWCs develop training course implementation plan based on the priority.  2-6. PSWCs' training units develop training course curriculum (including OJT in Localities) and textbooks.  2-7. PSWCs' training units implement training courses.  2-8. PSWCs' training unit evaluate the training courses.  2-9. PSWCs' training units revise training course curriculum and textbooks based on the evaluation results of the training courses.  2-10. PSWCs reflect the monitoring result of draft SWC activities plan to training course implementation plan.</p> <p>3-1. DWSU and PSWCa establish monitoring units within the organization.  3-2. DWSU develops the draft version of monitoring manual to be used by PSWCs.  3-3. PSWCs implement baseline survey on the O&amp;M status of current water supply system.  3-4. PSWCs regularly monitor the current situation of training implementation, examples identified in the State, and O&amp;M of water supply system based on the draft of monitoring manual.  3-5. DWSU and DWST analyze and evaluate the monitoring result and give feedbacks such as lessons learned and good practices etc. to SWC monitoring unit.  3-6. DWSU maintains and manages monitoring data at information center.  3-7. DWSU finalizes monitoring manual based on the evaluation of monitoring of training courses and O&amp;M of water supply system.</p> <p>4-1. Each SWC (excluding PSWCs) establishes training unit within the organization.  4-2. DWST develops Human Resources Development Manual to each SWC based on the outputs of 1, 2 and 3.  4-3. DWST implements Joint Seminar(s) to share and disseminate the outputs of PSWCs' activities, and distribute Human Resource Development Manual to each SWC.  4-4. Each SWC (excluding PSWCs) develops training course implementation plan.</p>	<p>②Organizational management/Water tariff management  ③Water supply facilities management (Water treatment plant/Pipe network management)  ④Machinery and electric equipment/Equipment management  ⑤Well management  ⑥Data management/Monitoring  ⑦Water quality control and management  ⑧Community development  ⑨Sanitation management  (2)Equipment  ①Necessary equipment for DWST new training courses  ②Necessary equipment for PSWCs training courses  ③Necessary equipment for other SWCs (excluding Darfur 5 States, South Kordofan, West Kordofan, Blue Nile, Kassala and Khartoum States)  (3)Project activities fee  (4)Training in Morocco  (5)Acceptance Trainee from Morocco</p> <p>2. Sudanese side  (1)Allocation of counterparts and administrative personnel  1) Project Director  2) Project Manager  3) Counterparts  (2)Allocation of land, buildings and facilities  1) Office space for Japanese experts in the building of DWSU  2) Office space for JICA experts in the building of PSWCs  3) Training space in DWST and PSWCs  4) Other necessary facilities, equipment and materials for the administration of the Project  (3)Project activities fee  (4)Construction of kilo ten training center  (5)Procurement of office equipment and furniture for the training center</p>	<p>3. The number of trained SWC staff leaving the organization is not significant.  4. Budget, human resources, and necessary equipment for project implementation are properly provided.</p> <p>&lt; Pre-Condition &gt;  1. The economic situation does not worsen than that of initiation period of project implementation.  2. Political conflicts do not occur  3. Organization (personnel) and budget at DWSU, DWST and SWC does not change drastically.</p>
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## &lt; Remarks &gt;

DWSU: Drinking Water and Sanitation Unit, DWST: Drinking Water and Sanitation Training Center, PSWC: Pilot State Water Corporation, SWC: State Water Corporation, O&M: Operation and Maintenance

\* Project activities are conducted indirectly in areas that are inaccessible for Japanese side.

\*\*Water yard is consisting of borehole, elevator tank, generator house and public fountains.

\*\*\*Monitoring manual includes the guideline of monitoring activities, the mandate of monitoring unit, the monitoring activity schedule and the reporting schedule from SWC and DWSU.

This manual is used for the monitoring of SWC training course implementation, good practices and lessons learnt which are shared with other SWCs, and maintenance of water supply facilities in SWC.

## ANNEX 2: Inputs to the Project

### 2-1 Placement Records of Japanese Experts

Name	Fields of expertise	Period dispatched to Sudan	M/M
Mr. Mitsuro Uemura	Leader/Training Plan Water Supply Plan 1	2011.11.12 – 2012.07.11	8.10 (Year 1)
		2012.10.06 – 2013.05.05	7.07 (Year 2)
		2013.10.07 – 2014.05.31	7.90 (Year 3)
Mr. Jun Onodera	Deputy Project Leader Organizational Management Water Tariff Management	2012.04.01 – 2012.06.20	2.70 (Year 1)
		2012.10.17 – 2012.12.16	2.03 (Year 2)
		2013.10.25 – 2013.12.23	2.00 (Year 3)
		2014.10.10 – 2014.12.26	2.60 (Year 4)
		2015.01.25 – 2015.04.15*	1.17+1.53(Year 4)*
		2015.08.06 – 2015.09.10*	1.20 (Year 4)*
Mr. Hiroyoshi Yamada	Training Facility Management Water Supply Plan 2	2014.12.20 – 2015.01.20	1.40 (Year 4)
		2015.08.12 – 2015.09.10*	0.67 (Year 4)*
Mr. Yusuke Oshika	Well Management	2012.03.12 – 2012.07.11	4.07 (Year 1)
		2013.01.04 – 2013.04.05	3.07 (Year 2)
		2013.11.21 – 2014.02.18	3.00 (Year 3)
		2015.01.08 – 2015.03.09*	1.73+0.30 (Year 4)*
Mr. Makoto Yamamoto	Water Supply Facility (Treatment Plant/Pipe Network)	2012.05.23 – 2012.07.11	1.67 (Year 1)
		2013.02.18 – 2013.05.03	2.50 (Year 2)
		2013.10.07 – 2012.11.20	
		2014.02.01 – 2014.03.17	3.00 (Year 3)
		2014.11.29 – 2015.01.18	1.70 (Year 4)
Mr. Ryoichi Kimura	Electricity/Mechanics/Equipment Management	2011.11.12 – 2012.05.11	6.07 (Year 1)
		2012.10.06 – 2013.02.02	4.00 (Year 2)
		2013.11.21 – 2014.03.10	3.67 (Year 3)
		2014.10.10 – 2014.12.06	1.93 (Year 4)
		2015.02.23 – 2015.03.31*	0.20+1.04 (Year 4)*
Mr. Tadashi Sato	Data Management/Monitoring	2011.11.12 – 2012.01.11	6.07 (Year 1)
		2012.03.12 – 2012.07.10	2.03 (Year 2)
		2012.10.17 – 2012.12.16	
		2013.10.07 – 2013.11.20	2.63 (Year 3)
		2014.01.05 – 2015.02.07	
		2014.10.10 – 2014.11.16 2015.01.12 – 2015.02.18	2.53 (Year 4)
Mr. Shunsaku Matsuo	Management of Water Quality	2011.11.12 – 2012.03.11	4.03 (Year 1)
		2012.10.06 – 2012.12.05	2.03 (Year 2)
		2014.03.20 – 2014.05.01	1.43 (Year 3)
		2014.12.03 – 2015.01.12	1.37 (Year 4)
Mr. Arata Sasaki	Community Development	2012.04.01 – 2012.05.31	2.03 (Year 1)
		2013.03.22 – 2013.05.05	1.50 (Year 2)
		2014.04.11 – 2014.05.31	1.70 (Year 3)
		2015.01.12 – 2015.02.10	1.00 (Year 4)
Ms. Aya Kadokami	Sanitation Management	2013.11.15 – 2014.02.04	2.73 (Year 3)
		2014.10.20 – 2014.11.18	1.00 (Year 4)
		2015.08.01 – 2015.09.10*	1.37 (Year 4)*
<b>Planned M/M (Total)</b> : Year 1 (34.73M/M) + Year 2 (24.33M/M) + Year 3 (28.17M/M) + Year 4 (21.61M/M)			108.74
<b>Actual M/M (Total) as of the end of February 2015</b> : Year 1 (34.73M/M) + Year 2 (24.33M/M) + Year 3 (28.17M/M) + Year 4 (15.50M/M: excluding 1.13M/M covered by Earth System Science Co., Ltd.)			102.63
<b>*M/M left as of 28 February 2015</b>			6.11



## ANNEX 2: Inputs to the Project

### 2-2. List of Moroccan Experts

Name	Organization	Position	Fields of expertise
<b>The 1<sup>st</sup> Mission (2012.12.08-2012.12.17)</b>			
Mr. Outair Abdelouahed	National Water Corporation (ONEP)	Head of water treatment division	Monitoring the quality of raw and treated water (Production and distribution)/ Training at the ONEP training center/ Technical assistance in quality control, plants performance diagnosis and training/ Writing manual and procedures of water treatment plant monitoring
Mr. Abderrafii Mardi		Director of training department	Training need assessment/ Training planning/ Training programs implementation/ Consultation of capacity building programs for the benefit of ONEE, and other institutions in morocco or abroad
Mr. Mohamed Laaouan		Head of pedagogical development	Water treatment/ Water quality/ Water sanitation/ Training/ Trainer
Dr. Mustapha Mahi		Responsible in R&D development	Sanitation & environment
Mr. Hilali Jawad	National Drinking Water and Electricity Corporation in Morocco (ONEE)	Head of cooperation division	Cooperation management and planning/ Capacity building programs/ Financial management/ HR
<b>The 2<sup>nd</sup> Mission (2013.12.13-2013.12.21)</b>			
Mr. Nrhira Abdessadek	The Hydraulic Agency of South Massa-Basin in Morocco (ABHSMD)	Director of water resource development	Water resources development/ Water resources management
Mr. Driss Ben Abdellah	ONEE	Director of water supply facility	Drinking water supply/ Utilization of water
Mr. Ahamed Garbaoui		Director of urban water supply	Urban water supply
Dr. Mahmoud Fafsi		Director of technical development	Desalinization of sea water
<b>The 3<sup>rd</sup> Mission (2014.12.13-2014.12.18)</b>			
Mr. Samir Bensaid	International Institute of Water and Sanitation affiliated to ONEE, the National Company for Electricity and Potable Water in Morocco	Director General	Policy making/ Strategic management/ Water law
Mr. Zerouali Abdelaziz	Hydrolic Basin Agency of Bouregreg and Chaouia (ABHBC), Ministry of Water, Mining, Energy and Environment	Director General of River Basin of Bouregreg	Policy making/ Strategic management/ Water law

## ANNEX 2: Inputs to the Project

### 2-3 List of participants of counterpart training in Morocco

	Name	Position at the time of the training	Period	Theme	Training institutions
1	Mr. Ibrahim E.M.Bashari	PWC	2012.03.18 – 2012.03.29	The target persons of this Study Tour were the staff of each SWC, who had never been to the foreign countries and were satisfied with the current situation of Sudan. Through this Study Tour, they were expected to consider their own problems from the foreign perspective and to promote their self-efforts.	1. National Drinking Water and Electricity Supply Corporation (ONEE) 2. Ministry of Water 3. Hydraulic Basin Office of Tenshif (ABHT) 4. Quarzazate prefecture 5. Tata prefecture 6. Hydraulic Basin Office of Sus Massa Darra (ABHSMD) 7. RADEEMA 8. RAMSA 9. ONEP, Agadir
2	Mr. Nassir Mukhtar Ali	Sennar SWC			
3	Mr. Abdalla Abbas Hamid	Sennar SWC			
4	Mr. Elabaid Musa Ajeep	White Nile SWC			
5	Mr. Adam M.Bushra	White Nile SWC			
6	Mr. Mohammed M.Yagoub	North Darfur SWC			
7	Mr. Alfaki M. Hassan M.	West Darfur SWC			
8	Mr. Mohammed H. Adam	South Darfur SWC			
9	Mr. Eltaief Abass M.A.M	Blue Nile SWC			
10	Mr. Hamid A. Ibrahim M.	South Kordofan SWC			
11	Mr. Hussein S.Ahmed	Kassala SWC			
12	Mr. Ahmed A. Elamin	Kassala SWC			
13	Mr. M.Abdallah Ahamed	Kassala SWC			
14	Mr. Egbal B.Alamir	DWST			
15	Mr. Ahmed Eltayeb	White Nile SWC			
16	Mr. Jalal Boshcer	Sennar SWC			
17	Ms. Batoul Saad A.Faggad	El Gezira SWC			
18	Mr. Sabir Abd Ellatif M.	Northern SWC			
19	Mr. Waleed Mahgoub	River Nile SWC			
20	Ms. Atega Eshag Rahimt Alla	Khartoum SWC			
21	Mr. Mawui Adam	North Kordofan SWC			
22	Mr. Sulaiman Hassan	North Darfur SWC			
23	Mr. A. Adam Deffaalla	West Darfur SWC			
24	Mr. Aldoma Adam Osman	South Darfur SWC			
25	Mr. Mr.El Y.Abdelmumen	South Kordofan SWC			
26	Mr. Ehab Yousif Mekki	Blue Nile SWC	2014.04.05 – 2014.04.13	Trainees were expected to understand the contents of IWRM (Integrated Water Resources Management), drip irrigation, wastewater recycling and the water supply situation in the Agadir area in southern Morocco. It was expected for them to transfer the above knowhow to the Sudan side.	1. ONEE 2. Ministry of Water 3. ABHSMD 4. ONEE, Agadir
27	Ms. Tawasul Mohammed Ali BABEKER	DWST			
28	Mr. Alwaleed Fathi Obaid SALIM	Northern SWC			
29	Mr. Khalid Abdallah Saeed FADLALLAH	River Nile SWC			
30	Mr. Osman Hamid Osman HAMID	Red Sea SWC			
31	Mr. Sami Omer Elamin MOHAMED	El Gezira SWC			
32	Mr. Dafaalla Eltayeb Mohamed MASOUD	Hawata Water Corporation			
33	Mr. Ammar Hassan Rahamtalla MOHAMMED	Sennar SWC			
34	Mr. El Tayeb Kabashi Abdallah IBRAHIM	White Nile SWC			
35	Mr. Muataz Hassab Elrasoul Abdalla MOHAMMED	Kassala SWC			
36	Mr. Abdalhedmed Hamed Mohammed Hassan AHMED	Kassala SWC	2015.03-04 (Plan)	Management of filtration facilities and equipment	ONEE
-	To be decided	DWST and SWCs			

## ANNEX 2: Inputs to the Project

### 2-4 Local costs from Japanese side

#### (1) Local operational costs

In Sudanese Pound

Item	Year 1 (2011.11 -2012.8)	Year 2 (2012.10 -2013.6)	Year 3 (2013.9 - 2014.7)	Year 4 (2014.9 - 2015.10)	Total
Local Activity Cost	228,177	855,935	889,768	1,144,586	3,118,466

(Unit: SDG)

In Japanese Yen

Item	Year 1 (2011.11 -2012.8)	Year 2 (2012.10 -2013.6)	Year 3 (2013.9 - 2014.7)	Year 4 (2014.9 - 2015.10)	Total
Local Activity Cost	6,514,000	15,186,000	19,913,000	20,994,000	62,607,000

(Unit: JPY)

Note:

- Figure for the Year 1, 2 & 3 are disbursement amount. Year4 is the budget plan by the end of the Project
- JPY amounts are converted to SDG amounts using following exchange rates:  
JPY28.548/SDG (official exchange rate in November 2011) for Year 1,  
JPY17.742/SDG (official exchange rate in October 2012) for Year 2,  
JPY22.380/SDG (official exchange rate in September 2013) for Year 3,  
JPY18.342/SDG (official exchange rate in September 2014) for Year 4.

#### (2) Equipment costs provided for the Project

In Sudanese Pound:

Item	Year 1 (2011.11 -2012.8)	Year 2 (2012.10 -2013.6)	Year 3 (2013.9 - 2014.7)	Year 4 (2014.9 - 2015.10)	Total
Equipment provided	7,884,448	424,304	533,110	38,436	8,880,298

(Unit: SDG)

In Japanese Yen:

Item	Year 1 (2011.11 -2012.8)	Year 2 (2012.10 -2013.6)	Year 3 (2013.9 - 2014.7)	Year 4 (2014.9 - 2015.10)	Total
Equipment provided	225,085,213	7,528,000	11,931,000	705,000	245,249,213

(Unit: JPY)

Note:

- Figure for the Year 1, 2 & 3 are disbursement amount. Year 4 is the budget plan by the end of the Project.
- JPY amount is converted to SDG amount using following exchange rates: JPY28.548/SDG (official exchange rate in November 2011) for Year 1, JPY17.742/SDG (official exchange rate in October 2012) for Year 2, JPY22.380/SDG (official exchange rate in September 2013) for Year 3, and JPY18.342/SDG (official exchange rate in September 2014) for Year 4.
- There is a difference between the figures for the cost of equipment mentioned here (8,880,298 SDG, 245,249,213 JPY) and those shown in ANNEX 2-5 (8,455,461 SDG), which is caused by differences in exchange rates used for calculation. The former are calculated with JICA's official monthly exchange rates of the beginning of each Project Year. In Annex-2-5, the following exchange rates are used for items purchased in USD & JPY to calculate SDG equivalent amounts (USD2.88/SDG, JPY28.64/SDG in 2012).

## 2-5 List of equipment procured under the Project

Note:

- Condition/Usage = C, Good = O, Some challenges = Δ (according to the reporting by each organization)
- Year/Month of Procurement months: 2012 June (No. 1-14, 16-39, 41-72, 76-78), 2013 December (No. 15), 2013 October (No. 40, 80-83), 2013 March (No. 73-74), 2014 April (No. 75)
- Following exchange rates are used for items purchased in USD & JPY to calculate SDG equivalent amounts (@USD2.88/SDG, JPY28.64/SDG in 2012).

1. Equipment for maintenance training		SDG		DWST		Sennar		White Nile		Northern		Nile		El Gezira		Gedaref		Red sea		North Kordofan									
1-1. Water well management		Unit Price	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C						
	1) Truck with 3t crane	316,800	1	316,800	Δ	1	316,800	O	1	316,800	O	0	0	0	0	0	0	0	0	0	0	0	0	0					
	2) Pickup car (double cabin)	76,896	1	76,896	O	2	153,792	O	2	153,792	O	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3) Submersible Pump Unit (9.2kw)	35,355	0	0		1	35,355	O	11	388,904	O	1	35,355	O	0	0	0	1	35,355	O	0	0	0	1	35,355	O			
	4) Submersible Pump Unit (5.5kw)	34,318	0	0		10	343,181	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	5) Diesel Generator (17KVA)	26,676	0	0		10	266,760	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	6) Diesel Generator (30KVA)	35,050	0	0		1	35,050	O	11	385,546	O	1	35,050	O	0	0	0	1	35,050	O	0	0	0	0	1	35,050	O		
	7) Pumping Test Unit (100m)	12,110	0	0		1	12,110	O	1	12,110	O	1	12,110	O	0	0	0	1	12,110	O	0	0	0	0	1	12,110	O		
	8) Air Lifting Tools (150m)	24,726	0	0		0	0		1	24,726	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	9) Air Lifting Tools (100m)	19,533	0	0		1	19,533	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	10) Air compressor (12bar, 10m3)	165,600	0	0		1	165,600	O	1	165,600	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	11) Borehole camera	226,955	0	0		1	226,955	O	1	226,955	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	12) Water level indicator	2,183	0	0		2	4,366	Δ	2	4,366	O	1	2,183	O	1	2,183	O	3	6,549	O	1	2,183	O	1	2,183	O	1	2,183	Δ
	13) PH/EC meter (Portable type)	9,976	0	0		1	9,976	O	1	9,976	O	1	9,976	O	0	0	0	1	9,976	O	0	0	0	0	1	9,976	O		
	14) Steel pipe (with socket)	490	0	0		50	24,480	O	50	24,480	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
<b>1-2. Water yard maintenance</b>																													
	15) Diesel Generator (12.5KVA)	24,718	0	0		1	24,718	O	1	24,718	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	16) Mechanical tool set A	16,396	0	0		2	32,792	O	2	32,792	O	1	16,396	O	1	16,396	O	2	32,792	O	1	16,396	O	2	32,792	O	1	16,396	O
	17) Mechanical tool set B	7,910	0	0		2	15,820	O	2	15,820	O	1	7,910	O	1	7,910	O	2	15,820	O	1	7,910	O	2	15,820	O	1	7,910	O
	18) Electrical tool set A	8,076	0	0		2	16,151	O	2	16,151	O	1	8,076	O	1	8,076	O	1	8,076	O	1	8,076	O	2	16,151	O	1	8,076	O
	19) Electrical tool set B	1,415	0	0		2	2,830	O	2	2,830	O	1	1,415	O	1	1,415	O	1	1,415	O	1	1,415	O	2	2,830	O	1	1,415	O
	20) Bench vice 6"	1,200	0	0		2	2,400	O	2	2,400	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	21) Pipe vice	2,780	0	0		2	5,560	O	2	5,560	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	22) Pipe threading machine	27,500	0	0		1	27,500	O	1	27,500	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	23) Welding machine	13,500	0	0		5	67,500	O	5	67,500	O	1	13,500	O	1	13,500	O	2	27,000	O	1	13,500	O	1	13,500	O	1	13,500	O
	24) Diesel power welder	22,500	0	0		2	45,000	O	2	45,000	O	0	0	0	0	0	0	1	22,500	O	0	0	0	0	1	22,500	Δ		
	25) Torque wrench	2,000	0	0		1	2,000	O	1	2,000	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	26) Electrical drill set	1,750	0	0		1	1,750	O	1	1,750	O	0	0	0	0	0	0	1	1,750	O	0	0	0	0	1	1,750	O		
	27) Multi meter (Clamp meter)	900	0	0		2	1,800	O	2	1,800	O	1	900	O	1	900	O	1	900	O	1	900	O	1	900	O	1	900	O
	28) Equipment setting tools	8,425	0	0		2	16,850	O	2	16,850	O	1	8,425	O	0	0	0	1	8,425	O	0	0	0	0	1	8,425	O		
	29) Electric disc sander	1,250	0	0		5	6,250	O	5	6,250	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	30) Electrical cutting machine for Iron	2,500	0	0		5	12,500	O	5	12,500	O	1	2,500	O	0	0	0	1	2,500	O	0	0	0	0	1	2,500	O		
	31) Electric impact wrench	900	0	0		2	1,800	O	2	1,800	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	32) Electrical Cable set	185	0	0		5	925	O	5	925	Δ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	33) Three jaw puller	900	0	0		5	4,500	O	5	4,500	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	34) Two jaw puller	850	0	0		5	4,250	O	5	4,250	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	35) Gear and bearing puller	750	0	0		5	3,750	O	5	3,750	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	36) Battery chargers	950	0	0		5	4,750	O	5	4,750	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	37) Tap and Dies set	1,500	0	0		5	7,500	O	5	7,500	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	38) Gas welding tool	2,300	0	0		1	2,300	O	1	2,300	O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	39) Electric Motor	450	1	450	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0		
	40) Clamp meter	615	0	0		1	615	O	1	615	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0		
<b>1-3. Pipe network</b>																													
	41) HDPE welding Machine	56,290	0	0		1	56,290	O	1	56,290	O	1	56,290	O	0	0	0	1	56,290	O	0	0	0	0	0	1	56,290	Δ	

2. Equipment for survey and analysis trainin		SDG			DWST			Sennar			White Nile			Northern			Nile			El Gezira			Gedaref			Red sea			North Kordofan		
2-1. Water quality management		Unit Price	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C	Qty	Price	C		
	42) Bromate measurement system	418,406	1	418,406	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	43) Digital bullet	3,732	0	0		3	11,197	O	3	11,197	O	1	3,732	O	1	3,732	O	5	18,662	O	1	3,732	O	1	3,732	O	1	3,732	O		
	44) PH/EC meter (Bench type)	12,586	0	0		1	12,586	O	1	12,586	O	1	12,586	Δ	1	12,586	Δ	2	25,171	O	1	12,586	O	1	12,586	O	1	12,586	O		
	45) Turbidity meter	16,756	0	0		1	16,756	O	1	16,756	O	1	16,756	Δ	1	16,756	Δ	1	16,756	O	1	16,756	O	0	0	O	1	16,756	O		
	46) Spectrophotometer DR5000	52,272	0	0		0	0	O	0	0	O	1	52,272	O	1	52,272	O	1	52,272	O	1	52,272	O	1	52,272	O	1	52,272	O		
	47) Reagent for HACH Spectrophotometer	2,497	0	0		2	4,994	O	2	4,994	O	1	2,497	O	1	2,497	O	1	2,497	O	1	2,497	O	1	2,497	O	1	2,497	O		
	48) Media of Bactecology analysis	1,559	0	0		1	1,559	O	1	1,559	O	1	1,559	O	1	1,559	O	1	1,559	O	1	1,559	O	1	1,559	O	1	1,559	O		
	49) Sterilized membrane filter	644	0	0		1	644	O	1	644	O	0	0	O	0	0	O	1	644	O	1	644	O	1	644	O	1	644	O		
	50) Sterilized pad thickness	741	0	0		1	741	O	1	741	O	1	741	O	1	741	O	1	741	O	1	741	O	1	741	O	1	741	O		
	51) Residual chlorine tester	4,821	0	0		1	4,821	O	1	4,821	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	52) Dissolve oxygen tester	11,730	0	0		1	11,730	O	1	11,730	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	53) Glass ware unit	8,317	0	0		1	8,317	O	1	8,317	O	1	8,317	O	1	8,317	O	1	8,317	O	1	8,317	O	1	8,317	O	1	8,317	O		
	54) Distillater	6,503	0	0		0	0	O	0	0	O	1	6,503	O	1	6,503	O	1	6,503	O	1	6,503	O	1	6,503	O	1	6,503	O		
	55) Filter paper	176	0	0		10	1,755	O	10	1,755	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	56) Chemical Reagents	1,553	0	0		1	1,553	O	1	1,553	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
<b>2-2. Survey and design</b>																															
	57) Geophysical Survey Equipment	257,364	1	257,364	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	58) Auto level with tripod & staff	3,325	0	0		3	9,975	O	3	9,975	O	0	0	O	0	0	O	2	6,650	O	0	0	O	0	0	O	0	0	O		
<b>3. Office equipment</b>																															
<b>3-1. Data management training</b>																															
	59) Computer (Lap Top)+AntiV+office	4,450	5	22,250	O	15	66,750	O	15	66,750	Δ	3	13,350	O	3	13,350	O	10	44,500	Δ	3	13,350	O	3	13,350	O	3	13,350	O		
	60) Computer (Desk Top)+AntiV+office	4,650	5	23,250	O	21	97,650	Δ	21	97,650	O	3	13,950	Δ	3	13,950	O	22	102,300	Δ	3	13,950	O	3	13,950	O	3	13,950	O		
	61) Computer server	8,900	2	17,800	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	62) Anti Virus Software (for 3 computer)	300	17	5,100	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	63) Projector (Portable type)	3,300	2	6,600	O	3	9,900	O	3	9,900	O	1	3,300	O	1	3,300	O	1	3,300	O	1	3,300	O	1	3,300	O	1	3,300	O		
	64) Photocopy machine Color	19,960	1	19,960	O	2	39,920	O	2	39,920	O	1	19,960	O	1	19,960	O	1	19,960	O	1	19,960	O	1	19,960	O	1	19,960	O		
	65) Photocopy machine Black & White	11,730	0	0		2	23,460	O	2	23,460	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	66) Plotter A1	12,000	0	0		0	0	O	0	0	O	0	0	O	0	0	O	1	12,000	Δ	0	0	O	0	0	O	0	0	O		
	67) Digital Video Camera	1,450	0	0		1	1,450	O	1	1,450	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	68) Digital Camera	1,000	0	0		3	3,000	O	3	3,000	O	1	1,000	O	1	1,000	O	3	3,000	O	1	1,000	O	1	1,000	O	1	1,000	O		
	69) Microphone(1) + Speaker(1)	700	0	0		3	2,100	Δ	3	2,100	Δ	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	70) Stabilizer	350	0	0		5	1,750	O	5	1,750	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	71) UPS 650VA	425	5	2,125	O	10	4,250	Δ	10	4,250	Δ	1	425	Δ	1	425	O	5	2,125	O	1	425	O	1	425	O	1	425	O		
	72) Projector (Fix type)	3,300	3	9,900	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	73) Computer (Desk Top)+AntiV+office	3,454	0	0		0	0	O	0	0	O	18	62,169	O	11	37,992	O	0	0	O	0	0	O	10	34,538	O	15	51,808	O		
	74) Projector (Portable type)	2,199	0	0		0	0	O	0	0	O	1	2,199	O	0	0	O	0	0	O	0	0	O	1	2,199	O	1	2,199	O		
	75) Photocopy machine Color	13,968	0	0		0	0	O	0	0	O	1	13,968	O	0	0	O	0	0	O	0	0	O	1	13,968	O	1	13,968	O		
<b>3-2. DWST training management</b>																															
	76) Video camera	1,656	1	1,656	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	77) Video recording device with monitor	1,989	1	1,989	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	78) Leaser pointer	321	3	964	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	79) Micro bus	151,200	1	151,200	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	80) Mike and Speaker	691	2	1,382	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	81) Air conditioner	2,822	50	141,120	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	82) TV conference sound device	1,438	1	1,438	O	1	1,438	O	1	1,438	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
	83) TV conference video camera	357	1	357	O	1	357	O	1	357	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O	0	0	O		
<b>Total</b>				1,477,007			2,320,710			2,420,007			445,368			245,319			603,463			207,970			275,716			459,900			

**ANNEX 2: Inputs to the Project**  
**2-6 Placement records of Sudanese counterparts**  
**1) DWSU & DWST**

Name & Position of C/Ps		Field of expertise	Participated training	Period assigned as C/P per position
<b>Drinking Water and Sanitation Unit (DWSU)</b>				
<b>1</b>	<b>Director General, DWSU / Project Director</b>			
	Mr. Mohamed H. M. Ammar			2011.11- Present
<b>Drinking Water and Sanitation Unit Training Center (DWST)</b>				
<b>2</b>	<b>Director, DWST / Project Manager</b>			
	Mm. Eatidal El Rayah Malik	- Training course management - Water supply plan		2011.11- Present
<b>3</b>	<b>Department of Training Management</b>			
	Mr. Kamal Hassan Ahmed	- Training course management - Project budget	-	2011.11- Present
<b>4</b>	<b>Department of Training Management</b>			
	Ms. Hanan M. Mahmoud	- Training course management - Water supply plan		2011.11- Present
<b>5</b>	<b>Department of Training Management</b>			
	Mr. Safe Aldowla Ali	- Training course management - Water supply plan		2011.11- Present
<b>6</b>	<b>Training Course Coordinator, Department of Training Management</b>			
	Mr. Egbal B. Alamir	- Well management - Sanitation Management	The 2 <sup>nd</sup> Training in Morocco (2013.04.06 – 04.14)	2011.11- Present
<b>7</b>	<b>Assistant Training Coordinator, Department of Training Management</b>			
	Mr. Muataz Hassan. A	- Well management - Pipe network management - Water treatment plant - Electric and Mechanic Management - Equipment management - Community development		2011.11- Present
<b>8</b>	<b>Assistant Training Coordinator, Department of Training Management</b>			
	Mr. Sharaf Aldeen Mahmoud	- Well management - Pipe network management - Water treatment plant - Organizational management - Water tariff management		2011.11- Present
<b>9</b>	<b>Training Course Coordinator, Department of Training Management</b>			
	Mr. Bashary Ibrahim	- Pipe network management - Water treatment plant - Electric and Mechanic Management - Equipment management		2011.11- Present
<b>10</b>	<b>Training Course Coordinator, Department of Training Management/Monitoring &amp; Evaluation Department/ Information Center, DWSU</b>			
	Mr. Omer Elsunni	- Data management - Monitoring		2011.11- Present
<b>11</b>	<b>Assistant Training Coordinator, Department of Training Management/Monitoring &amp; Evaluation Department/ Information Center, DWSU</b>			
	Mr. Mohamed Yahia	- Data management - Monitoring		2011.11- Present
<b>12</b>	<b>Training Course Coordinator, Department of Training Management</b>			
	Mr. Abdela Majed	- Water quality analysis management		2011.11- Present
<b>13</b>	<b>Assistant coordinator, Department of Training Management</b>			
	Ms. Safia Ali Babiker	- Water quality analysis management		2011.11- Present
<b>14</b>	<b>Assistant Training Coordinator, Department of Training Management</b>			
	Ms. Tawasul Mohamedd Ali	- Water quality analysis management	The 3 <sup>rd</sup> Training in Morocco (2014.04.05 – 04.13)	2011.11- Present
<b>15</b>	<b>Department of Training Management</b>			
	Ms. Wafa Muzzammil	- Sanitation management		2011.11- Present
<b>16</b>	<b>Sanitation coordinator, Department of Training Management</b>			
	Mr. Motwkel Mahmoud	- Sanitation management		2014.06 - Present

## 2) Pilot State Water Corporations

Name & Position of C/Ps		Field of expertise	Participated training	Period assigned as C/P (2011.11-)
<b>White Nile SWC</b>				
<b>1.</b>	<b>Director General, White Nile SWC</b>			
	Mr. Alsadig.M.Tahameed	-		2011.11 - Present
<b>2</b>	<b>Acting Director of White Nile SWC</b>			
	Mr. Rahama Elemam Hammad			2011.11- Present
<b>3</b>	<b>Director, Training Center</b>			
	Mr.Ahmed Eltayeb	Data Management & Monitoring Sanitation Management	The 2 <sup>nd</sup> Training in Morocco (2013.04.06 – 04.14)	2011.11 – Present
<b>4</b>	<b>Supervisor of Training Course Management</b>			
	Mr.Mohammed Alsadig	- Electric Management - Mechanic Management		2011.11- Present
<b>5</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Ms. Elresala Mohammed	- Well Management		2011.11- Present
<b>6</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Ali Abdallah	- Well Management		2011.11- Present
<b>7</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. El Tayeb Kabashi Abdallah Ibrahim	- Pipe Network Management	The 3 <sup>rd</sup> Training in Morocco (2014.04.05 – 04.13)	2011.11- Present
<b>8</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. El Smani Elfadel	- Pipe Network Management		2011.11- Present
<b>9</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Ahmed Suliman	- Management of Water Treatment Plant		2011.11- Present
<b>10</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Adil Eisa Musa	- Management of Water Treatment Plant		2011.11- Present
<b>11</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Mohammed Yahia M.	- Organization Management		2011.11- Present
<b>12</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Idrees M. idrees.	- Organization Management		2011.11- Present
<b>13</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Abdelwahab Abu Sin	- Water Tariff Management		2011.11 - Present
<b>14</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Ms. Intesar .M.Zain	- Water Tariff Management		2011.11 - Present
<b>15</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Faisad M. Aboushoal	- Electric Management		2011.11 - Present
<b>16</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. El Tayebe Ahmed Adam	- Mechanic Management		- Present
<b>17</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Altijany	- Mechanic Management		- Present
<b>18</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Shamseldeen S.M	- Equipment Management		2011.11 - Present
<b>19</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Mohammed A. Suliman	- Equipment Management		2011.11 - Present
<b>20</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mm. Rania Babeke Hassan Ali	- Data Management & Monitoring		2011.11 - Present
<b>21</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Mohammed Bilal	- Water Quality Management		2011.11 - Present
<b>22</b>	<b>Department of Training Course Management</b>			
	Mr. Atif	- Water Quality Management		- Present
<b>23</b>	<b>Department of Training Course Management</b>			
	Ms. Afaf A. Majed	- Community Development		2011.11 - Present
<b>24</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Awad A. Mahmoud	- Community Development		2011.11 - Present
<b>25</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Elkhelifa Abd Elgbar	- Sanitation Management		2015.01 - Present
<b>26</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Mr. Khalefa	- Sanitation Management		- Present
<b>27</b>	<b>Training Course Coordinator, Department of Training Course Management</b>			
	Ms. Afra Abbas Musa	- Monitoring		- Present
<b>28</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>			
	Ms. Manahil Mahjou	- Monitoring		2011.11 - Present

Name & Position of C/Ps	Field of expertise	Participated training	Period assigned as C/P (2011.11-)
<b>SENNAR State Water Corporation</b>			
<b>1</b>	<b>Director General, Sennar SWC</b>		
	Mr. EL Medani Elkhadir	-	2011.11- Present
<b>2</b>	<b>Deputy Director General/ Project administration manager, Sennar SWC/ Training course coordinator, Department of Training Course Management (2013.01 - 2014.05 as Director of training center)</b>		
	Mr. Elsary Kamaledin	- Water Tariff Management	2011.11-- Present
<b>3</b>	<b>Director, Sennar SWC Training Center/ Monitoring, follow-up and evaluation unit (2011.11-2014.05-as Assistant Director)</b>		
	Mr. Abbas Hamid	- Well management	The 1 <sup>st</sup> Training in Morocco (2012.03.18 –03.29) 2011.11 - Present
<b>4</b>	<b>Assistant director &amp; Training course supervisor, Sennar SWC Training Center/ Training course coordinator, Department of Training Course Management (2011.11-2013.01 as Director of training center)</b>		
	Mr. Jalal Bashir	- Community Development - Water tariff management	The 2 <sup>nd</sup> Training in Morocco (2013.04.06 –04.14) 2011.11- Present
<b>5</b>	<b>Training coordinator &amp; instructor, Department of Training Course Management, Sennar SWC Training Center/ Director, Planning and Information Department/ Monitoring, follow-up and evaluation unit</b>		
	Mr. Ali Hassan Saad	- Well management/ Organization Management/ Sanitation Management	2011.11- Present
<b>6</b>	<b>Training Course Coordinator, Department of Training Course Management/ Central Sector</b>		
	Ms. Marwa Osman Abd El Hafizz	- Pipe Network Management	2011.11- Present
<b>7</b>	<b>Assistant Training Coordinator, Department of Training Course Management/ Planning &amp; development management</b>		
	Ms. Sara Ali Mohamed	- Pipe Network Management - Monitoring Management	2011.11- Present
<b>8</b>	<b>Training Course Coordinator, Department of Training Course Management</b>		
	Mr. Abdel Bagi	- Management of Water Treatment Plant	2011.11- Present
<b>9</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management/ Supervisor, Project administration</b>		
	Ms. Sana Osman	- Management of Water Treatment Plant - Monitoring Management	2011.11- Present
<b>10</b>	<b>Assistant Training Coordinator, Department of Training Course Management</b>		
	Ms Omima Mohammed Elhaj	- Organization Management - Equipment Management - Well management	2011.11- Present
<b>11</b>	<b>Training Course Coordinator, Department of Training Course Management/ Director, Central Sennar Sector/ Manager, SWC training center workshop/ Monitoring, follow-up and evaluation unit</b>		
	Mr. Zakaria Siddeg	- Mechanic Management - Equipment Management	2011.11 - Present
<b>12</b>	<b>Assistant Training Course Coordinator, Department of Training Course Management</b>		
	Mr. Mutwakil Mohammed Abdalla	- Mechanic Management	2011.11 - Present
<b>13</b>	<b>Training Course Coordinator, Department of Training Course Management</b>		
	Mr. Ayman Ali	- Electric Management	2011.11 - Present
<b>14</b>	<b>Assistant Training Coordinator, Department of Training Course Management/ Monitoring, follow-up and evaluation unit</b>		
	Ms. Eman Alnoor Fadl-Almoula	- Electric Management	2011.11 - Present
<b>15</b>	<b>Director, Singa Sector/Training Coordinator, Department of Training Course Management/ Monitoring, follow-up and evaluation unit</b>		
	Mr. Ammar Hassan Rahamtalla Mohammed	- Data Management & Monitoring	The 3 <sup>rd</sup> Training in Morocco (2014.04.05 – 2014.04.13) 2011.11- Present
<b>16</b>	<b>Assistant Training Coordinator, Department of Training Course Management</b>		
	Ms. Ameerah Mohamed Nur	- Data Management & Monitoring	2011.11- Present
<b>17</b>	<b>Training Course Coordinator, Department of Training Course Management/ Director, Dali Sector</b>		
	Mr. Ashraf Eltahir Ismail Elnaeim	- Water Quality Management	2011.11- Present
<b>18</b>	<b>Assistant Training Coordinator, Department of Training Course Management</b>		
	Mr. Humam Abdeen	- Water Quality Management	2011.11- Present
<b>19</b>	<b>Training Course Coordinator, Department of Training Course Management</b>		
	Ms. Rehab Mustafa	- Community Development - Sanitation Management	2011.11- Present
<b>20</b>	<b>Assistant Training Coordinator, Department of Training Course Management</b>		
	Mr. Tawil Abd.	- Water Tariff Management	2011.11- 2013.12
<b>21</b>	<b>Geologist, Sinja Sector/ Monitoring, follow-up and evaluation unit</b>		
	Mr. Yasir Adam	- Data management, analysis	2014-Present
<b>22</b>	<b>Manager, Sinja Sector/ Monitoring, follow-up and evaluation unit</b>		
	Mr. Mohamed Jwoda	-	2014-Present
<b>23</b>	<b>Director, Groundwater and wadi office/ Monitoring, follow-up and evaluation unit</b>		
	Mr. Ahmed Widaa	-	2014-Present
<b>24</b>	<b>Financial Accountant/ Monitoring, follow-up and evaluation unit</b>		
	Mr. Tarig Osman	- Finance	2014-Present



### 3) Other State Water Corporations

	Organization & Name of C/Ps	Position of C/Ps	Participated training	Period assigned as C/P per position (2011.11-)
<b>Northern State Water Corporation</b>				
1	Mr. Hassan Ali Haj Almahi	Director General		2011 - Present
2	Mr. Abdalla M. Mahmoud	Director, Training Center		2011 - Present
<b>River Nile State Water Corporation</b>				
3	Mr. Abubakr Abdalla Mohammed	Director General		2011 - Present
4	Mr. Waleed Mahgoub Abdelrahman	Director, Training Center	The 2 <sup>nd</sup> Training in Morocco (2013.04.06-04.14)	2011 - Present
<b>Gadaref State Water Corporation</b>				
5	Mr. Mustafa Ibrahim	Director General		2011 - Present
6	Mr. Elbagi Ibraheam Osman	Director, Training Center		2014 - Present
<b>Kassala State Water Corporation</b>				
7	Mr. Hashim M. Abdel Latif	Director General		2011 - Present
8	Mr. Ali Hassan Sadig	Director, Training Center		2011 - Present
<b>Red Sea State Water Corporation</b>				
9	Mr. Naji Izeldin	Director General		2011 - Present
10	Mr. Awwad Abdel Rahim A. Sadig	Director, Training Center		2011 - Present
<b>Al Gazira State Water Corporation</b>				
11	Mr. Fathalrahman M. Abdelrahman	Director General		2014 - Present
12	Ms. Batoul Saad Abdalla Faggad	Director, Training Center	The 2 <sup>nd</sup> Training in Morocco (2013.04.06-04.14)	2011 - Present
<b>Blue Nile State Water Corporation</b>				
13	Mr. Abde Elmman Mohammed Awad	Director General		2014 - Present
14	Mr. Abde Eladeem Mohood			2011 - Present
<b>North Kordofan State Water Corporation</b>				
15	Mr. Anwar Alsatat	Director General		2015 - Present
16	Ms. Afra Mustafa Mohammed	Director, Training Center		2014 - Present
<b>South Kordofan State Water Corporation</b>				
17	Mr. Yassir Kenany	Director General		2013 - Present
<b>West Kordofan State Water Corporation</b>				
18	Mr. Ibrahim Shaib Mohamed	Director General		2011 - Present
19	Mr. Mohammed Adam Idries	Director, Training Center		2011 - Present
<b>North Darfur State Water Corporation</b>				
20	Mr. Nasir Eldeen Mahmoud	Director General		2011.11 - Present
21	Mr. Salma Hassan Abubasher	Director, Training Center		2013 - Present
<b>South Darfur State Water Corporation</b>				
22	Mr. Idris Debaca Adam	Director General		2011 - Present
23	Mr. Hassan Adam Mohammed	Director, Training Center	The 1 <sup>st</sup> Training in Morocco (2012.03.18.03.29)	2011 - Present
<b>West Darfur State Water Corporation</b>				
24	Mr. Mhmoud Abdalla Bashir Jama	Director General		2011 - Present
25	Mr. Mohamed Hassan Mohamed	Director, Training Center		2014 - Present
<b>East Darfur State Water Corporation</b>				
26	Mr. Hassan Adam Mahmoud Basheer	Director General		2014 - Present
<b>Central Darfur State Water Corporation</b>				
27	Mr. Ibrahim Abaker Digies	Director General		2014 - Present
<b>Khartoum State Water Corporation</b>				
28	Mahgoub Elhalawi	Director General		2014 - Present

## ANNEX 2: Inputs to the Project

### 2-7 Local cost from Sudanese side

#### 1) DWST annual budget for training activities

Item	FY2011	FY2012	FY2013	FY2014	FY2015	Total
Personnel expense (trainee daily allowance, lecturer compensation counterpart fee, skilled workshop labors)	312,600	312,600	437,000	545,000	648,500	2,255,700
Transportation expense (Trainees, lecturers, investigation assistance, exchange experience)	63,000	105,600	79,000	220,000	220,000	687,600
Welfare expense (food expenses of the lodgings, equipment costs of the lodgings, entertainment costs)	155,000	239,000	581,500	598,000	598,000	2,171,500
Office work costs (office supplies, office work machine, maintenance costs of the center)	108,000	120,000	380,000	320,000	320,000	1,248,000
Communication costs (Telephone/fax, internet, anti-virus)	12,000	15,200	45,000	25,500	25,500	123,200
Expenses for lighting and fuel (electricity, water, gas)	39,300	39,300	79,200	79,200	79,200	316,200
Training expense (document purchase, machine parts purchase costs, document making, meeting place)	283,000	283,000	553,000	523,000	523,000	2,165,000
Workshop, seminar, meeting costs (tea, snack, JCC meeting allowance)	90,000	90,000	70,000	57,500	57,500	365,000
Field survey (fuel, allowance, lodging, maintenance)	54,000	57,000	78,000	366,000	708,000	1,263,000
Workshop maintenance costs (maintenance, spare parts, building maintenance)	62,000	62,000	124,000	124,000	124,000	496,000
Others (lodging utilities, emergency payment)	30,000	30,000	36,000	48,000	48,000	192,000
<b>TOTAL (SDG)</b>	<b>1,208,900</b>	<b>1,353,700</b>	<b>2,462,700</b>	<b>2,906,200</b>	<b>3,351,700</b>	<b>11,283,200</b>

(Unit: SDG)

#### 2) White Nile SWC annual budget for training activities

Item	FY2012	FY2013	FY2014	FY2015	TOTAL
Salary	69,500	81,700	155,900	198,150	505,250
Transportation	5,310	5,600	96,200	96,200	203,310
Welfare expense	56,000	16,625	60,700	104,220	237,545
Stationary & office consumables	4,935	8,980	12,716	13,499	40,130
Equipment maintenance	20,400	48,600	32,000	32,000	133,000
Communication	6,700	21,576	29,000	36,800	94,076
Electricity, water, fuel	16,914	9,000	13,920	15,360	55,194
Workshop, Seminar, Meeting	3,600	5,860	108,400	112,400	230,260
Field survey	4,800	17,400	28,200	33,000	83,400
Others	12,000	2,400	7,200	9,000	30,600
<b>Total (SDG)</b>	<b>200,159</b>	<b>217,741</b>	<b>544,236</b>	<b>650,629</b>	<b>1,612,765</b>

(Unit: SDG)

#### 3) Sennar SWC annual budget for training activities

Item	FY2012	FY2013	FY2014	FY2015	TOTAL
Salary	40,400	108,480	88,800	112,050	349,730
Transportation	10,290	2,360	26,100	96,750	135,500
Welfare expense	19,350	25,680	128,600	73,700	247,330
Stationary & office consumables	24,000	9,870	8,190	13,499	55,559
Equipment maintenance	104,010	36,000	24,000	32,000	196,010
Communication	14,000	23,000	12,000	10,000	59,000
Electricity, water, fuel	27,300	26,772	10,560	9,720	74,352
Workshop, Seminar, Meeting	90,000	17,100	10,900	54,400	172,400
Field survey	57,000	32,400	31,800	27,000	148,200
Others	290,500	12,000	59,040	30,000	391,540
<b>Total</b>	<b>676,850</b>	<b>293,662</b>	<b>399,990</b>	<b>459,119</b>	<b>1,829,621</b>

(Unit: SDG)

Note: Fiscal year of Sudan starts from January and ends in December.

## ANNEX 3: RESULTS OF THE EVALUTION

### 3-1 Achievement of the Project

Planned Activities	Results																																																																																																																										
<b>OUTPUT 1: Training courses are implemented by DWST based on its midterm/long-term human resources development plan.</b>																																																																																																																											
<p>1-1 DWST elaborates draft plan for mid-term/long-term human resource development.</p>	<ul style="list-style-type: none"> <li>Based on “Quarter Century Strategy for Water Supply 2011-2031”, DWST prepared the outline of the “Mid-term/Long term Human Resources Developments Plan 2012-2026” and JCC discussed and approved it at the second JCC on June 27, 2012. The plan is on condition that a new training center is completed in Kilo Ten area. It is also intended to strengthen computer and English skills to enforce promotion of the high value added human resources development.</li> <li>DWST and other relevant Sudanese authorities with JICA experts had several discussion and conducted questionnaire survey. These results were reflected to the plan.</li> </ul> <p><b>【Mid-term plan (2012-2018)】</b> Its goal is to develop 5 skills (1. Computer Skill, 2. Data process &amp; analysis, 3. Presentation, 4. Report Making, 5. English), and consists of following activities (1. Construction of New Training Center at Kilo Ten, 2. Set up an effective organization and management system in DWST, 3. Establishment of the Training Unit in each SWC, 4. Establishment of concrete training system in each SWC, 5. Establishment of monitoring system of the training, 6. Establishment of the regular meeting of each Training Center, 7. Set up the information center at DWST, 8. Set up the database of the staff for all SWCs, 9. Set up the management system by computer, 10. Set up an original website in each SWC and DWST, 11. Introduction and installation of new technology (Solar system))</p> <p><b>【Long-term (2012-2026)】</b> Its goal is to develop 7 skills (1. Organizational management skill, 2. Designing skill for research, 3. Project management skill, 4. Facility management skill, 5. Equipment management skill, 6. Quality management skill, 7. Monitoring &amp; evaluation skill) and it consists of 5 activities (1. Technical exchange of Morocco, 2. Set up of DWST satisfying international standard, 3. Core training center in Africa, 4. Good maintained training center, 5. Involving private sector trainees)</p>																																																																																																																										
<p>1-2 DWST prioritizes actual needs for the training courses.</p>	<ul style="list-style-type: none"> <li>In Year 1, DWST with JICA experts visited 10 states (Northern state, Gezira state, Gadaref state, Kassala state, Blue Nile state, Sennar state, White Nile state, North Kordofan state, North Darfur state, West Darfur state), and conducted needs assessment of training. DWST prioritized actual needs for the training course as below. (Rating: A for high priority, B for moderate priority)</li> </ul> <table border="1"> <thead> <tr> <th>No.</th> <th>Stage</th> <th>Soft Wear Training</th> <th>Priority</th> <th>Hard Wear Training</th> <th>Priority</th> </tr> </thead> <tbody> <tr> <td rowspan="6">1</td> <td rowspan="6">Survey Design</td> <td>Design/Cost Estimation</td> <td>B</td> <td>Geophysical Survey</td> <td>A</td> </tr> <tr> <td>Basic Computer</td> <td>A</td> <td>Preliminary Study</td> <td>B</td> </tr> <tr> <td>Reporting</td> <td>A</td> <td>Design of Water Treatment Plant</td> <td>B</td> </tr> <tr> <td>Presentation 1</td> <td>A</td> <td>Design of Water Yard</td> <td>A</td> </tr> <tr> <td>Data Collection/GIS</td> <td>A</td> <td>Design of Distribution Pipe Line</td> <td>A</td> </tr> <tr> <td>Project Cycle Management (PCM)</td> <td>A</td> <td>Basic Mechanics and Electricity</td> <td>A</td> </tr> <tr> <td rowspan="5">2</td> <td rowspan="5">Procurement Construction</td> <td>Equipment Procurement</td> <td>B</td> <td>Construction Management of Well Drilling</td> <td>A</td> </tr> <tr> <td>Inspection of Equipment</td> <td>B</td> <td>Construction Management of Water Treatment</td> <td>B</td> </tr> <tr> <td>Management of Equipment</td> <td>A</td> <td>Construction Management of Water Yard</td> <td>A</td> </tr> <tr> <td>Work Plan</td> <td>A</td> <td>Installation of Pump and Generator</td> <td>A</td> </tr> <tr> <td>Contract</td> <td>B</td> <td>Construction Management of Pipe Network</td> <td>A</td> </tr> <tr> <td rowspan="6">3</td> <td rowspan="6">Operation Maintenance</td> <td>Organizational Management</td> <td>A</td> <td>Well Management</td> <td>A</td> </tr> <tr> <td>Collection of Water Tariff</td> <td>A</td> <td>O&amp;M of Water Treatment Plant</td> <td>A</td> </tr> <tr> <td>Community Development</td> <td>A</td> <td>O&amp;M of Water Supply Facility</td> <td>A</td> </tr> <tr> <td>Data Base/GIS</td> <td>A</td> <td>Water Quality Management</td> <td>A</td> </tr> <tr> <td>O&amp;M Manual</td> <td>A</td> <td>Pipe Network Management</td> <td>A</td> </tr> <tr> <td>Water Strategy</td> <td>A</td> <td>Workshop Management</td> <td>A</td> </tr> <tr> <td rowspan="3">4</td> <td rowspan="3">Monitoring</td> <td>Methodology of Monitoring</td> <td>A</td> <td>Monitoring of Facility</td> <td>A</td> </tr> <tr> <td>Monitoring Report</td> <td>B</td> <td>Monitoring of Equipment</td> <td>A</td> </tr> <tr> <td>Presentation 2</td> <td>B</td> <td>Monitoring of Management</td> <td>A</td> </tr> <tr> <td rowspan="3">5</td> <td rowspan="3">Rehabilitation Modification Expansion</td> <td>Rehabilitation Plan</td> <td>A</td> <td>Well Rehabilitation</td> <td>A</td> </tr> <tr> <td>Design/Cost Estimation of Rehabilitation</td> <td>A</td> <td>Rehabilitation &amp; Expansion of Water Yard</td> <td>A</td> </tr> <tr> <td>Equipment Procurement of Rehabilitation</td> <td>A</td> <td>Rehabilitation &amp; Expansion of Water Treatment Plant</td> <td>A</td> </tr> <tr> <td rowspan="2">6</td> <td rowspan="2">Others</td> <td>Basic English</td> <td>A</td> <td>Water Harvesting</td> <td>B</td> </tr> <tr> <td>Management of Project Fund</td> <td>B</td> <td>Desalinization of Sea Water</td> <td>B</td> </tr> </tbody> </table>					No.	Stage	Soft Wear Training	Priority	Hard Wear Training	Priority	1	Survey Design	Design/Cost Estimation	B	Geophysical Survey	A	Basic Computer	A	Preliminary Study	B	Reporting	A	Design of Water Treatment Plant	B	Presentation 1	A	Design of Water Yard	A	Data Collection/GIS	A	Design of Distribution Pipe Line	A	Project Cycle Management (PCM)	A	Basic Mechanics and Electricity	A	2	Procurement Construction	Equipment Procurement	B	Construction Management of Well Drilling	A	Inspection of Equipment	B	Construction Management of Water Treatment	B	Management of Equipment	A	Construction Management of Water Yard	A	Work Plan	A	Installation of Pump and Generator	A	Contract	B	Construction Management of Pipe Network	A	3	Operation Maintenance	Organizational Management	A	Well Management	A	Collection of Water Tariff	A	O&M of Water Treatment Plant	A	Community Development	A	O&M of Water Supply Facility	A	Data Base/GIS	A	Water Quality Management	A	O&M Manual	A	Pipe Network Management	A	Water Strategy	A	Workshop Management	A	4	Monitoring	Methodology of Monitoring	A	Monitoring of Facility	A	Monitoring Report	B	Monitoring of Equipment	A	Presentation 2	B	Monitoring of Management	A	5	Rehabilitation Modification Expansion	Rehabilitation Plan	A	Well Rehabilitation	A	Design/Cost Estimation of Rehabilitation	A	Rehabilitation & Expansion of Water Yard	A	Equipment Procurement of Rehabilitation	A	Rehabilitation & Expansion of Water Treatment Plant	A	6	Others	Basic English	A	Water Harvesting	B	Management of Project Fund	B	Desalinization of Sea Water	B
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1-3 DWST elaborates its training implementation plan based on the draft plan for midterm/ long term human resource development.

- Based on the framework of the “Mid-term/ long term human resource development 2012-2016”, DWST improved its training design and plan annually.
- Prior to Phase 2 started in November 2011, DWST had implemented training in 13 different courses as below.
 

1. O&M of water treatment plant, 2. Water supply facility, 3. Data management/GIS, 4. Well management, 5. Organizational management, 6. Water analysis, 7. Pipe network management, 8. Water facility management, 9. Isotope in hydrology, 10. Procurement & storage, 11. Software of pipe network, 12. Hydrometric & surface water, 13. Groundwater geophysics & water well design
---
- Starting from Year 1 of Phase 2, DWST has been developing following courses:
 

1. Project Cycle Management, 2. Advance well management, 3. Borehole camera, 4. Basic 2D Geo-electrical imaging, 5. Presentation skill, 6. Training of Trainer, 7. Report writing, 8. Planning Monitoring & Evaluation, 9. Well rehabilitation, 10. Engineering economy, 11. Data management/GIS & remote sensing, 12. Solar system, 13. Basic of programmable logic controllers, 14. Supply chain, 15. Estimation costs & equipment management, 16. Computer skills (Excel), 17. Sanitation management, 18. Management skills & Projects planning, 19. Workshop for integrated water resources management & its role for peace-building & conflict resolution, 20. Statistical package for social science (SPSS), 21. Improve rural water supply management, 22. Water analysis (Instrument) (Chromatography techniques) (Chromatography-HPLC) (ISO 17025) (Instrument & Groundwater Treatment), 23. Advanced Procurement & Storage, Management Skills (primavera), 24. Tendering contracts, 25. Human resources development,
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- Since PWC changed to DWSU in August 2012, it also required DWST to cover sanitation management. From January 2014, a new course of sanitation management is designed and added to the training plan. Accordingly training coordinators assigned for the course. After conducting 1 session of the sanitation management course, DWST training coordinators managed to implement the 2<sup>nd</sup> session by themselves.

1-4 DWST implements training courses based on the training course implementation plan.

- As of December 2014, total number of training participants in DWST is 1,775 (through 113 sessions of 35 training courses from phase 1 to phase 2 of the Project).
- For 2015, DWST has been planning and implementing 25 sessions of 16 training courses.
- Participants of the training in DWST are from 30 different organizations. Over 80% of total trainees in DWST are from SWCs. In addition, UNOPS, IOM and AfDB dispatched trainees including SWC staff members from Darfur states and South Kordofan state to DWST from September, 2013 as parts of their programs.

No	DWST Training Course	Number of trainees (person) by year							
		2009	2010	2011	2012	2013	2014	2015	Total
1	Water Treatment Plant	41	17	15	29(14+15)	0	29(11+10+8)		131
2	Water Supply Facility	64(22+20+22)	18	31(16+15)	29(14+15)	52(17+19+16)	16	16	226
3	Data Management /GIS	46(16+15+15)	27(14+13)	16	26(13+13)	31(17+14)	0	13	159
5	Well Management	19	37(19+18)	17	16	0	44(18+14+12)		133
6	Organizational Management	12	25(12+13)	0	0	13	16		66
4	Water Quality	0	33(17+16)	32(16+16)	29(14+15)	29(15+24)	26(15+11)	14	163
7	Pipe Network Management	0	35(18+17)	30(11+19)	26(13+13)	54(13+13+16+12)	48(17+16+15)		193
8	Water Facility Management*	0	39(15+9+11+4)	0	0	0	0		39
9	Advanced Well Management*	0	0	0	9	0	0		9
10	Borehole camera*	0	0	0	8	0	0		8
11	Estimation Cost & Equipment Management*	0	0	0	0	9	0		9
12	Isotope Hydrology	0	0	8	0	0	0		8
13	Procurement and Storage /Supply chain			13	19	10	10		52
14	Water Well Design			16	16	49(13+11+9+16)			81
15	Hydrometric and Surface Water			25	0	0			25
16	Management of Project Cycle			16	15	0			31
17	Geo Electrical Imaging*				26(12+14)*	0			26
18	Presentation Skill				15	0			15
19	Training of Trainer				13	0			13
20	Report Writing				11	11			22
21	Planning Monitoring and Evaluation					18			18
22	Economic Impact of Well Rehabilitation					12			12
23	Engineering Economy					14			14
24	Solar System					24(9+15)			24
25	Groundwater Treatment & Chromatography Techniques					25(15+10)	27(13+14)		52

26	Basic of PLC					17			17
27	Computer Basic Excel					12			12
28	Sanitation Management						34(19+15)		34
29	Management Skills & Projects Planning						26(14+12)		26
30	Integrated Management of Water & its Role in Peace-Building and Conflict Resolution						25		25
31	Statistical Package for Social Science (SPSS)						11		11
32	Technical Management of Water Yards	0	0	0	0	0	18		18
33	Workshop on Atlas of Ground & Surface water							73	73
34	Rural water supply development							14	14
35	Pensions & Insurances							16	
Total		182	231	219	287	380	330	146	1,775

\*Specially designed course for Darfur states & Three Protocol Areas

• In March 2012, DWST Director with JICA expert visited Morocco for preparation of the training course with the several institutions. Training in Morocco started in May 2012. Total of 38 trainees have been dispatched to the group training in Morocco through 2012 to 2014 as shown in the table below. They visited several water supply facilities and gained technical knowledge. When they came back to Sudan, every group presented their reporting of training outcomes.

Through analyzing the water supply issues in Sudan by comparing with situation in Morocco, trainees were able to change their perception and promote their self-effort.

• One of the ex-participants from Sennar SWC prepared human resources development plan for the water supply sector. During the Project period, the 4<sup>th</sup> training in Morocco is planned for 14 trainees in March-April 2015.

	Period	Theme	Participants	Reporting
0	2012.03.18-03.29	<ul style="list-style-type: none"> <li>Visiting and learning about water resources management and drinking water supply in urban area and rural areas, water-saving irrigation, sewage treatment, waste water recycle plan</li> <li>Discussion with organizations receiving Sudanese trainees (National Drinking Water and Electricity Corporation in Morocco (ONEE), National Water Corporation (ONEP), Department Water, Hydraulic Basin Office of Tenshift (ABHT), Hydraulic Basin Office of Sus Massa Darra (ABHSMD)</li> </ul>	• DWST (1), JICA Expert (1)	2012.3.29
1	2012.05.13-05.27 (14 days)	<ul style="list-style-type: none"> <li>Visiting and learning from advanced training facilities, training implementation framework, water resources development &amp; protection, urban water supply system, rural water supply system, sewage treatment &amp; wastewater recycle, water-saving irrigation, and discussion with relevant personnel of the Moroccan side.</li> <li>Study about how Morocco could achieve the most advanced water resources development and human resources development as well as water supply in Africa.</li> </ul>	16 persons (Target group: Engineers of SWCs) <Trainees> DWST (1), Sennar state (2), White Nile state (2), Kassala state (3)**, Darfur areas (3)*, South Kordofan state (1)*, Blue Nile state (1)* <Organizers> Coordinator (1), JICA Experts (2)]	2012.6.20
2	2013.04.06-04.14 (9 days)	<ul style="list-style-type: none"> <li>Lecture and site visits in ONEP, Department of Water, ABHT, ABHSMD, Department of Equipment</li> <li>Fez water treatment plant and water supply facilities</li> <li>Overall training management</li> </ul>	17 persons (Target group: SWCT director, Engineers) <Trainees> DWST (1), Northern state (1), River Nile state (1), Khartoum state (1), Gezira state (1), Sennar state (1), White Nile state (1), North Kordofan state (1)*, North Darfur state (1)*, West Darfur state (1)*, South Darfur state (1)*, South Kordofan state (1)* <Organizers> JICA Experts (2), JICA Sudan Office (1)	2013.4.29
3	2014.04.05-04.13 (9 days)	<ul style="list-style-type: none"> <li>Rural water supply, fee collection method, set-up of water meters, Operation and management of facilities and equipment etc.</li> <li>Sewage treatment &amp; waste water recycle, water-saving irrigation</li> </ul>	12 persons <Trainees> DWST (1), Sennar state (1), White Nile state (1), Kassala state (2), Red Sea state (1), River Nile state (1), Northern state (1), Gedaref state (1) <Organizers> Coordinator (1), JICA Experts (1)	2015.5.14
4	Planned for 2015.03-04 (9 days)	<ul style="list-style-type: none"> <li>Operation and management methods of facilities and equipment of water treatment plant of ONEE</li> <li>Discussion on future approaches for human resources development in Sudan and Morocco</li> </ul>	13 persons <Trainees> DWST(1), Sennar state (1), White Nile (3) , Kassala state (1), Northern state (1), River Nile state (1), Khartoum state (1), Gadaref state (1), Gezira state (1) <Organizers> Coordinator (1), JICA Expert (1)	-

\* Participants from "Project for Human Resources Development for Darfur and the Three Protocol Areas"

	<p>** Participants from “Capacity Development Project for the Provision of Services for Basic Human Needs in Kassala”</p> <ul style="list-style-type: none"> <li>In order to start sustainable South-South cooperation between Morocco and Sudan, DWSU has invited experts from Morocco since 2012. Details of these activities can be found in the training reports prepared by the experts from Morocco. During the planned 4<sup>th</sup> training in Morocco, representatives from the Sudanese side and the Moroccan side are planning to discuss future approaches for human resources development in Sudan and Morocco including the vision of human resources development of Sudan.</li> </ul>														
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1-5 DWST evaluates the training courses.	<ul style="list-style-type: none"> <li>DWST has conducted evaluation of the training courses utilizing methodology developed in Phase 1 of the Project and compiled to the training reports. Each session of the training course is graded (5 grades) by trainees on 3 categories (1. Contents, 2. Lecturers, 3. Facilities).</li> <li>DWST has conducted final exams for each training course to assess trainees’ understanding and techniques. For every course, DWST has been awarding the prize for the best trainees whose exam results are the highest among participants.</li> <li>Majority of participants of the training in Morocco in 2012 responded ‘highly satisfied with the training’. All of the participants of the training in Morocco in 2013 &amp; 2014 responded ‘highly satisfied’.</li> </ul>														
1-6 DWST revises training course contents, textbooks and manuals based on the evaluation results of the training courses.	<ul style="list-style-type: none"> <li>DWST training coordinators with technical advice by JICA Experts made revisions of curriculums developed in Phase 1 and prepared new training materials for new courses. DWST have been managing the database for these training materials.</li> <li>There are still issues to be solved for upgrading training curriculum, textbooks and manuals once the new training center is opened in near future.</li> <li>In addition, DWST developed several manuals. (Annex 4: List of materials developed by the Project)</li> </ul>														
1-7 DWST improves its capacity responding to the expansion of training center.	<ul style="list-style-type: none"> <li>In January 2011, Iranian loan agreement was made for construction of the new training center. Due to delay in its construction because of funding and contracting issues, new training implementation structure of DWST has not been established. However, with leadership of the core staff members from Phase 1, DWST has been planning and managing the training courses in the existing training facility with available equipment.</li> <li>DWST has increased the number of trainees every year. (219 participants for 2011, 287 participants in 2012, 380 participants in 2013, 330 participants in 2014)</li> <li>DWST has increased its budget every year. (1,208,900SDG in 2011, 1,353,700SDG in 2012, 2,462,700SDG in 2013, 2,906,200SDG in 2014)</li> </ul>														
1-8 DWST finalizes the mid-term/ long-term human resources development plan, which is to be authorized by the Government of	<ul style="list-style-type: none"> <li>DWST has discussed with MoHRD about draft “Mid-term/long-term human resources development 2012-2026” developed through Activity 1-1.</li> <li>In February 2015, DWST submitted the final draft of the plan to the Federal Ministry of Water Resources and Electricity (MoWRE).</li> <li>Once the MoWRE approves it, DWST will submit the final version to the Federal Ministry of Human Resources Development (MoHRD) for approval and issuing the certificate of authorization by August 2015.</li> </ul>														

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<b>OUTPUT 2: Training course implementation structures in PSWCs are developed by PSWCs in collaboration with DWST.</b>																																																																																																											
2-1 DWST strengthens its leadership through the support of below activities of SWC.	<ul style="list-style-type: none"> <li>DWST director and course coordinators assisted SWC training coordinators through regular visits and daily correspondence. In pilot states where JICA Experts stay, DWST coordinator provided advisory and daily supports on training plan design, implementation methods, various evaluation, and training center management.</li> <li>Director General meetings are held regularly. Information and opinions are shared among SWCs and DWST.</li> </ul>																																																																																																										
2-2 PSWCs establish training units within the organization.	<ul style="list-style-type: none"> <li>In November 2011, White Nile SWC established its training center. In April 2012, Sennar SWC established its training center.</li> <li>By Year 3, PSWCs allocated staff members for their training centers. Most of these staff members have their own duties besides implementation of training.</li> </ul>																																																																																																										
2-3 PSWCs develop the draft SWC activities plan.	<ul style="list-style-type: none"> <li>In Year 4, each PWC has been developing the “Action Plan” which consists of training implementation plan for the coming 3 years (2015-2017).</li> <li>Every year, PSWCs have secure annual training budget. (ANNEX 2: Inputs to the Project, 2-6 Local cost from Sudanese side)</li> </ul>																																																																																																										
2-4 PSWCs prioritize actual needs for the training courses	<ul style="list-style-type: none"> <li>In Year 1 of the Project, priorities of training were identified for the pilot states as below. (Rating: A for high priority, B for moderate priority)</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>Stage</th> <th>Soft Wear Training</th> <th>Priority</th> <th>Hard Wear Training</th> <th>Priority</th> </tr> </thead> <tbody> <tr> <td rowspan="4">1</td> <td rowspan="4">Survey Design</td> <td>Basic Computer</td> <td>A</td> <td>Geophysical Survey</td> <td>A</td> </tr> <tr> <td>Reporting</td> <td>A</td> <td>Basic Mechanics and Electricity</td> <td>A</td> </tr> <tr> <td>Presentation</td> <td>A</td> <td></td> <td></td> </tr> <tr> <td>Data Collection/GIS</td> <td>A</td> <td></td> <td></td> </tr> <tr> <td rowspan="3">2</td> <td rowspan="3">Procurement Construction</td> <td>Equipment Procurement</td> <td>A</td> <td>Installation of Pump and Generator</td> <td>A</td> </tr> <tr> <td>Inspection of Equipment</td> <td>A</td> <td>Construction Management of Pipe Network</td> <td>A</td> </tr> <tr> <td>Management of Equipment</td> <td>A</td> <td></td> <td></td> </tr> <tr> <td rowspan="7">3</td> <td rowspan="7">Operation Maintenance</td> <td>Organizational Management</td> <td>A</td> <td>Well Management</td> <td>A</td> </tr> <tr> <td>Collection of Water Tariff</td> <td>A</td> <td>O&amp;M of Water Treatment Plant</td> <td>A</td> </tr> <tr> <td>Community Development</td> <td>A</td> <td>O&amp;M of Water Supply Facility</td> <td>A</td> </tr> <tr> <td>Data Base/GIS</td> <td>A</td> <td>Water Quality Management</td> <td>A</td> </tr> <tr> <td>O&amp;M Manual</td> <td>A</td> <td>Pipe Network Management</td> <td>A</td> </tr> <tr> <td>Water Strategy</td> <td>A</td> <td>Workshop Management</td> <td>A</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="4">4</td> <td rowspan="4">Monitoring</td> <td>Methodology of Monitoring</td> <td>A</td> <td>Monitoring of Facility</td> <td>A</td> </tr> <tr> <td></td> <td></td> <td>Monitoring of Equipment</td> <td>A</td> </tr> <tr> <td></td> <td></td> <td>Monitoring of Management</td> <td>A</td> </tr> <tr> <td></td> <td></td> <td>Well Rehabilitation</td> <td>A</td> </tr> <tr> <td rowspan="2">5</td> <td rowspan="2">Rehabilitation Modification Expansion</td> <td></td> <td></td> <td>Rehabilitation &amp; Expansion of Water Yard</td> <td>A</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">6</td> <td rowspan="2">Others</td> <td>Management of Project Fund</td> <td>A</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	No.	Stage	Soft Wear Training	Priority	Hard Wear Training	Priority	1	Survey Design	Basic Computer	A	Geophysical Survey	A	Reporting	A	Basic Mechanics and Electricity	A	Presentation	A			Data Collection/GIS	A			2	Procurement Construction	Equipment Procurement	A	Installation of Pump and Generator	A	Inspection of Equipment	A	Construction Management of Pipe Network	A	Management of Equipment	A			3	Operation Maintenance	Organizational Management	A	Well Management	A	Collection of Water Tariff	A	O&M of Water Treatment Plant	A	Community Development	A	O&M of Water Supply Facility	A	Data Base/GIS	A	Water Quality Management	A	O&M Manual	A	Pipe Network Management	A	Water Strategy	A	Workshop Management	A					4	Monitoring	Methodology of Monitoring	A	Monitoring of Facility	A			Monitoring of Equipment	A			Monitoring of Management	A			Well Rehabilitation	A	5	Rehabilitation Modification Expansion			Rehabilitation & Expansion of Water Yard	A					6	Others	Management of Project Fund	A						
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2-5 PSWCs develop training course implementation plan based on the priority	<ul style="list-style-type: none"> <li>In Year 1, JICA Experts designed training plan for pilot states and conducted 2 courses (1. Well management, 2. Organizational management).</li> <li>In Year 2, in addition to the Computer training course that Sudanese side can implement on their own, 10 other courses were planned with technical assistance by JICA Experts (1. Organizational management, 2. Well management, 3. Water quality management, 4. Data management, 5. Equipment management, 6. Mechanical management, 7. Electricity management, 8. Pipe network management, 9. Water treatment facility management, 10. Community development). Training period varied from 3 days to 19 days depends on training contents for each course.</li> <li>In Year 3, PSWC added new course for collection of water tariff.</li> <li>In Year 4, PSWCs developed new course for sanitation management. In addition, Kosti Special Training (Equipment management, Mechanical management, Electricity management) is planned and implemented for the purpose of supporting C/Ps of the grant project “The Project for improvement of water treatment plant in Kosti city.”</li> </ul>																																																																																																										
2-6 PSWCs'	<ul style="list-style-type: none"> <li>In Year 1, PSWC utilized training materials that DWST developed in Phase 1 and manage in the training database. Curriculum and textbooks in the databased were translated to Arabic and</li> </ul>																																																																																																										

training units develop training course curriculum (including OJT in Localities) and textbooks.	<p>prepared for the training courses in PSWCs.</p> <ul style="list-style-type: none"> <li>Since Year 2, PSWC training management staff members with technical assistance by JICA Experts, have conducted a series of discussion with lecturers such as from universities, and developed curriculum and textbooks. DWST dispatched its staff members to PSWCs to transfer their knowledge on how to manage training courses.</li> <li>Training courses such as well management, mechanical management, electrical management, equipment management, community development and sanitation management apply OJT methods on sites besides lecture at the training center. For those courses lectured in the training center (e.g. database management) also use topics and materials that trainees deal with at their work.</li> </ul>																																																																																																																																																														
2-7 PSWCs' training units implement training courses.	<ul style="list-style-type: none"> <li>PSWC training coordinators implemented planned training and achieved contribution rates on training management as in table below. Total number of participants of the training conducted in both PSWCs exceeds 941 (as of 5 March 2015).</li> <li>Total participants in White Nile SWC is 523 (as of 5 March 2015). Contribution rates of the training coordinators (annual average) in White Nile SWC have reached over 80% in 2013 and increased annually (by 36% from 2012 to 2013 and by 9% from 2013 to 2014). In 2014, Kosti special training (electricity, mechanical, and equipment management) was conducted for C/Ps in White Nile state where grant program is planned by Government of Japan is planned for water supply facilities (Number of the trainees: 25).</li> </ul>																																																																																																																																																														
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	Trainee (person)	Contribution (%)	Trainee (person)	Contribution (%)	Trainee (person)	Contribution (%)	Trainee (person)	Contribution (%)	Trainee (person)																																																																																																																																																						
Organizational management	20 (10+10)	62.1, 63.6	19	87.9	-	-	28	86.7	39																																																																																																																																																						
Well management	11	60.0	14	63.0	12	86.7	12	-	37																																																																																																																																																						
Water quality management	10	66.0	-	-	47 (21+26)	84.0, 94.0	-	-	57																																																																																																																																																						
Data management	10	61.7	14	87.2	-	-	-	-	24																																																																																																																																																						
Equipment management	13	65.0	14	86.1	-	-	-	-	27																																																																																																																																																						
Mechanical management	11	67.0	-	-	50 (11+14+25)	81.0, 95.7, 86.1	-	-	61																																																																																																																																																						
Electrical management	7	73.2	-	-	13	90.6	6	-	26																																																																																																																																																						
Pipe network	-	-	17 (9+8)	86.0, 67.0	14	94.0	-	-	31																																																																																																																																																						
Water treatment plant management	-	-	13	82.6	50 (24+26)	86.3, 94.3	-	-	63																																																																																																																																																						
Community development	-	-	17	82.6	17	85.0	12	94.6	46																																																																																																																																																						
Water tariff management	-	-	25	84.0	-	-	28	86.7	25																																																																																																																																																						
Sanitation management	-	-	-	-	19	91.0	-	-	19																																																																																																																																																						
Total number of participants/ Average contribution rates	82	64.8	133	80.7	222	89.1	86	89.3	523																																																																																																																																																						
Source: White Nile SWC Database																																																																																																																																																															
<ul style="list-style-type: none"> <li>Total participants in Sennar SWC is 418 (as of 5 March 2015). Contribution rates of the training coordinators (annual average) in Sennar SWC have reached 88.2% (by 21% from 2012 to 2013, by 8% from 2013 to 2014). Moreover, Sennar SWC conducted training courses by themselves (indicated as 100% contribution) for 11 times. For 2013, annual average contribution rate exceeds the target rate of 80%.</li> <li>In Sennar, with technical support by JICA expert, SWC training coordinators developed and implemented well management training for 8 engineers from Darfur in addition to 8 engineers from Sennar PWC (2013.3.10-14). In this course, participants have learnt about Hawata Project supported by Germany including operations of water yard, management of spare parts, stand-by power system, independent water tariff management system etc.</li> </ul>																																																																																																																																																															
<table border="1"> <thead> <tr> <th rowspan="3">Course</th> <th colspan="9">Sennar SWCT</th> </tr> <tr> <th colspan="2">2012</th> <th colspan="2">2013</th> <th colspan="2">2014</th> <th colspan="2">2015</th> <th>Total</th> </tr> <tr> <th>Trainee (person)</th> <th>Contribution (%)</th> <th>Trainee (person)</th> <th>Contribution (%)</th> <th>Trainee (person)</th> <th>Contribution (%)</th> <th>Trainee (person)</th> <th>Contribution (%)</th> <th>Trainee (person)</th> </tr> </thead> <tbody> <tr> <td>Organizational management</td> <td>32 (10+15+7)</td> <td>59.0, 100, 53.0</td> <td>24 (14+10)</td> <td>N/A, 76.9</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>56</td> </tr> <tr> <td>Well management</td> <td>11</td> <td>65.0</td> <td>20 (11+9)</td> <td>64.1, 91.1</td> <td>-</td> <td>-</td> <td>8</td> <td>95.90</td> <td>39</td> </tr> <tr> <td>Water quality management</td> <td>5</td> <td>67.0</td> <td>-</td> <td>-</td> <td>19 (10+9)</td> <td>82.0, 94.3</td> <td>-</td> <td>-</td> <td>24</td> </tr> <tr> <td>Data management</td> <td>10</td> <td>71.8</td> <td>9</td> <td>87.8</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>19</td> </tr> </tbody> </table>		Course	Sennar SWCT									2012		2013		2014		2015		Total	Trainee (person)	Contribution (%)	Trainee (person)	Contribution (%)	Trainee (person)	Contribution (%)	Trainee (person)	Contribution (%)	Trainee (person)	Organizational management	32 (10+15+7)	59.0, 100, 53.0	24 (14+10)	N/A, 76.9	-	-	-	-	56	Well management	11	65.0	20 (11+9)	64.1, 91.1	-	-	8	95.90	39	Water quality management	5	67.0	-	-	19 (10+9)	82.0, 94.3	-	-	24	Data management	10	71.8	9	87.8	-	-	-	-	19																																																																																										
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Data management	10	71.8	9	87.8	-	-	-	-	19																																																																																																																																																						



Equipment management	10	61.0	7	81.4	7	81.4			24
Mechanical management	-	-	11	78.0	18 (9+9)	87.5, 87.5			29
Electrical management	-	-	16 (7+9)	86.0, 100	7	92.4	-		23
Pipe network	-	-	17 (9+8)	67.0, 83.5	5	94.0			22
Water treatment plant management	-	-	12	81.1	19 (9+10)	87.1, 92.3			31
Community development	-	-	15	78.7	12	86.3	11	94.7	38
Water tariff management	-	-	12	87.0	-	-	-	-	12
Sanitation management	-	-	-	-	9	92.0			9
Basic Computer	24 (13+11)	100, 100	-	-	-	-			24
Auto CAD	-	-	10	100.0	-	-			10
Excel Accounted	-	-	10	-	-	-			10
Government fund system	-	-	11	100.0	-	-			11
Government Accounting Process	-	-	-	-	11	100			11
Public service act	-	-	-	-	12	100			12
Global position system	-	-	-	-	14	100			14
Total number of participants/ Average contribution rates	92	69.31	174	84.1	133	91.2	19	95.3	418

Source: "Sennar State Water Corporation training monitoring, 4 February 2015" & data provided by JICA Experts.

Note: Number of monitoring workshop are excluded and mentioned in Output 3 below.

2-8 PSWCs' training unit evaluate the training courses.

• In White Nile state, trainees evaluated training courses as below.

Course	White Nile SWCT											
	2012			2013			2014			2015		
	course	lecturer	facility	course	lecturer	facility	course	lecturer	facility	course	lecturer	facility
Organizational management	87.0	98.0	89.7	97.4	94.1	92.9	-	-	-	98.6	97.2	86.7
	89.7	92.6	89.7									
Well management	65.4	66.0	76.2	76.4	52.0	60.1	92.9	89.8	85.0	N/A	N/A-	55.0
Water quality management	80.6	82.2	82.9	-	-	-	91.3	84.1	86.2	-	-	-
Data management	96.2	95.9	92.9	99.1	88.2	93.6	-	-	-	-	-	-
Equipment management	98.8	98.2	95.5	92.5	95.1	89.2	99.1	98.85	98.3	-	-	-
Mechanical management	93.8	92.0	88.7	-	-	-	93.2	92.6	90.9	-	-	-
							93.2	96.3	92.4			
Electrical management	89.1	91.7	92.2	-	-	-	89.2	91.7	91.8	N/A	N/A	N/A
Pipe network	-	-	-	91.1	88.3	89.0	90.4	90.3	89.7	-	-	-
				90.1	87.2	89.8						
Water treatment plant management	-	-	-	93.9	92.4	90.6	93.8	89.6	88.7	-	-	-
							93.5	93.77	94.1			
Community development	-	-	-	94.5	96.3	96.0	94.1	95.3	94.1	76.0	95.1	84.2
Water tariff management	-	-	-	93.9	92.4	90.6	-	-	-	98.6	97.2	86.7
Sanitation management	-	-	-	-	-	-	85.5	89.9	87.7	-	-	-
Average (%)	87.6	89.6	88.5	92.1	87.3	88.0	92.4	92.0	90.8	94.4	96.5	78.15

Source: White Nile SWC training center

• In Sennar state, trainees evaluated training courses as below.

Course	Sennar SWCT											
	2012			2013			2014			2015		
	course	lecturer	facility	course	lecturer	facility	course	lecturer	facility	course	lecturer	facility
Organizational management	97.0	95.5	80.1	98.3	96.7	92.9				-	-	-

		98.4	98.0	93.0									
	Well management	92.1	92.5	-	82.6 96.8	86.4 94.7	93.3 94.6				99.1	98.5	98.5
	Water quality management	94.8	89.8	91.8				95.0 93.9	95.7 95.2	83.5 92.6	-	-	-
	Data management	94.8	93.9	88.8	95.5	98.0	90.8				-	-	-
	Equipment management	96.4	95.8	80.0	96.7	97.0	93.0	99.1	98.8	98.3			
	Mechanical management	-	-	-	96.3	93.4	84.0	98.1 98.1	97.4 97.7	87.0 87.0	-	-	-
	Electrical management	-	-	-	82.2	92.2	76.5	98.8	98.8	82.4	-	-	-
	Pipe network	-	-	-	91.1 95.8	88.3 94.3	89.0 89.0	100	97.88	89.0			
	Water treatment plant management	-	-	-	94.7	93.7	92.6	95.0 93.2	93.8 87.9	91.0 78.7			
	Community development	-	-	-	96.6	94.5	92.8	96.2	96.7	91.0	98.2	98.5	88.9
	Water tariff management	-	-	-	97.1	98.2	93.0				-	-	-
	Sanitation management							97.6	96.6	96.7			
	Basic Computer												
	Auto CAD				97.7	97.1	95.4						
	Excel Accounted												
	Government fund system												
	Government Accounting Process							97.2	97.2	92.5			
	Public service act							98.3	96.0	94.5			
	Global position system							93.6	90.4	92.4			
	Average (%)	95.6	94.25	86.74	94.0	94.2	90.5	96.7	95.7	89.8	98.7	98.5	93.7

Source: "Sennar State Water Corporation training monitoring, 4 February 2015" & data provided by JICA Experts.

2-9 PSWCs' training units revise training course curriculum and textbooks based on the evaluation results of the training courses	<ul style="list-style-type: none"> <li>PSWC training coordinators have revised curriculum, textbooks based on results of evaluation and technical advice by JICA Experts.</li> <li>In Year 2, participated trainees commented that training period was short. There have been limitations of training facilities given the current condition with 1 seminar room and 1 computer room. However, in response to the evaluation results by the trainees, PSWCs have extended training period to 2 weeks or more depending on training courses by scheduling courses which do not require the seminar room all the time.</li> </ul>
2-10 PSWCs reflect the monitoring result of draft SWC activities plan to training course implementation plan.	<ul style="list-style-type: none"> <li>Since the "Water, Sanitation and Hygiene (WASH) Sector Strategic Plan 2011-2016" was developed before PSWCs started planning for establishment of training centers, the target of capacity development of human resources through training in technical and managerial aspects are set lower than actual achievement level indicated in Activity 2-7 above.(e.g. In White Nile WASH sector strategy, number of staff to be trained in WASH related technical and managerial subjects is set for 120 SWC and MoH staff and number of staff trained in technical issues is set for 150. In Sennar WASH sector strategy,</li> <li>Each PWC has been developing the "Action Plan" which consists of training implementation plan (1. Concept of human resources development, 2. Issues of water supply, Needs of human resources, Training target, 3. Achievement of human resources development (The number of courses &amp; trainees, Comparison with State WASH strategy 2011-2016), 4. Training implementation structure, 5. Three year training plan (2014-2018) (The number of courses &amp; participants, Target number of trainees, Budget).</li> </ul>
<b>OUTPUT 3: Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&amp;M of water supply system of PSWCs.</b>	
3-1 DWSU and PSWCa establish monitoring units within the organization.	<ul style="list-style-type: none"> <li>Due to the organizational reform of the Ministry of Irrigation and Water Resources to Ministry of Water Resources in December 2011, and then to Ministry of Water Resources and Electricity in July 2012, there has been delay in establishment of the Monitoring Unit in DWSU. Mid-term review team made recommendation to urge the establishment of monitoring units.</li> <li>In response, DWSU and PSWC formulated new monitoring and evaluation units by assigning relevant personnel as below.</li> <li>DWSU and PSWC prepared term of references (TOR) for monitoring &amp; evaluation units.</li> </ul>

	Name of unit	Staff members	Established in												
	DWSU	Monitoring and Evaluation Department	5												
	Sennar SWC	Monitoring Follow-up and Evaluation Unit	9 SWC staff + Each locality/sector office monitoring officer												
	White Nile SWC	Monitoring and Evaluation Unit	10 SWC staff + Each locality/sector office monitoring officer												
3-2 DWSU develops the draft version of monitoring manual to be used by PSWCs.	<ul style="list-style-type: none"> <li>In Year 3, after the draft monitoring formats has been explained at the JCC meeting (2014.01.29), the 1<sup>st</sup> monitoring workshop was held for discussing and clarifying purpose of monitoring, monitoring items, monitoring format etc. (2014.02.05). Discussion was made on monitoring seminar involving international organizations (2014.02.25).</li> <li>In Year 4, Monitoring and evaluation unit members of DWSU/DWST conducted monitoring workshop in both PSWCs for preparing monitoring plan (1. monitoring of training, 2. SWCs' operational monitoring, 3. Monitoring of water supply facilities), visiting water supply facilities, making presentation of monitoring plan to DG, and clarifying roles of federal level and state level in monitoring process. (White Nile SWC: 2014.10.26-29, Sennar SWC: 2014.11.02-5) Based on the results of these workshop, draft monitoring manual was prepared.</li> <li>After completing results of Activity 3-4 in model sites, monitoring workshop was held in both PSWCs for revising monitoring plan, monitoring formats &amp; manual both for training and water yards. Participants also discussed how to strengthen monitoring structure for water yards with information flow from operators of water yards to sector offices (locality), to SWC monitoring unit and to DWSU. (Sennar SWC: 25-28 January 2015, White Nile SWC: 1-4 February 2015)</li> <li>As a result, water yard monitoring formats were developed for 1. Baseline survey, 2. Annual survey for SWC monitoring units, 3. Seasonal survey, 4. Monthly survey for SWC locality, and 5. Daily for operators.</li> </ul>														
3-3 PSWCs implement baseline survey on the O&M status of current water supply system.	<ul style="list-style-type: none"> <li>In Year 1, baseline survey was conducted at locality level in two pilot states.</li> <li>In Year 3, baseline survey on sanitation environment around water supply facilities was conducted.</li> <li>In Year 4, according to the PSWC monitoring plan, monitoring and evaluation unit members with relevant sector office staff in localities &amp; operators on sites have been collecting baseline information utilizing the monitoring manual with water yard monitoring sheets developed in Activity 3-2.</li> </ul>														
3-4 PSWCs regularly monitor the current situation of training implementation, examples identified in the State, and O&M of water supply system based on the draft of monitoring manual.	<p>(1) Monitoring for training implementation</p> <ul style="list-style-type: none"> <li>According to the monitoring plan ("Sennar SWC Monitoring Plan – Human Resources Development (Training)", "White Nile SWC Monitoring Plan – Human Resources Development (Training)"), both PSWCs regularly prepare and submit Training Monitoring Reports for training to DWST every 3 months.</li> <li>Both PSWCs developed "Training database" as well as "SWC staff database". PSWCs training coordinators monitor every course and update database accordingly.</li> </ul> <p>(2) Monitoring for water yard O&amp;M status</p> <ul style="list-style-type: none"> <li>Monitoring and evaluation unit members developed the following monitoring sheets for monitoring water yard O&amp;M status.</li> </ul> <table border="1"> <thead> <tr> <th>Name of format</th> <th>Purpose</th> </tr> </thead> <tbody> <tr> <td>Water yard monitoring sheet for baseline survey</td> <td>For SWC technical team to monitor baseline of 1. SWL/DWL, 2. Water tariff rate, 3. Water quality checkpoints, 4. Condition of the borehole, 5. Sanitary condition</td> </tr> <tr> <td>Water yard monitoring sheet for annual survey</td> <td>For SWC technical team to annually/seasonally monitor SWL/DWL, 1. Water tariff rate, 2. Water quality checkpoints, 3. Condition of the borehole, 4. Sanitary condition</td> </tr> <tr> <td>Water yard monitoring sheet for seasonal survey</td> <td>Sanitary condition</td> </tr> <tr> <td>Water yard monitoring sheet for monthly survey</td> <td>For SWC locality staff (Fee collector/O&amp;M team) to monthly monitor 1. Total condition of facility, 2. Condition of control panel, 3. Condition of tank, 4. Condition of distribution point</td> </tr> <tr> <td>Daily monitoring sheet for operators</td> <td>For Operator to daily record 1. Total condition of facility, 2. Condition of the pump, 3. Operating time (AM/PM), 4. Condition of the generator, 5. Total hours of operation (hour/day)</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>In Year 4, monitoring units in the pilot states prepared budget plan for the monitoring water yards in model sites in the selected locality of each state as below. Upon approval of the budget, monitoring team members started monitoring of water yard O&amp;M status in the model sites with participations by DWSU monitoring team members.</li> </ul> <p>&lt;Model sites for water yard monitoring in November 2014 - January 2015&gt;  [Singa locality of Sennar State] Number of target water yard: 116  [Tandalti locality of White Nile State] Number of target water yard: 114</p> <ul style="list-style-type: none"> <li>Monitoring units will conduct the same monitoring activities to cover the rest of the sectors/localities by January 2016.</li> </ul>			Name of format	Purpose	Water yard monitoring sheet for baseline survey	For SWC technical team to monitor baseline of 1. SWL/DWL, 2. Water tariff rate, 3. Water quality checkpoints, 4. Condition of the borehole, 5. Sanitary condition	Water yard monitoring sheet for annual survey	For SWC technical team to annually/seasonally monitor SWL/DWL, 1. Water tariff rate, 2. Water quality checkpoints, 3. Condition of the borehole, 4. Sanitary condition	Water yard monitoring sheet for seasonal survey	Sanitary condition	Water yard monitoring sheet for monthly survey	For SWC locality staff (Fee collector/O&M team) to monthly monitor 1. Total condition of facility, 2. Condition of control panel, 3. Condition of tank, 4. Condition of distribution point	Daily monitoring sheet for operators	For Operator to daily record 1. Total condition of facility, 2. Condition of the pump, 3. Operating time (AM/PM), 4. Condition of the generator, 5. Total hours of operation (hour/day)
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3-5 DWSU and DWST analyze and evaluate the monitoring result and give feedback	<p>(1) Monitoring of training implementation</p> <ul style="list-style-type: none"> <li>In Year 3 and Year 4, Monitoring Unit of DWSU have disseminated information of monitoring activities for training implementation (Activity 3-1 – 3-5) to other states through JCC meetings and Joint Seminar.</li> </ul> <p>(2) Monitoring for water yards</p> <ul style="list-style-type: none"> <li>DWSU and PSWCs monitoring unit staff members have been planning to present the results of the monitoring of water yards in Activity 3-4 at the JCC meeting in March 2015.</li> </ul>														

such as lessons learned and good practices etc. to SWC monitoring unit.	<ul style="list-style-type: none"> <li>Based on “Monitoring Plan - Water Supply Facility (Water Yard)” and “Monitoring Manual – Water Yard”, it is planned that data collected on site by SWC sector/locality office will be accumulated at PSWC monitoring units. Monitoring &amp; Evaluation units will conduct monthly survey and annual monitoring (twice a year) and submit the results to DWSU monitoring &amp; evaluation department in every six months (February and August).</li> </ul>				
3-6 DWSU maintains and manages monitoring data at information center.	<p>(1) Monitoring of training implementation</p> <ul style="list-style-type: none"> <li>Utilizing monitoring format for capturing changes in training capacities which was developed in Phase 1. DWST continues maintaining monitoring data of training implementation through Phase 2. The same staff members are assigned for the Information Center and Monitoring and Evaluation department of DWSU and manage monitoring data on training implementation.</li> </ul> <p>(2) Monitoring for water yards</p> <ul style="list-style-type: none"> <li>According to the “Monitoring Plan - Water Supply Facility (Water Yard),” as in Activity 3-5, DWSU will receive monitoring data of water yards from PSWCs in every 6 months (February and August) and maintain at the database in DWSU. This database can be utilized to maximize the mobilization of available equipment &amp; materials such as provided by donors so that DWSU can deliver them to adequate locations in various states.</li> </ul>				
3-7 DWSU finalizes monitoring manual based on the evaluation of monitoring of training courses and O&M of water supply system.	<ul style="list-style-type: none"> <li>As in Activity 3-2, DWSU with technical advice by JICA Experts, drafted the monitoring manual (2014.01). After a series of monitoring workshop held in February 2014, October -November 2014 and February 2015, the monitoring manual has been finalized.</li> <li>DWSU will distribute “DWSU Monitoring manual - Water Yard. March 2015” and “DWSU/DWST Monitoring manual – Human Resources Development (Training). March 2015” to all SWCs. (planned for March 2015)</li> <li>In addition, based on the results of monitoring activities in model sites as in Activity 3-4, both PSWCs monitoring &amp; evaluation units formulated “Action Plan – Water Yard Rehabilitation” in February 2015 for the water yards with high priorities to be fixed (10 in Tendalty locality, White Nile state, 14 in Singa locality, Sennar state).</li> </ul>				
<b>OUTPUT 4: Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST.</b>					
4-1 DWST develops Human Resources Development Manual to each SWC based on the outputs of 1, 2 and 3.	<ul style="list-style-type: none"> <li>DWST started to create human resources development manual along with “Mid-term/long-term human resources development plan 2012-2026”. DWST is planning to finalize the manual by March 2015 and distribute it to all SWCs.</li> </ul>				
4-2 Each SWC (excluding PSWCs) establishes training unit within the organization.	<ul style="list-style-type: none"> <li>Each SWC established training centers as below. Since the beginning of the Phase 2 of the Project (November 2011), new training centers were established in White Nile state (November 2011), Sennar sate (April 2012), Northern state (March 2013), River Nile state (January 2014), Gezira state (December 2012), North Kordofan (April 2014), and 3 centers, which supported by UNICEF WES project, in South Kordofan, West Darfur state and South Darfur sate.</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Established (including centers under the renovation)</th> <th style="text-align: center;">Not established</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;">1. White Nile state (Pilot site), 2. Sennar state (Pilot site), 3. Northern state, 4. River Nile state, 5. Gezira state, 6. Gadaref state, 7. Kassala state, 8. North Kordofan state, 9. Red Sea state (under renovation), 10. South Kordofan state, 11. North Darfur state, 12. West Darfur state, 13. South Darfur state, 14. Blue Nile state (under renovation)</td> <td style="vertical-align: top;">1. Central Darfur state (separated from West Darfur in January 2012) 2. East Darfur state (separated from South Darfur in January 2012) 3. West Kordofan state (separated from South Kordofan in February 2013, planning for establishing a training center)</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>Equipment for training courses were provided for Northern state, River Nile state, Gezira state, Gadaref state and Red Sea state in addition to 2 pilot states (Annex 2-5: List of Equipment procured under the Project).</li> </ul>	Established (including centers under the renovation)	Not established	1. White Nile state (Pilot site), 2. Sennar state (Pilot site), 3. Northern state, 4. River Nile state, 5. Gezira state, 6. Gadaref state, 7. Kassala state, 8. North Kordofan state, 9. Red Sea state (under renovation), 10. South Kordofan state, 11. North Darfur state, 12. West Darfur state, 13. South Darfur state, 14. Blue Nile state (under renovation)	1. Central Darfur state (separated from West Darfur in January 2012) 2. East Darfur state (separated from South Darfur in January 2012) 3. West Kordofan state (separated from South Kordofan in February 2013, planning for establishing a training center)
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4-3 DWST implements Joint Seminar(s) to share and disseminate the	<ul style="list-style-type: none"> <li>Through participating in Joint Seminar, SWCs staff members from different states were able to gather and visit at training centers in other states and discuss issues on training, as well as exchange information. At the same time, by hosting the event in their training centers, SWCs were able to promote their activities to stakeholders not only within the state but also from other states.</li> </ul>				

outputs of PSWCs' activities, and distribute Human Resource Development Manual to each SWC.		Date	Place	Topic			Participants																																																										
	1	2012.04.18	Sennar SWC	• Significance of activities in pilot state training centers presented by JICA experts			41 persons (Sennar state, White Nile state)																																																										
	2	2012.11.10	Gezira SWC	• Gezira SWC training center activities and facilities			22 persons (DWST (3), White Nile state (4), Sennar state (2), Northern state (1), Gezira state (8), JICA experts (4))																																																										
	3	2013.02.11	White Nile SWC	• Information exchanges of establishment of the training centers, training course implementation, clarification of roles of the central level and the state levels, request for the central level			30 persons (DWST, Gezira state, Red Sea state, Sennar state, North Kordofan state, White Nile state, JICA experts)																																																										
	4	2013.11.17	White Nile SWC	• White Nile SWC training center maintenance framework • Best training center award for Gezira SWC training center • Presentation by training center directors of DWST, White Nile SWC, Sennar SWC, Kassala SWC, Gezira SWC on characteristics of their centers, training activities and issues			50 persons (DWST, Gezira state, Kassala state, Sennar state, Blue Nile state, North Kordofan state, South Kordofan state, West Darfur state, Hawata Project)																																																										
	5	2014.04.28	North Kordofan SWC	• North Kordofan SWC training facility • Best training center award for Gezira SWC training center • Reporting of water supply issues and training center activities by North Kordofan state, Northern state, River Nile state, North Darfur state, Sennar state			70 persons (DWST, Northern state, River Nile state, Red Sea state, Gezira state, Sennar state, North Kordofan state, South Kordofan state, North Darfur, Hawata Project)																																																										
	6	2014.11.27	Northern SWC	• Northern SWC training center management • Gedaref SWC training activities and collaboration with international organizations • South Darfur SWC human resources development • Sennar SWC training outputs and future plan (training activities, monitoring activities, action plan after the Project period) • North Kordofan SWC training management (participatory community development through water) • Gezira SWC monitoring water resources management, Water Atlas activities • Collaboration framework with DWST			40 persons (Northern state, Dongola Univ., River Nile state, White Nile state, Sennar state, Gedaref state, Red Sea state, North Kordofan state, Gezira state, Hawata project, West Darfur state, South Darfur state)																																																										
	7	2015.08-09 (plan)	DWST	• Discussion on assessment of the training centers established in each state, activities for future etc.																																																													
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North Kordofan state (65)	⊙	25	516	95,000	528,212	- Plan for 2015: 39 training courses (target: 1,380 trainees), Establishing mineral water factory, Construction of T/C dormitory, Construction of mini water yard, Initiating the Community Leadership Total Sanitation (CLTS) in basic schools
South Kordofan state (153)	⊙	-	-	-	-	
West Kordofan state (17)	▲	-	-	-	-	
South Darfur state (124)	⊙	0	0	-	-	- OJT is implemented by support of UNICEF - 5 courses planned for 2015-16
West Darfur state (119)	⊙	1	30	20,000	60,000	- Plan for 2015: 9 courses (water quality, database, reporting skills)
East Darfur state (35)	×	-	-	-	-	
Central Darfur state (44)	×	-	-	72,000	210,800	Actual for 2014: 7 training (geophysical study, water quality, pump operators, community mobilization, hand pump mechanic, chlorinators, IWRM) for 245 persons Plan for 2015: 13 training (water facility management, community base operation and maintenance, pump operators, hand pump mechanic, chlorinators, solar systems technology, raising awareness of the decision makers, drilling procurement skills, human resources and accounting, mentoring and evaluation, water harvesting, IWRM) for 587 persons
North Darfur state (108)	⊙	1	30	100,000	700,000	Plan for 2015: ToT training for 125 persons
Khartoum state (38)	⊙	-	-	-	-	

\*Budget figures for some SWCs are for the whole SWC budge (not only for training budget)  
Source: Documents prepared by DWST & JICA Experts, SWCs' response to the questionnaire

## List of Meetings

### (1) Joint Coordinating Committee Meeting

	Date	Topics	Participants
1	2011.12.15	- Project activities - Amendment of PDM	38 (PWC, PWCT, South Darfur SWC, North Darfur SWC, West Darfur SWC, Red Sea SWC, White Nile SWC, Northern SWC, North Kordofan SWC, River Nile SWC, El Gezira SWC, Blue Nile SWC, Kassala SWC, Khartoum SWC, Ministry of Water Resources, Ministry of Finance, Embassy of Japan, JICA Sudan Office, JICA Experts)
2	2012.06.27	- Achievement of Year 1 activity - PDM - Mid and Long term Human Resources Development Plan	40 (PWC, PWCT, Northern SWC, West Darfur, North Darfur SWC, River Nile SWC, South Darfur SWC, South Kordofan SWC, North Kordofan SWC, Blue Nile SWC, Red Sea SWC, Kassala SWC, White Nile SWC, Sennar SWC, Gadaref SWC, El Gezira SWC, El Hawata W.C., MIC, Embassy of Japan, JICA Sudan Office, JICA Experts)
3	2012.11.08	- Work plan for Year 2	37 (White Nile SWC, North Darfur SWC, Northern SWC, White Nile SWC, South Darfur SWC, Sennar SWC, South Kordofan SWC, River Nile SWC, El Gezira SWC, Kassala SWC, Red Sear SWC, West Darfur SWC, UNOPS, Embassy of Japan, JICA Sudan Office, JICA Experts)
4	2013.04.30	- Amendment of PDM according to the change from PWC to DWSU, PWCT to DWST,	34 (PWC, PWCT, White Nile SWC, North Darfur, Northern SWC, White Nile SWC, North Kordofan SWC, South Darfur SWC, Sennar SWC, South Kordofan SWC, Sennar SWC, River Nile SWC, El Gezira SWC, Kassala SWC, Red Sear SWC, West Darfur SWC, UNOPS, Embassy of Japan, JICA Sudan Office, JICA Experts)
5	2013.10.31	- Year 3 work plan and issues to be solved - Amendment of PDM	43 (DWSU, DWST, Northern SWC, River Nile SWC, Gedaref SWC, Red Sea SWC, Sennar SWC, White Nile SWC, North Kordofan SWC, Blue Nile SWC, South Kordofan SWC, West Kordofan SWC, North Darfur SWC, West Darfur SWC, South Darfur SWC, Central Darfur SWC, East Darfur SWC, El Hawata W.C, UNOPS, Embassy of Japan, JICA Sudan office, JICA experts)
6	2014.01.29	- Reporting of the Mid-term review of the Project - Amendment of PDM - Discussion on the monitoring format	45 (DWSU, DWST, Northern SWC, Khartoum SWC, Kassala SWC, Sennar SWC, White Nile SWC, North Kordofan SWC, Blue Nile SWC, North Darfur SWC, South Darfur SWC, Central Darfur SWC, East Darfur SWC, El Hawata W.C, UNOPS, Embassy of Japan, JICA Sudan office, JICA experts)
7	2014.05.28	- Achievement of Year 3 activities and issues to be solved - Community development approach - Result of the training in Morocco - New training center - Handing over of the equipment	44 (DWSU, DWST, Northern SWC, Gedaref SWC, Kassala SWC, Red sea SWC, Sennar SWC, White Nile SWC, North Kordofan SWC, Blue Nile SWC, South Kordofan SWC, West Kordofan SWC, North Darfur SWC, West Darfur SWC, South Darfur SWC, Central Darfur SWC, East Darfur SWC, El Hawata W.C., UNOPS, Embassy of Japan, JICA Sudan office, JICA experts)

## ANNEX 3: Results of the evaluation

### 3-2 Evaluation by Five Criteria

#### Verification of Performance & Implementation Process

	Evaluation questions		Survey Results
	Main Questions	Sub-Questions	
Verification of Performance	Is the Input allocated as planned?	<Japan>	
		Have Japanese Experts been dispatched as planned?	Japanese experts were dispatched as planned. (see Annex 2-1: Placement records of Japanese experts)
		Have necessary equipment been installed / provided as planned?	Necessary equipment mostly for training activities have been installed and provided as planned. The plan of A/C installation which was originally procured for the new Kilo Ten training center, was changed due to the delay in construction by the Sudanese side. DWSU and JICA Experts decided to set them up temporarily in the existing training center building instead. (See Annex 2-4: List of equipment procured under the Project)
		Is there any problem in availability and maintenance of equipment?	Trained C/Ps appropriately maintain equipment procured by the Project. (See Annex 2-4: List of equipment procured under the Project)
		Was the C/P Training implemented as planned?	Training in Morocco was planned and implemented for C/Ps as planned. (See Annex 2-2)
		What is provided as local cost by Japanese side?	Total amount of 3,118,466 SDG are provided for activity costs by Japanese side. (See Annex 2-3: Local cost from Japanese side)
		<Sudan>	
		Were the C/P and management staff appointed as planned?	Placement of C/Ps by DWSU, DWST, and both PSWCs are completed in Year 3 when personnel for newly formulated monitoring and evaluation units were appointed. (See Annex 2-5: Placement records of Sudanese counterparts)
	Were the Project office, furniture, communication network, and facilities equipped as planned? Was the Kilo ten training center built?	DWST and PSWCs provided project office space with furniture and communication network. Kilo Ten Training Center of DWSU which was supposed to be built in the early stage of the Project is still under construction due to delay in financing.	
	Have the Outputs been produced as planned? (Compare with target indicator)	[Output1] Training courses are implemented by DWST based on its midterm/ long-term human resources development plan. <Indicator1-1>Mid-term/long-term human resources development plan is completed by March 2013. <Indicator1-2>Percentage of contributions from training coordinator on the planning and implementation of training courses increases by 100%. <Indicator1-3>Training courses at DWST are implemented more than 20 times annually.	<Indicator 1-1>: Based on “Quarter Century Strategy for Water Supply 2011-2031” , DWST prepared the outline of the “Mid-term and Long-Term Human Resources Developments Plan 2012-2026.” JCC discussed and approved it at the 2nd JCC meeting on 27 June 2012. In February 2015, DWST submitted the final draft of the plan to the Federal Ministry of Water Resources and Electricity (MoWRE). Once the MoWRE approves it, DWST will submit the final version to the Federal Ministry of Human Resources Development (MoHRD) for approval and issuing the certificate of authorization by August 2015. <Indicator 1-2>: By the Mid-term review in January 2014, it has been confirmed that contribution rates of the DWST training coordinators reached 100%. <Indicator 1-3>: DWST implemented training courses for 18 times in 2011, 21 times in 2012, 28 times in 2013, and 23 times in 2014.
[Output2] Training course implementation structures in PSWCs are developed by PSWCs in collaboration with DWST. <Indicator 2-1>Percentage of contributions from training coordinators on the planning and implementation of training courses is increased by 80% in the PSWCs <Indicator 2-2>Training courses are implemented according to the SWC training implementation plan.		<Indicator 2-1>: By the end of Year 3, contribution rates of the training coordinators reached 86.4% for White Nile SWC and 85.8% for Sennar SWC. <Indicator 2-2>: According to the annual training implementation plan prepared, each PSWC have implemented the more courses than the previous years. White Nile SWC: 7 courses (8 times) in 2012, 8 courses (9 times) in 2013, 8 courses (12 times) in 2014 Sennar SWC: 6 courses (9 times) in 2012, 13 courses (17 times) in 2013, 11 courses (14 times) in 2014	
[Output3] Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&M of water supply system of PSWCs. <Indicator 3-1>Monitoring manual is completed by March 2015. <Indicator 3-2>Monitoring activities are implemented according to schedule.		<Indicator 3-1>: “DWSU Monitoring Manual – Water Yard” and “DWSU/DWST Monitoring Manual – Human Resources Development (Training)” have been created by March 2015 and will be distributed to all SWCs in the JCC meeting. <Indicator 3-2>: (1) Training implementation: Monitoring activities for training implementation have been conducted by DWST and PSWC along with their annual training plan. (2) O&M of water supply system (Water yards): Based on the monitoring format developed, PSWCs conducted monitoring activities of the water yards in model sites: 114 site in Tendalty locality, White Nile state and 116 sites in Shinga locality, Sennar state (2015.02).	
[Output4] Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST. <Indicator 4-1>Human resources development manual is		<Indicator 4-1>: DWSU started developing the “DWSU Human Resources Development Manual” along with “Mid-term and Long-Term Human Resources Developments Plan 2012-2026.” DWSU is planning to finalize the manual by March 2015 and distribute it to all SWCs. <Indicator 4-2>: Joint seminar has been implemented 6 times by November 2014 and planned for the 7th seminar in August or September 2015 for sharing outputs of PSWCs as well as achievement of other newly established SWC training centers. (Annex 3-1: Activity 4-3)	



	completed by March 2015. <Indicator 4-2>Joint Seminar to share and disseminate the outputs of PSWCs are implemented 6 times.		
Are there prospects that the Project Purpose will be achieved?	"Human resources in water supply sector are properly trained in Sudan." Indicator 1: The number of trainees that are trained in Sudan exceeds 2000. Indicator 2: The number of annually maintained water yards is increased to more than 20 in each PSWC.	Indicator 1: Total number of training participants reached 1,629 in DWST and 625 in PSWCs as of January 2015. Thus in total, the number of trainees who were trained in Sudan exceeds 2,254. (Annex 3-1: Activity 1-4) Indicator 2: Renovation and maintenance of the water yards (pump, control panel, generator, well rehabilitation, water tap, elevated tank, pipes, and others) have been conducted for more than 20 in each PSWC in Year 4 as below. Sennar state: 32 sites (57 items) in 6 localities (2014.10.01-2015.02.02) White Nile state: 48 sites (85 items) in 3 localities (2014.10.02-2015.02.20)	
Are there prospects that the Overall Goal will be achieved?	"Water supply system is properly managed in Sudan." Indicator 1: SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities.	<ul style="list-style-type: none"> <li>- Trainees of well management, electrical management, mechanical management, equipment management and pipe network management engage in rehabilitation of borehole (air lift), pumps, control panels, generators, elevated tanks and pipes during and after the courses.</li> <li>- Trainees of community development involved in rehabilitation of water yard environment during the training.</li> <li>- Ex-trainees of pipe network management engage in rehabilitation of pipes as well as designing of distribution network.</li> <li>- Ex-trainees of water quality management revised water analysis database both for water treatment plant and water yards as well as the reporting format for analysis results.</li> <li>- Ex-trainee of database management and GIS/Remote sensing developed database of water facilities, water yards, alarming system for rehabilitation needs, consumption of electricity for operating water facilities and customer account as well as administrative and personnel information of the sector.</li> </ul>	
Verification of Implementation Process	Are activities implemented as planned?	Have the Project activities been implemented in line with the initial PO? What are the reasons of the changes in plan on activity implementation? Has the change in PO been processed adequately? How are the progress of the activities which had been implemented differently from the original PO?	Project activities have been implemented in line with the initial PO for Output 2 & 4. However, there are some changes in pre-condition for Output 1 & Output 3 as below. Output 1: Due to delay in construction of the new training center by DWSU, which was indicated as Sudanese side in puts in PDM, DWST has to continue implementation of training courses in the existing facilities. Output 3: Due to delay in formulation of monitoring units, monitoring activities for water yards under Output 3 were implemented after DWSU & PSWCs assigned their staff members to monitoring units in Year 3. Changes in PO have been processed adequately according to the amendment of PDM upon recommendation made by the Mid-term Review mission. Output 1: Regardless of the delay in construction of the new training center, DWST has achieved Output 1. Output 3: PSWCs have been implementing monitoring activities of water yards in the model sites in Year 4. The results have been reflected to the monitoring plan for the entire state and the monitoring manual.
	Is there any problem in the transfer method for skill/ knowledge/ techniques?	What is a major point in measures of technology transfer?	<ul style="list-style-type: none"> <li>- Utilizing multiple resources developed in Phase 1, techniques and knowledge necessary for the water supply system management were gained by the participants from all over the country through training courses in DWST and PSWC.</li> <li>- Starting from Phase 1, SWCs (e.g. Kassala state, Gezira state) have involved in the expansion of the technical transfer through dispatching their staff members as training course instructors to DWST and PSWCs.</li> <li>- Information and opinion exchange opportunities have increased among C/Ps through DWST training and the Joint Seminar.</li> <li>- Training in Morocco and dispatch of experts from Morocco have led to mutual effects both on Sudanese side and Moroccan side.</li> <li>- Mutual effects have been identified through collaboration with other JICA technical cooperation projects and JOCV.</li> <li>- "The Project for improvement of water treatment plant in Kosti city" collaborates with survey in the target areas. Kosti special training has been conducted for C/Ps of the grant project so as to increase capacities in management of mechanics, equipment and electricity.</li> </ul>
		Is there any problem in contents of technology transfer?	There is no problem in contents of technology transfer. For future, training topics shall be added in response to changes in needs and further improvement of the water supply sector in each state.
		Have the concept of training implementation framework, budget proposal, training contribution measurement etc. been understood by the C/Ps?	<ul style="list-style-type: none"> <li>- Concept of training management cycle and the evaluation method which were developed in DWST in Phase 1 have been modified and utilized by C/Ps at PSWCs.</li> <li>- In Phase 1, DSWT analyzed training costs and developed budget planning method which has been continuously used by DWST C/Ps.</li> <li>- At the PSWCs, C/Ps are able to accurately manage budget planning and especially in Year 3 &amp; 4, timely disbursement by state governments, which understand the importance of human resources development activities. As a result, the planned training courses are implemented as planned.</li> <li>- DWST issues the certificate for the trainees with high technical levels in order to encourage trainees' participations and their work.</li> </ul>
Is there any problem in the project management system?	<ul style="list-style-type: none"> <li>- Communication level between JICA Sudan Office and the Project</li> <li>- How is the Project monitored?</li> <li>- How did the Project improve by monitoring?</li> </ul>	Through JCC meetings, series of the Joint Seminar and regular meetings of SWC DGs with DWSU and DWST, communication among counterparts have been activated. In addition, foundation of relationship among C/P organizations had already developed through Phase 1 since most of the training center directors of SWCs participated in the series of the training courses in DWST during Phase 1. JICA Sudan Office has involved in Project activities such as JCC, Joint Seminar and Training in Morocco etc.	

Does the project have a high recognition in the implementing agency, C/P, and Target Groups?	Level of recognition of DWSU, DWST, SWCs and target groups toward the Project activities?	Through the Phase 1 and Phase 2, DWSU and DWST staff members highly recognize the Project activities. SWCs are also highly recognize the Project as reflected in the establishment and operations of training centers in 14 states and the active participations by all SWCs in JCC, Joint Seminar and training activities. In the Phase 1, executive staff members and engineers of SWCs were core targets of the capacity development on series of training courses at DWST. They were responsible to disseminating their trained skills and knowledge to their colleagues. In Phase 2, once they established training centers, they became directors of these centers. Some of them became the Director General of SWC.
	Level of participation of DWSU, DWST, SWCs to activities	
Were C/Ps assigned as planned?	Are the C/Ps of DWSU, DWST, and SWCs appointed as planned?	C/Ps of DWSU, DWST and SWCs were appointed mostly as planned and with some delay for establishment of monitoring and evaluation department/units of DWSU and PSWCs which members were assigned in Year 3.
	Was C/P of DWSU, DWST, and SWC appropriate in terms of number, position, and capacity?	C/Ps were assigned appropriately by DWSU, DWST and SWCs in terms of number, position, and capacities. (See Annex 2-5: Placement record of Sudanese counterparts) Especially those who were trained in the Phase 1 played the significant roles as the training center directors of SWCs as well as training instructors and coordinators for various courses (e.g. water analysis, organizational management, well management, electrical/equipment/mechanical management, data management, water treatment plant, pipe network management) in PSWCs.
	To what extent does the Project involve other stakeholders than T/G?	Through training activities and Joint seminar, other local organizations (e.g. Hawata water corporation, women's association) besides SWCs involved in the Project as trainees. International organizations collaborated with DWST in human resources development in the water supply sector.
Did any other problems occur during the process of implementing the project? What is the cause?	What was the problem if there is any?	Major issues occurred during the process of implementing the Project were pointed out by the Mid-term review team. DWSU, DWST, SWCs responded to those issues based according to the recommendation by the Mid-term review team as below.
	What was the cause of the problem?	
	How has the project dealt with such issue (s) if any?	
How did the recommendation of the Mid-term Review been utilized?	1) Construction of a new Kilo Ten training center	With attempt of DWSU to solve the funding issues for construction of Kilo Ten training center, there had been discussion among relevant parties of DWSU and the donor. However, the construction of the training center building is unlikely to complete within the Project period.
	2) Assigning a sanitation expert in DWSU	DWSU newly assigned sanitation coordinator in June 2014. MoWRE and MoH had discussion to clarify their roles in sanitation management at the community level.
	3) Establishing monitoring units	DWSU and PSWCs formulated monitoring and evaluation department/units with allocation of current staff members in December 2014.
	4) Develop business mind and management capacities	- Shinga sector director of Sennar state introduced various database to the sector office including clients' data of electricity consumption and tariff collection, consumption of electricity to run water yards, alarming system to record about facilities in needs of rehabilitation. - Northern SWC training center has planned to utilize training facilities for income generating through providing car maintenance and repairing services as well as through vocational training.
	What changes were brought about from the revision of PDM in indicators of the project purpose & outcomes and important assumption to achieve the overall goal?	After amendment of PDM (to Version 5.0), indicators of the Outputs were better clarified among counterparts to match the actual condition. As a results, activities especially under Output 3 have been accelerated in terms of monitoring of the water yards by PSWCs.

Evaluation results by 5 evaluation criteria

	Evaluation Questions		Survey Results
	Main Questions	Sub-Questions	
RELEVANCE	Needs	Is the Project in line with the issues & needs of the Water Supply Sector of Sudan?	As stated in IPRSP, the key challenges in the area of safe water provision in Sudan include 1) inadequate sector policies, plans, implementation and coordination, 2) lack of resources for investment in conservation, water quality and monitoring, 3) lack of community awareness of water supply & sanitation issues, and 4) the poor record of sustainability of interventions for which DWSU, DWST and SWCs with localities are responsible. And training courses in DWST and PSWCs were designed based on needs and issues of each state identified through the Project activities.
		Is the Project in line with the needs of the C/Ps in DWSU, DWST, and SWCs?	
	Priority	Is the project purpose "Human resources in water supply sector are properly trained in Sudan." in line with the development policy/plan of Sudan?	The Project purpose is in line with "Quarter Century Strategic Plan for Water Supply (2007-2031)", "Water Sanitation and Hygiene (WASH) sector policy (2010)", "Water Sanitation and Hygiene Sector Strategic Plan (2011-2016)", "Sudan Interim Poverty Reduction Strategy Paper (IPRSP) (2012)".
		Is the project consistent with Japan's country strategy for Sudan?	Japanese development assistance policy for Sudan is to contribute on promoting sustainable peace through improvement of basic infrastructure and poverty reduction. Improvement and maintenance & management of the water and sanitation infrastructure is one of the priorities. And the Project is identified as the part of the "Water and Sanitation Support Program, which aims to strengthen water & sanitation facilities and management capacities as well as improvement of public service of the water supply sector.
	Project's strategy & approach	Is there any mutual effect by collaborating with other JICA projects and scheme (JOCVs, Third Country Training Program, Grant etc.)?	Mutual effects have been identified through collaboration with other JICA Projects and schemes as below; "Capacity development project for the provision of services for basic human needs in Kassala", "Project for Human Resources Development for Darfur and the Three Protocol Areas", "Frontline maternal and child health empowerment project phase 2", "Project for improvement of water treatment plant in Kosti city", JOCV (Electric/Electronics) for implementation of the training courses in PSWCs, and Training in Morocco and dispatch of experts from Morocco.
		Is the selection of C/P and target groups appropriate?	It was appropriate to select White Nile state and Sennar state for pilot states in term of their locations next to each other and convenience, as well as their organizational characteristics of administration and enthusiasm.
		Is the approach adopted by the Project appropriate for the Project Purpose?	The Project adopted appropriate approaches of strengthening the training structures of DWST and PSWCs, and establishing the monitoring system for training implementation and O&M of water supply facilities (water yard) in order to achieve proper training of human resources of the water supply sector.
		Is there any mutual effect by collaborating with other development partners?	UNOPS, AfDB and IOM, which implement programs in Darfur states, South Kordofan state, West Kordofan state, and Abyei administrative area, have dispatched beneficiaries of the programs to the training courses in DWST. These collaborations resulted in expansion of DWST's outreach services at the central level to those state difficult to travel in. Through community development and sanitation management training courses, collaboration has been made with WES office supported by UNICEF.
	Japan's advantage in technology and experiences	Has Japanese experience in the water supply sector been utilized in this project?	Japanese ODA to Sudan in the water supply sector started in the 70s utilizing its technical expertise for rehabilitation of water supply facilities etc. In addition, the Project utilized resources of Moroccan water resources management authorities which achieved development the water supply system with involvement of technical cooperation by JICA since the 80s.
	Other points (changes after Mid-term review)	Is there any change in Japan's development policy for Sudan?	There is no change in Japan's development policy for Sudan (issued in December 2012) and the rolling plan (issued in April 2014) which includes assistance for the water and sanitation sector
		Is there any change in policies of Sudan for the water supply sector?	There is no change in policies of Sudan for the water, sanitation and hygiene sector after the Mid-term review in January 2014.
		Is there any significant economic & social change in Sudan?	- After the Mid-term review in January 2014, there is no significant economic and social change. Sudanese economy has still been in recession after losing three-quarters of its oil production associated with the secession of South Sudan in 2011. Government of Sudan has continued austerity measures. - Conflicts in Darfur states, South Kordofan state, and the Blue Nile state have been affecting livelihood of the population in these areas.
EFFECTIVENESS	Achievement forecast for the Project Purpose	Did the number of trainees that are trained in Sudan exceed 2000? (Indicator 1)	By the end of 2014, total number of training participants reached 1,629 in DWST and 941 in PSWCs. Thus in total, the number of trainees who were trained in Sudan exceeds 2,254.
		Did the number of annually maintained water yards increase to more than 20 in each PSWC? (Indicator 2)	Renovation and maintenance of the water yards (pump, control panel, generator, well rehabilitation, water tap, elevated tank, pipes, and others) have been conducted for more than 20 in each PSWC in Year 4 as below. - Sennar state: 32 sites (57 items) in 6 localities (2014.10.01-2015.02.02) - White Nile state: 48 sites (85 items) in 3 localities (2014.10.02-2015.02.20)
	Achievement of Outputs	Have 4 Outputs been achieved (will be achieved)?	All indicators of Output 1, Output 2, Outputs 3 and Output 4 have mostly been achieved by the time of the terminal evaluation and will be fully achieved by the end of the Project period.
	Causal relations between Outputs and Project Purpose	Has the Outputs led the proper training of human resources in water supply sector in Sudan?	All of the 4 Outputs have led to the improvement in training quality for human resources in the water supply sector in DWST, PSWCs and other SWCs with training center, as well as improvement of capacities in monitoring water yards O&M status in pilot states.
What were the contributing factors besides Outputs for achievement of the Project Purpose?		Training in Morocco and collaboration with international organizations and other JICA projects made DWSU & DWST possible to provide outreach training services and information sharing opportunities to SWCs staff members in distance especially in those areas where security conditions are unstable.	

	Constraints to achieve Project Purpose	What were the constraints for proper training of human resources in water supply sector in Sudan?	As in PDM, the pre-condition for the project framework includes “Political conflicts do not occur.” On the other hand, in 5 Darfur states, South Kordofan state, West Kordofan state, and Blue Nile state where conflicts persist, there has been limitations for achieving the Project Purpose in comparison with other states with stable security condition. Due to travel limitation of DWST staff as well as travel restrictions of JICA Experts to these areas, it has been hindering the Project to provide on-site technical transfer directly by DWST and JICA Experts.
	Are the important assumptions still appropriate?	Have the necessary budget, personnel, equipment, etc. been provided in a timely and appropriately?	DWST and PSWCs allocated necessary training budget annually with slight delay in disbursement. As mentioned in “Inputs from Sudan” above, there have been delay in formulation of monitoring and evaluation units and construction of new Kilo Ten training center.
		Is there any influence on the attainment of the Project purpose?	
	Utilization of lessons from other JICA projects and scheme and other development partners.	What has the Project learnt from other JICA projects/programs?	<ul style="list-style-type: none"> <li>- Training in Morocco and dispatch of experts from Morocco brought about initiation of South-South cooperation between Sudan and Morocco in human resources development of the water supply sector. Morocco was selected as the partner of the Project because of their significant achievement in water supply sector development also with technical cooperation by JICA since the 90s. Relevant C/Ps in Sudan gained knowledge and skills through lessons shared with the Moroccan water supply authorities.</li> <li>- “Capacity development project for the provision of services for basic human needs in Kassala” shared its resources through dispatch of training instructors from Kassala SWC in well management, water tariff collection, urban water supply etc.</li> </ul>
EFFICIENCY	Achievement level of the Output	Have four Outputs achieved?	All indicators of Output 1, Output 2, Outputs 3 and Output 4 have mostly been achieved by the time of the terminal evaluation. Output 1, Output 2, Output 4 will be fully achieved by the end of the Project period. On the other hand Output 3 could have achieved more if activities started earlier than Year 3.
	Inputs from Japan	Have the Japanese Experts been dispatched appropriately in terms of its number, expertise, and timing?	<ul style="list-style-type: none"> <li>- Inputs from the Japanese side were appropriate in terms of number, expertise, and timing of dispatching experts and providing equipment. Regarding Output 3, in order to adopt the developed monitoring structure at the state level to cover both training implementation in PSWCs and O&amp;M of water supply facilities for the entire states, the longer term and the larger inputs are necessary.</li> <li>- Equipment procured by the Project are utilized through the training courses at DWST and SWCs.</li> <li>- A/C installation plan which was originally for the new Kilo-ten training center was changed due to the delay in construction. DWSU and JICA Experts decided to install them temporarily in the existing center.</li> </ul>
		Have the procurement & installment of the equipment conducted appropriately in terms of its number and timing? Have they been utilized?	
	Inputs from Sudan	Have C/Ps and operations staff been allocated appropriately?	<ul style="list-style-type: none"> <li>- C/Ps and operations staff have been allocated in the timely manner to cover Output 1, 2, &amp; 4 activities. Because of delay in formulation of the monitoring units, there was delay in allocation of C/Ps specifically for monitoring activities under Output 3 till Year 4.</li> <li>- DWST and PSWCs provided project office space, training facilities and necessary expenses appropriately for operation of the planned activities.</li> </ul>
		Have the work conditions and necessary inputs of the activities been provided/ installed appropriately?	
		Has the construction of Kilo Ten Training Center been conducted as planned?	Construction of the new training center has been delayed because of contracting issue with the failure of the tender as well as funding arrangement.
		Have DWSU, DWST, and SWCs allocated budget for the Project activities in the target areas as planned?	DWSU, DWST and SWCs allocated necessary budget for the Project activities from their annual training budget as planned.
	Cost	Have the Output been achieved to appropriate level in terms of cost?	All of the outputs are expected to be achieved to the appropriate level within the Project period. However, it has been recognized that more resources and time are necessary for SWCs to adopt and functionalize the monitoring system for O&M of the water facilities (water yard) in the entire state.
	Causal relations	Were the activities sufficient to produce Outputs?	Activities have been implemented sufficiently by DWSU, DWST and PSWCs as well as other SWCs to produce all of the 4 outputs.
		How was the process to produce Outputs?	Regardless of the delay in delivery of inputs as mentioned above, all the activities contributed to produce 4 outputs.
Are there any approach (activity) more efficient than actual?		If the training activities could implemented in the larger scale at the new training center, DWST could apply new curriculum with upgraded capacities in term of human resources and facilities.	
Contributing/ Hindering factors to achievements of the Outputs	<p>Is there any contributing factor for the achievement of the Outputs?</p> <ul style="list-style-type: none"> <li>- Utilization of equipment/ facilities/ trained human resources by the former/ similar projects</li> <li>- Was there any collaboration with other JICA projects and projects by other donors?</li> </ul>	<ul style="list-style-type: none"> <li>- Utilization of core target groups of Phase 1 who were trained through a series of different courses, have performed important roles as training center director, coordinator and monitoring and evaluation team members in Phase 2.</li> <li>- Utilization of equipment provided for SWC training centers resulted in achieving implementation of planned training courses with improved training environment.</li> <li>- Collaboration with other JICA projects which have components of capacity development in the water supply sector have resulted in more efficient management of the Project.</li> <li>- Collaboration with other international organizations including UNOPS, AfDB, UNICEF and other organizations such as Hawata Water Corporation, universities, private sectors have made the DWST &amp; PSWCs enrich with outreach training service with utilization of expertise in human resources development in the water supply sector.</li> <li>- Training in Morocco and dispatching Moroccan experts have been the contributing factors which stimulated Sudanese C/Ps through direct dialog with Moroccan counterparts in Arabic.</li> </ul>	

	Is there any hindering factor for the achievement of Output?	Regarding Output 1, the delay in construction of the Kilo Ten training center has hindered the development of training structure as intended initially. Regarding Output 3, lack of accumulated data and information about the water facilities in the state level has been the hindering factor for activities of monitoring O&M of the water supply facilities.	
	Are the important assumptions still appropriate?	<ol style="list-style-type: none"> <li>1. In Phase 2, Sennar SWC and White Nile SWC have constantly secured annual training budget regardless of the high inflation rates.</li> <li>2. Due to the organizational reform of the Ministry of Irrigation and Water Resources to Ministry of Water Resources in December 2011, and then to Ministry of Water Resources and Electricity in July 2012, Public Water Corporation also reformed to Drinking Water and Sanitation Unit in 2013. As a result, there has been delay in establishment of the Monitoring and Evaluation Department in DWSU. Mid-term review team made recommendation to urge the establishment of the monitoring units. In response, new units for monitoring and evaluation were formulated in DWSU and PSWCs.</li> <li>3. 17 staff members of DWST are working on implementation of the training courses. Total number of DWST staff members engaging in training course activities since Phase 1 is now 10 persons. DWST has been managing with their training activities with . However, if the DWST faces higher staff turnover rates, there will be more threats to the sustainability of the Project outputs in future.</li> <li>4. Budget, human resources and necessary equipment have been provided by DWSU, DWST, and PSWCs for the project implementation except new training center which is still under the funding arrangement.</li> </ol>	
IMPACT	Achievement forecast for the Overall Goal	"Water supply system is properly managed in Sudan." <Indicator 1>: SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities. If necessary inputs such as budget and equipment are allocated especially for O&M of water supply facilities at the state level in the sustainable manner, trained SWC staff members will be able to properly manage the water supply facilities utilizing their knowledge & skills. However, in order to ensure achievement of the overall goal, it is prerequisite to establish the monitoring framework at every state and systematically grasp the situation of the existing water supply facilities in Sudan.	
	Continuity of achievement of overall goal	<ul style="list-style-type: none"> <li>- Upon approval of the "Mid-term/long-term human resources development plan 2012-2026" by MoHRD, DWSU is likely to be able to manage budget and regulations essential for training activities.</li> <li>- By "Water Sanitation and Hygiene (WASH) Sector Strategic Plan (2011-2016)" for each state and human resources development action plan for 2016-2018 for PSWCs, those SWCs, which have been managing training activities are highly likely to continue securing budget and necessary regulations for human resources development by the state government.</li> </ul>	
	Causal relationships	Is the Overall Goal still logically linked to the Project Purpose given the current situation? The Project Purpose is logically linked to the Overall goal although there are important assumptions to be fulfilled as below.	
		Is there possibility of fulfillment of important assumptions to keep the achievement of overall goal? Has there been any effect of these assumptions? [Importance Assumptions]: <ol style="list-style-type: none"> <li>1. PSWC's staff who completed training courses do not leave SWC.</li> <li>2. There are no climate changes or disasters that affect the operations water facilities.</li> <li>3. Necessary budget, personnel, equipment, etc. are provided in SWC at the appropriate timing.</li> </ol>	<ol style="list-style-type: none"> <li>1. At White Nile SWC and Sennar SWC, trained staff members have been working as training coordinators as well as instructors for some courses.</li> <li>2. During the Project, there was no effect of climate change or disaster on the operations of water facilities.</li> <li>3. PSWCs have constantly secured annual budget for training activities as well as monitoring activities during the Project period. On the other hand O&amp;M costs have been covered by water tariff in PSWCs at each locality/sector office. However, PSWCs face insufficiency of budget for spare parts, upgrading equipment and developing water facilities, PSWCs rely on financial resources from state government and federal government.</li> </ol>
	Hindering factors	Is there any factor hindering the overall goal in the following aspects? <ul style="list-style-type: none"> <li>- Policy, law, regulations</li> <li>- Financial</li> <li>- Organizational (DWSU, DWST, SWC)</li> </ul>	- O&M of water yards are managed by each locality office with water tariff. However, due to legislation of water tariff which is normally set lower than proposal of SWC, it is not sufficient to perform O&M for all water facilities fully. It is commonly the challenges for SWCs to secure for spare parts, upgrading equipment and rehabilitation of water facilities since financial resources are from state government.
	Ripple effects	Is there any influence of the Project on the following factors? <ul style="list-style-type: none"> <li>- Policy, law, regulations, financial</li> <li>- Organizational (DWSU, DWST, SWC)</li> <li>- Skill/technologies</li> <li>- Economic influence to DWSU, DWST, SWC and related stakeholders in Sudan</li> <li>-Environment, gender, human rights, poverty reduction</li> </ul>	<ul style="list-style-type: none"> <li>- As the reputation of DWST increases, there have been more inquiry from international organizations and local organizations for training courses at DWST.</li> <li>- Participants of training in Morocco gained not only technical skills and knowledge but also sense of ownership towards their organization. It can be seen in improvement of their work environment.</li> <li>- In Shinga and Kosti water treatment plant, laboratory staff changed data recording method from the paper basis to computer basis along with the development of monitoring format for water analysis.</li> <li>- Well management training was conducted in the target hospital of the "Frontline maternal and child health empowerment project" in Sennar which had problems in quantity of water supply. As a result of repairmen of the facilities, water supply condition has improved in the hospital.</li> <li>- Through sanitation management training at the pilot SWC training center, participants from community organizations such as the Women's association increased their awareness of sanitation of water supply facilities in community. As a result, they have planned to prepare information materials to disseminate sanitation education at the community level as well as to establish a health cooperative.</li> <li>- It has been stimulating factor for SWCs to host Joint Seminar. North Kordofan SWCs promoted development of training center facilities prior to the event. Most of the SWC training centers were established by rehabilitating the existing buildings and converting to the facilities with seminar rooms,</li> </ul>

		offices for computer lab, water analysis lab, and workshop.
	If there is any negative impact, has the Project dealt with it, and how?	There is no negative effect found as the result of the Project.
SUSTAINABILITY (PROSPECT)	Policies and systems	<p>Will policy support/relevant regulations &amp; legal system continue even after the Project is finished?</p> <p>Are the relevant actions prepared to secure human resources development for expansion of the Water Supply System after the completion of the Project?</p>
		If the “Mid-term/long term human resources development plan 2012-2026” is approved by MoHRD, there will be higher possibilities for DWSU to be able to manage budget and regulations essential for training. At the state level, “Water Sanitation and Hygiene (WASH) Sector Strategic Plan (2011-2016)” will remain as the basic policy for SWCs.
		In line with national and state strategy as indicated in “Relevance” section above, DWSU, DWST and PSWCs have developed plans through the Project based on actual needs for different job category with feasible inputs and timeframe. List of strategy and plan developed by the Project is in Annex 4.
	Institution & Budget	<p>Are there possibilities of handing over of the Project activities to DWSU, DWST, and SWC in terms of personnel allocation, decision making process and facilitation with other bodies?</p> <p>After the completion of the Project, will the sense of ownership by DWSU, PSWC, and SWC continue in order to manage the water supply system in Sudan?</p> <p>- Has the budget been secured? - Are there measures to secure future budget?</p>
		<p>- &lt;HR&gt;: There are possibilities of handing over the Project activities to DWSU, DWST and PSWCs in terms of personnel allocation for training centers and monitoring &amp; evaluation, decision making process and facilitation with other bodies. Their sense of ownership is high as reflected in the fact that DWST and PSWCs have secured training budget constantly during the Project, and PSWCs have formulated human resources development action plan including training budget for the next 3 years. In case of other states, Northern SWC training center is planning to secure financial sources through generating income by running car maintenance and repairing workshop along with the training center facilities.</p> <p>- &lt;O&amp;M and equipment&gt;: Budget for O&amp;M is generated by sector/locality offices from water tariff revenue in SWCs. However, budget for equipment and spare parts are generally funded by state government to SWCs which is not sufficient to cover all the needs, especially for upgrading the old equipment and machinery. In case of Kssala, SWC has been planning to revise the urban water tariff to generate financial resources for maintenance of water facilities and secure human resources for rural water supply services management.</p> <p>- &lt;Monitoring&gt;: Budget for monitoring activities are generated from training budget in DWSU and from O&amp;M budget at localities in case of PSWCs. However for PSWCs there are shortage in vehicles and equipment for water analysis for monitoring &amp; evaluation unit members to visit water yards.</p>
	Technology	<p>Will DWST and SWC continuously utilize technology &amp; skills and system (training, monitoring, curriculum revision, equipment maintenance etc.) after completion of the project?</p> <p>Will the equipment of the Project be maintained appropriately after the end of the Project?</p> <p>Is dissemination of skills/techniques obtained by the Project secured by DWSU, SWC?</p>
		<p>- &lt;Training&gt;: According to DWST, director and course coordinators will continue utilizing technology &amp; skills and system established through the Project period and make revisions accordingly once the new Kilo Ten training center is established in near future. Many of the SWCs established training centers with their own resources during Phase 1 and Phase 2. Thus, SWC staff can utilize training management skills and knowledge in centers as well as at their work in sector/locality offices or SWC headquarters.</p> <p>- &lt;Monitoring&gt;: Since monitoring system has just developed for water yard, DWSU and PSWCs are now facing the challenges to adapt to the new format for monitoring designed for different timing.</p>
		Based on the current management condition as well as trained staff of DWST, PSWCs and other SWCs who participated in training courses (e.g. well management, mechanical/electrical/equipment management, water analysis, pipe network), it is expected that equipment provided by the Project will be managed by C/Ps with appropriate techniques.
		Through Phase 1 and Phase 2 of the Project, DWST became the main center for training human resources in the water supply sector in Sudan. With establishment of new Kilo Ten training center near future, it is expected that DWST will be able to increase their performance in dissemination of advance skills and techniques accumulated in the organization.
	Society and environment	<p>Is there any possibility that consideration will be continuously made for socially vulnerable people in future?</p>
	Through community development and sanitation management training courses conducted in PSWCs, consideration has been made on improvement of the livelihood of people in rural communities.	
Hindering factors	<p>Is there any hindering factors for sustainability?</p>	
	It is essential that security condition of Darfur states, South Kordofan state, West Kordofan state and Blue Nile state get stabilized for sustainability of the impacts.	

## ANNEX 4: List of materials developed by the Project

### <Reports>

1. Human Resources Development Project for Water Supply Phase 2 Work plan (1). November, 2011
2. Human Resources Development Project for Water Supply Phase 2 Project Progress Report (1). April, 2012
3. Human Resources Development Project for Water Supply Phase 2 Project Final Report (1). July, 2012
4. Human Resources Development Project for Water Supply Phase 2 Work plan (2). November, 2012
5. Human Resources Development Project for Water Supply Phase 2 Project Progress Report (2). April, 2013
6. Human Resources Development Project for Water Supply Phase 2 Project Final Report (2). April, 2013
7. Human Resources Development Project for Water Supply Phase 2 Work plan (3). October, 2013
8. Human Resources Development Project for Water Supply Phase 2 Project Progress Report (3). July, 2014
9. Human Resources Development Project for Water Supply Phase 2 Project Final Report (3). July, 2014
10. Human Resources Development Project for Water Supply Phase 2 Work plan (4). November, 2014
11. Human Resources Development Project for Water Supply Phase 2 Project Progress Report (4). April, 2015\*\*\*
12. Human Resources Development Project for Water Supply Phase 2 Project Final Report (4). October, 2015\*\*\*

### <Strategy & Plan>

1. Mid-term/Long-term Human Resources Development Plan. March 2015\*
2. Sennar SWC Monitoring Plan – Human Resources Development (Training) (2014-2015). November 2014
3. White Nile SWC Monitoring Plan – Human Resources Development (Training) (2014-2015). November 2014
4. Sennar SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014
5. White Nile SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014
6. Sennar SWC Monitoring Follow-up and Evaluation Unit Action Plan – Water Yard Rehabilitation (2015-2016). February 2015.
7. White Nile SWC Monitoring and Evaluation Unit Action Plan - Water Yard Rehabilitation (2015-2016). February 2015.
8. Sennar SWC training implementation plan. 2012, 2013, 2014, 2015\*
9. White Nile SWC training implementation plan. 2012, 2013, 2014, 2015\*
10. Sennar State Water Cooperation Training Center Action Plan (2015-2018) \*\*\*
11. White Nile State Water Cooperation Training Center Action Plan (2015-2018)\*\*\*

### <Manuals and Textbooks>

1. DWSU Monitoring Manual - Water Yard. March 2015\*
2. DWSU/DWST Monitoring Manual - Human Resources Development (Training). March 2015
3. DWSU Human Resources Development Manual. March 2015\*\*\*
4. DWST Training Manuals, March 2015\*\*\*
5. DWST Equipment Management Manual\*
6. DWST training course curriculum, textbooks, manual revision. March 2015\* [Produced for the following training courses: 1) O&M of water treatment plant, 2) Water supply facility, 3) Data management/GIS, 4) Well management, 5) Organizational management, 6) Water analysis, 7) Pipe network management, 8) Water facility management, 9) Isotope in hydrology, 10) Procurement & storage, 11) Software of pipe network, 12) Hydrometric & surface water, 13) Groundwater geophysics & water well design, 14) Project Cycle Management, 15) Advance well management, 16) Borehole camera, 17) Basic 2D Geo-electrical imaging, 18) Presentation skill, 19) Training of Trainer, 20) Report writing, 21) Planning Monitoring & Evaluation, 22) Well rehabilitation, 23) Engineering economy, 24) Data management/GIS & remote sensing, 25) Solar system, 26) Basic of programmable logic controllers, 27) Supply chain, 28) Estimation costs & equipment management, 29) Computer skills (Excel), 30) Sanitation management, 31) Management skills & Projects planning, 32) Workshop for integrated water resources management & its role for peace-building & conflict resolution, 33) Statistical package for social science (SPSS), 34) Improve rural water supply management, 35) Water analysis (Instrument), (Chromatography techniques) (Chromatography-HPLC) (ISO 17025) (Instrument & Groundwater Treatment), 36) Advanced Procurement & Storage, Management Skills (primavera), 37) Tendering contracts, 39). Human resources development]
7. PSWC training course curriculum, textbooks. March 2015\* [Produced for the following training courses: 1) Organizational management, 2) Well management, 3) Water quality management, 4) Data management, 5) Equipment management, 6) Mechanical management, 7) Electric management, 8) Pipe network management, 9) Water treatment plant management, 10) Community development management, 11) Water tariff management, 12) Sanitation management, 13) Computer skills, 14) TCM-Global position system, Government accounting process, Public service act]

### <Others (Documents, Database)>

1. Well Rehabilitation Video, March 2014
2. Sudan Water, October 2013\*\*
3. Morocco Training Reports, 2012, 2013, 2014
4. Training database – White Nile SWC
5. Training database – Sennar State SWC
6. White Nile SWC staff database
7. Sennar SWC staff database

\* Products are created in Arabic in addition to English version.  
\*\* Products are created in Japanese only.  
\*\*\* Products are draft version as of March 2015 and/or to be completed by the end of the Project in October 2015.

## ANNEX 5: Schedule of the Terminal Evaluation

### 5-1 Schedule of the Japanese Team

Date			Mr.Ejiri (Leader)	Mr.Shimizu (Evaluation Planning)	Ms.Onozato (Evaluation Analysis)
1	20-Feb	Fri			21:20 Narita (EY871) --> 05:10 Abu Dabi
2	21-Feb	Sat			09:55 Abu Dabi --> 13:25 Khartoum (EY632)
3	22-Feb	Sun			08:30 Meeting w/ JICA Sudan Office 10:10-10:25 Courtesy call to DWSU DG (JCC Chair/Project director) & DWST Director (Project manager) 10:30-11:40 Interview with DWST Director 12:30-13:30 Group interview with DWSU Monitoring and Evaluation Dept. & Information Center 13:30 Meeting & Interview w/JICA Experts at the Project office 15:00-15:40 North Kordofan SWCT deputy training director
4	23-Feb	Mon			09:00-10:05 Site visit at Water supply facility training at DWST workshop & interview with C/P 10:20-10:50 Group Interview with DWST water analysis C/P 10:50-11:05 Interview with DWST GIS/remote sensing C/P 11:05-11:30 Interview with DWST sanitation management C/P 11:30-11:45 Interview with DWST training database C/P 12:15-12:40 Interview with DWST GIS/remote sensing C/P 13:00-13:40 Interview with DWSU Director General, DWST Director
5	24-Feb	Tue			05:00 Khartoum --> Sennar state 10:30-11:10 Meeting with Sennar SWC Director General 12:15-13:00 Interview with Sennar SWC Training director/ Assistant training director 13:10-14:00 Interview with Sennar SWC Monitoring Follow-up & Evaluation Unit 14:40-14:45 Site visits at water yard in Singa locality 14:50-15:00 Site visits at Singa water treatment plant 15:10-16:00 Singa locality office
6	25-Feb	Wed			08:50-10:20 Site visit at Well management training at Lanorania, Singa sector/ Interview with Sennar SWC Training Center well management, organizational management C/P 10:55-11:20 Interview with Sennar SWC Training Center Database management C/P 11:20-11:45 Interview with Sennar SWC Training Center water quality C/P 12:00-12:15 Interview with Sennar SWC Training Center pipe network C/P 12:15-12:25 Interview with Sennar SWC Training Center mechanical & equipment management C/P 12:25-12:40 Interview with Sennar SWC Training Center water treatment plant C/P 12:45-13:20 Interview with Sennar SWC Training Center community development C/P
7	26-Feb	Thu			09:10-09:25 Interview with Sennar SWC Training Center sanitation management C/P 09:25-09:55 Interview with Sennar SWC Training Director 10:30-11:00 Site visit at Sennar SWC training center workshop Sennar state --> Kosti, White Nile state PM: Compiling collected data & information
8	27-Feb	Fri			Draft of Terminal Evaluation Report
9	28-Feb	Sat			Draft of Terminal Evaluation Report
10	1-Mar	Sun			09:50-10:40 Meeting & interview with WN SWC Training Center DG, Training Center Director, Revenue manager, Project resources management 10:45-11:20 Interview with WN SWC Training Center Monitoring and Evaluation Unit C/P 11:40-12:10 Interview with WN SWC Training Center Electrical management C/P 12:10-12:30 Interview with WN SWC Training Center Mechanical Management C/P 15:10-15:20 Site visits at Water Yard, Tamlika village, Tendalty locality
11	2-Mar	Mon			08:45-09:20 Group interview with WN SWC Training Center Water quality, Database management, Monitoring C/P 09:20-09:45 Group interview with WN SWC Training Center Water treatment plant C/P 09:50-10:35 Group interview with WN SWC Training Center Well management, Water quality management C/P 10:40-11:10 Group interview with WN SWC Training Center Water tariff, Equipment management C/P



					12:05-12:45 Group interview with WN SWC Training Center Organizational management, Pipe network management C/P 12:45-13:20 Group interview with WN SWC Training Center Community development, Sanitation management C/P 13:40-13:50 Kosti water treatment plant
12	3-Mar	Tue			08:45-09:00 Interview with WN SWC training center director 09:10-09:20 Site visit at Electrical management course 09:30-09:40 Site visit at Workshop, WN SWC Kosti, White Nile state --> El Obeid, North Kordofan state 15:25-15:50 Courtesy call to North Kordofan state Ministry of Physical Planning and public utilities and North Kordofan SWC 16:00-17:00 Meeting and interview with North Kordofan SWC
13	4-Mar	Wed			08:30-10:00 Interview with North Kordofan Training Center Director 10:00-11:00 Site visit at training facilities and interview with training center course coordinators 11:00-11:30 Site visit at ElObeid water treatment plant and water analysis laboratory PM: El Obeid, North Kordofan state --> Wad Medani, Gezira
14	5-Mar	Thu			08:40-10:00 Interview with Gezira SWC DG & Training Center Director & Ex-trainee of C/P training in Morocco 10:00-11:30 Site visit at Gezira SWC training facilities and interview with training center staff PM: Wad Medani, Gezira state --> Khartoum
15	6-Mar	Fri			AM&PM: Draft of Terminal Evaluation Report
16	7-Mar	Sat		11:20 Khartoum (QR1329)	AM: Draft of Terminal Evaluation Report PM: Explain about Joint Evaluation Report to Japanese Experts
17	8-Mar	Sun			09:00 Interview with UNICEF 13:30 Interview with UNOPS 15:00 Interview with IOM
18	9-Mar	Mon	11:20 Khartoum (QR1329)		10:00 Interview with Dam Implementation Unit (DIU), Ministry of Water Resource and Electricity (Water Atlas Project) 10:30 Interview with the hand pump project by Belgian Government 14:00 Site visit at Soba water treatment plant
19	10-Mar	Tue			10:00 Discussion on Draft Terminal Evaluation Report and M/M with DWSU/DWST/JICA experts 12:30 Explain about Joint Evaluation Report to Project Director Site visit at DWST Kilo Ten
20	11-Mar	Wed			09:30 Finalizing Joint Evaluation Report 14:30 JCC, Signing of M/M
21	12-Mar	Thu			09:00 Report to JICA Sudan office 14:00 Report to Embassy of Japan
				20:55 Departure from Khartoum (QR1328)	14:40 Departure from Khartoum (EY633)
22	13-Mar	Fri		16:55 Arrival in Narita (QR806)	17:35 Arrival in Narita (EY878)

WN: White Nile State

## ANNEX 5: Schedule of the Terminal Evaluation

### 5-2 List of stakeholders consulted

#### (1) Sudanese side

##### Drinking Water and Sanitation Unit (DWSU)

Mr. Mohamed H. M. Ammar Director General, DWSU  
Mr. Omer Elsunni Takroumi Information Management, Information center/ Monitoring and Evaluation Department/ Course coordinator for GIS/Remote sensing  
Mr. Mohammed Yahya Computer engineer, Information center/ Monitoring and Evaluation Department

##### Drinking Water and Sanitation Unit Training Center (DWST)

Mm. Eatidal El Rayah Malik Director, DWST  
Mr. Egbal B. Alamir Course coordinator, Training Course 1 (Well management), Department of Training Management  
Mr. Bashary Ibrahim Course coordinator, Training Course 2 (water supply), Department of Training Management  
Ms. Rawaa Mohamed Mahdi Assistant coordinator, Training Course 1 (well management), Department of Training Management  
Mr. Abdela Majed Ahmed Course coordinator, Training Course 3 (water quality), Department of Training Management  
Ms. Safia Ali Babekir Assistant coordinator, Training Course 3 (water quality), Department of Training Management  
Mr. Sharaf Aldeen Mahmoud Assistant coordinator, Training Course 6 (GIS/Remote sensing), Department of Training Management  
Mr. Motwkel Mahmoud Sanitation coordinator, Training Course 7, Department of Training Management  
Ms. Hanan Mahmoud Secretary, Department of Training Management

##### Sennar State Water Corporation

Mr. Elmadani Elkhadir Elmadani Director General, Sennar SWC  
Mr. Elsary Kamaleddin Deputy Director General/ Project Department, Sennar SWC  
Mr. Abbas Hamid Director, Training Center  
Mr. Galal Bashir Dowelbite Assistant Director/ Training Course Supervisor/ Training coordinator, Community Development, Water tariff management, Department of Training Management  
Mr. Ammar Hassan Rahamtalla Singa Sector Director/ Monitoring Follow-up and Evaluation Unit/Training coordinator, Database management  
Mohammed Monitoring Follow-up and Evaluation Unit/Geologist, Shinga Sector  
Mr. Yasir Adam Mohamed O&M, Singa Sector  
Mr. Awad Training coordinator, Water Quality Management/ Monitoring Follow-up and Evaluation Unit/ OMITC  
Ms. Eman Elnour Fad Elmoula Singa Water Treatment Plant  
Mr. Ali Hassan Saad Lecturer/Training coordinator, Well Management, Organizational management, Department of Training Management  
Ms. Omima Mohammed Elhaj Assistant coordinator, Well Management, Department of Training Management  
Ms. Ameera Mohamed Nur Computer Engineer, Central Sennar Sector/ Training coordinator, Data Management & Monitoring, Department of Training Management  
Mr. Humam Abdeen Training coordinator, Water Quality Management, Department of Training Management  
Mr. Ayman Ali Electrical engineer, Workshop/ Training coordinator, Electric management, Department of Training Management  
Mr. Marwa Osman Abd Elhafizz Central sector/ Training coordinator, Pipe network  
Ms. Sara Ali Mohamed Assistant coordinator, Pipe network/ Planning & Development management  
Mr. Zakria Sideeg Mohame Mechanical engineer, Supply Department/ Training coordinator, Equipment management  
Ms. Sana Osman Mohammed Supervisor, Project of administration/ Assistant coordinator, Water treatment plant  
Mr. Abdelbagi Ahmed Alamin Manager, Pipe network department/ Training coordinator, Water treatment plant  
Ms. Rehab Mustafa Community Development/ Sanitation Management/ Malaria and vector control, Sennar Locality

##### White Nile State Water Corporation

Mr. Elsadig M. Tahameed Director General, White Nile SWC  
Mr. Alwahab Awad Abesin Manager, Revenue  
Mr. Mohamemed Yahia Project resources management  
Mr. Ahmed Eltayeb Suliman Director, Training Center/ Monitoring and Evaluation unit  
Ms. Elrisala Mohammed Yousif Field Geologist, Groundwater unit/ Monitoring and Evaluation unit  
Mr. Mohammed Alsadig Supervisor, Training Course Management  
Mr. Faisad M. Aboushoal Electric Management/ Electrical Engineer, Raback locality office  
Mr. El Tayebe Ahmed Adam Mechanic Management/ Project department  
Mm. Rania Babeke Hassan Ali Course coordinator, Data Management & Monitoring  
Ms. Manahil Mahjoub, Monitoring  
Mr. Mohammed Bilal Edris Assistant course coordinator  
Mr. Ahmed Suliman Course coordinator, Water Treatment Plant/ Project management department  
Mr. Adil Eisa Musa Course coordinator, Water Treatment Plant/ Project management department  
Mr. Atif Mohamed Assistant coordinator, Water quality/ Water quality control, Kosti Locality  
Ms. Elresala Mohammed Course coordinator, Well Management/ Groundwater drilling department  
Mr. Ali Abdallah Assistant coordinator, Well Management/ Groundwater drilling department  
Mr. Abdelwahab Abu Sin Manager, Revenue Department, SWC/ Course coordinator, Water Tariff Management  
Mr. Mohamed Ahmed Suliman Logistics Dept./Course coordinator, Equipment management  
Mr. Idreiss Mohamad Idreiss Distribution network, Kosti Locality/ Course coordinator, Organization Management  
Mr. El Smani Elfadel Hag Amer Manager, Goaly/ Course coordinator, Pipe Network Management

Mr. Awad A. Mahmoud	Head of Personnel, SWC/ Assistant course coordinator, Community Development
Mr. Bilal Abdelrhman,	Assistant course coordinator, Sanitation Management
Mr. Atif Mohamed	Engineer, Water quality, Kosti water treatment plant
Ms. Asma Mohamed Elbager	Laboratory chemist, Kosti water treatment plant
Mr. Omer Mohamed Abbas	Laboratory, Kosti water treatment plant

**North Kordofan Ministry of Physical Planning and Public Utilities**

Mr. Hafiz Mohammed Mahmoud Ahmed	North Kordofan state Minister of Physical Planning and public utilities
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**North Kordofan State Water Corporation**

Mr. Mohammed Ahmed Barrar Sahal	Former DG, North Kordofan SWC
Eng. Anwar Elsadat Elhaj	DG, Water consultancy
Ms. Afra Mustafa Mohammed	Director, North Kordofan State Water Cooperation Training Center
Mr. Iseldi Mohammed Mohammed Ali	Deputy Training Center Director
Mr. Maawia Adam Mohammed Elnoor	Manager of El Obied, Urban Water Supply Directorate
Mr. Ahmed Mohammed Suliman	Chemical engineer, ElObied Water treatment plant
Ms. Nazik Musa Mohammed	Chemist, ElObied Water treatment plant

**Gezira State Water Corporation**

Mr. Fatherahman Mohmed	Director General,
Mr. Sammi Omer Elamin	Planning & programing Dept. manager
Mr. Mohammed Alawad	Installation civil engineering manager
Mr. Isameldeen Munsor	Project Department,
Mr. Abdalla Mohammed	Technical office manager
Ms. Batoul Saad Faggad	Training center director
Mr. Ehab Abdallal	Computer engineer, Training center
Mr. Arwa Abulehassa Makeen	Computer engineer, Training center

**Other SWCs** (Note: Following stakeholders were consulted through questionnaire only.)

Mr. Mhmoud Abdalla Gamaa	Director General, West Darfur SWC
Mr. Nasrelden Mohamoad Mohamed	Director General/Training Director, North Darfur SWC
Mr. Idris Dabaka Adam	Director General, South Darfur SWC
Mr. Ibrahim Abaker Digies	Director General, Central Darfur SWC
Mr. Abdelrhman Mohamed Ahmed	Director General/Training Director, Blue Nile SWC
Mr. Hashim Mohamed Abdo Alateef	Director General/Training Director, Kassala SWC
Mr. E.Abubaker Abdalla Mohammed	Director General, River Nile SWC
Mr. E.Nazar Mustafa Abbas Ahmed	Training Director, River Nile SWC
Mr. Abdalla Mohammed Mahmoud	Training Director, Northern SWC
Mr. Hashim Mohamed Abdo Alateef	Director General, Kassala SWC
Mr. Mustafa Ibrahim Mustafa	Director General, Gadaref SWC

**Dam Implementation Unit, Federal Ministry of Water Resources and Electricity**

Mr. Bahaeldin Mohamed Mahmoud	Head of survey & ground imaging department
Mr. Hatim Elobied Ibrahim	GIS specialist, GIS centert

**(2) Development partners**

**UNICEF**

Mr. Fouad Yassa	WASH specialist, Water and Environmental Sanitation (WASH) section
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**UNOPS**

Ms. Kazuyo Mitsuhashi	Project coordinator
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**IOM**

Mr. Tatsuaki Tomiyama	Deputy Programme Coordinator, WASH and Basic Infrastructure Unit
Mr. Shintaro Higashiyama	Project Intern, Social Cohesion Unit

**Honorary Consulate of Belgium in Khartoum**

Mr. Rushdi Hamid	Honorary Consul
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**(3) Japanese side**

**JICA Sudan Office**

Mr. Akihira Sano	Project Formulation Advisor
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**JICA experts**

Mr. Mitsuro Uemura	Leader/Training Plan/Water Supply Plan 1
Mr. Jun Onodera	Deputy Project Leader/Organizational Management/Water Tariff Management
Mr. Yusuke Oshika	Well Management
Mr. Ryoichi Kimura	Electricity/Mechanics/Equipment Management
Mr. Tadashi Sato	Data Management/Monitoring
Mr. Arata Sasaki	Community Development
Ms. Aya Kadokami	Sanitation Management

**Project national staff**

Mr. Abdelgader Babiker	
Mr. Ahmmmed Abdalla	



**JICA Project on Human Resources Development for Water Supply Phase (2)**

**Final JCC 10<sup>th</sup> and Joint Seminar**

**2<sup>nd</sup> September 2015**

**Minutes of Meeting**

**Greeting (1):**

**Mr. Mohamed Hassan M. Ammar, Director General, Drinking Water and Sanitation Unit (DWSU)**

Mr. Ammar, appreciated the Japan government and JICA for the continuous support to water sector in Sudan which assisted to improve and sustain the water services in many states. Mr. Ammar as well thanks Japan for the grant projects in Kassala and White Nile States, but he persuade Japan to support Port Sudan and North Korodfan states which suffer serious problems.

Mr. Ammar listed up the output of the human resources development achieved through the project period which represented by:

- Number of (122) training courses have been completed at DWST with total number of 1,805 persons from all the states.
- Several seminars and workshops have been conducted to exchange knowledge and experiences among different states.
- Number of (48) staffs were dispatched to Morocco for study tour; while (38) others were dispatched for more advance training in Japan.
- Training centers were established at many states including training system and equipment.
- A monitoring system was developed where actual monitoring of the rural supply facility was achieved in the pilot states.

Mr. Ammar in his final speech, strongly request from each SWC director general to support the state training centers, and he promised to continuously support their efforts.

**Greeting (2):**

**Ambassador, Mr. Hideki Ito, Embassy of Japan**

*M. U*

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Mr. Ambassador expressed his pleasure to attend the 10<sup>th</sup> JCC meeting, and thanks Ministry of Water Resources, Irrigation and Electricity, the DWSU, DWST, the Japanese experts and all those who contributed to the success of the Project in Sudan.

Mr. Ambassador refers to his visit to White Nile State, which he described as good opportunity to recognize the appreciation of the Sudanese people to the Japanese support.

The efforts of North Kordofan, Gezira, River Nile, Kassala, North Darfur states to establish their own training centers were outstanding because they succeeded to achieve it by their own.

The water issue is very important and vital, but it is also difficult for sustainable development. It is worth to mention that Japan supported the water supply system development in Sudan in 1980<sup>th</sup> in Kassala and Omdurman, but the Sudanese has to maintain it by themselves.

Mr. Ambassador requested from the Sudanese to learn from the Japanese experts the good practices and he call them as assets for Sudan.

H.E. encouraged them to discuss and evaluate their performance; in return he promised the support of Japan to their sincere efforts. H.E. persuades the Sudanese side to exchange their experiences not only among Sudanese, but also to the African countries such as Morocco.

At the end of Mr. Ambassador Speech, he took the tree of Mr. Uemura in White Nile State which growing very good as a symbolic to the Japanese-Sudanese cooperation in the future that he wish to grow fruitfully as well.

## **DISTRIBUTION OF AWARD**

The Project for Human Resources Development for Water Supply (Phase II) adapted an approach to enhance the management at each state training center, which is the "competition". This time the JICA expert and DWSU visited about eight states to check their progress. Accordingly, the Award of Excellence was awarded to:

- Gezira State Training Center
- North Korodfan State Training Center

### **Discussion:**

#### **(1) QUESTION OF EACH PRESENTATION:**

##### ➤ Questions:

*m. a*

- Mr. Mohamed Abdelgader, Director General, Hawata Water Corporation

Mr. Abdelgader pointed out three topics:

- The importance to support the Project approach to have training center at each state and,
- The support of state-state relationship through joint seminar and site visit.
- The importance to have Morocco as model country for Sudan in water sector.
- The importance to discuss construction of the new Kilo 10 training center during the Steering Committee meeting.

- Mr. Almadani, Director General, Sennar SWC

The new JICA technical cooperation project selected Kassala and White Nile states as pilot states. However, it is not clear what kind of support the remaining states will have?

- Mr. Mubarak Fathelrahman, Red Sea State

Mr. Mubarak believes that the study team of JICA didn't consider the difference between the states in terms of water sources, water quality and type of problems. In his opinion, Port Sudan relies on desalination treatment to supply water, but JICA expert, Mr. Uemura had bad expression about the situation in Port Sudan which might affect negatively of the Study Team. In this connection, Mr. Mubarak inquired about the criteria of selection for the pilot states.

- Mr. Ibrahim Digaice, Director General, Central Darfur State

Mr. Digaice refers that the Project completed two phases following the approach of modeling state. The Project evaluated as successful, and then we expected that the new Project shall not go for more piloting, but instead shall take the most needy, underdeveloped states as top priority.

The comment of Mr. Digaice was supported by South Kordofan state representative

➤ **Answers:**

- Mr. Koji Shimizu, JICA HQ

The selection criteria for the pilot states were considered as follows:

- Kassala state applied for technical cooperation project, and Japan government accepted the application and decided to make a survey. The survey found that it is important to have another state. Then;
- White Nile state Minister of Urban Planning demonstrated a strong commitment to the Project which supported the selection of White Nile as second pilot state.

*m. u*

*[Handwritten signature]*

- JICA has two water purification plants in Kassala and White Nile states, and from the point of utility maximization and cost efficiency, we think that it is better to have Kassala and White Nile as pilot states.

Yet, Sennar state as well as other states can always share this Project experiences through the joint seminar and study tour.

It is not only Japan and Morocco that you can extract experience out, but also there are good models in Hawata and Gezira.

Mr. Miyazaki commented that although the Project has only two pilot states but it actually supports all Sudan indirectly. It is expected that DWSU dispatches its staff to all states for more technical support.

Mr. Uemura explained to Port Sudan representative about the background of non-selection of his state as pilot. The application was submitted by DWSU in 2008, and then JICA visited Port Sudan for survey. After the survey on 2013 during the desalination convention, the Moroccan expert Mr. Hafsi explained that the maintenance system of the desalination plant was very weak and dangerous. However it was very difficult to support Port Sudan for this reason.

As for South Kordofan, JICA supported your state through an emergency program and provided equipment, unfortunately the equipment was lost during the war, and JICA couldn't confirm the situation at all.

Mm. Etidal directed the SWCs Directors to discuss more with DWSU about the problem of water sector and way to solve it.

## **(2) CONFORMATION OF THE PROGRESS OF THE TRAINING CENTER FACILITY AND TRAINING ACTIVITY IN EACH SWC:**

### **▪ South Kordofan State:**

The building and the staff already decided two years ago but nor rehabilitation was done.

### **▪ Blue Nile State:**

We have old building and staff but we couldn't make rehabilitation as we are expecting approval of DWSU, which wasn't happen till today.

### **▪ Central Darfur State;**

We have a small building that we do training on it, but we are planning to have another building within three months.

### **▪ Kassala State:**

Mr. Hashim requested to reconsider the ranking of his state in term of training achievement. He said that Kassala state has many UN agencies and NGOs who are supporting the capacity building programs.

*m.g*

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Accordingly his state completed the training for 400 staffs last year 2014. Currently, total 50 staffs have been trained, although the target by the end of 2015 is 180 staffs. Not only that but also we trained 18 staffs abroad.

Mm. Etidal emphasized that DWSU is ready to dispatch national experts to each state that complete the training center building and assist to setup the training system.

### **(3) FINDING NEW TRAINING CUSTOMERS:**

Mm. Etidal directed the SWCs directors to contact the Ministry of Human Resources Development in Khartoum who are able to support the state's training centers.

#### **▪ Northern State;**

Mr. Abdalla inform that Northern state has conducted English language training courses and established a vegetable farm that produces for community for profit. The financial return out of these activities is used to finance the training center activities. In the future we would like to make use of a four kilo meter area for gold mining. Mr. Abdalla added that the Northern State Ministry of Finance promised to support the training budget by covering the cost of some training courses.

#### **▪ Hawata Water Corporation:**

Mr. Abdelgader emphasize the importance of all the lesson learnt out of the Project Phase 2 and the good examples of Gezira, Northern, White Nile and Sennar states, in addition to the support of the Ministry for Human resources Development to DWSU, but he brought the attention to the importance of the State Governors support as well which must be taken into consideration.

#### **▪ North Kordofan State:**

Ms. Afra explained that North Kordofan SWC training center already has partnership with local university and business relationship with some private companies to support customer service capacity building.

#### **▪ Khartoum State:**

Khartoum SWC has no training center, but it used to be responsible to train all the staff of the water sector. The KSWC didn't receive training application since long time but we didn't know the reason. Apparently, because each state finds other customer and that is DWST who succeeded to take our customers.

*sm, u*

*M*

**(4) ESTABLISHMENT OF ORIGINAL BUDGET AND BANK ACCOUNT:**

Sennar, White Nile and North Kassala states already have separate account for their training centers.

The approval of the budget is under the Director General.

**(5) TRAINING CENTER DIRECTOR MEETING AND INFORMATION SHARING SYSTEM:**

Mm. Etidal persuades the Director of each state training center to share the information not only among each other during the director meeting, but also with their SWC Director Generals, because the training center can help the DGs to analyze the problems and provide solutions. Eventually, the situation of the water sector can be improved.

**Greeting (3):**

**Mr. Hashim Abdel-Latif, Director General, Kassala SWC**

Today we are very happy to sign the new project for capacity building and infrastructure with JICA. Although this Project has two pilot states that's Kassala and White Nile, but we are ready to share all the information, and receive any number of trainees as we did before. We promise to share the knowledge and experiences with you all.

**Greeting (4):**

**Mr. Mohammed Hassan M. Ammar. Director General, DWSU**

This Project will be very important for all Sudan, and hereby, I would like to seize the opportunity to thank JICA and the Government of Japan for their continuous support to the water sector in Sudan. This Project will not be limited to the two pilot states only but it will support all Sudan.

**Greeting (5):**

**Mr. Mohamed Yahia, Director General, White Nile SWC**

We are the luckiest state to have a grant project and a technical project by JICA. We appreciate a lot Mr. Uemura, Mr. Ammar and Mr. Tahameed.

**Greeting (6):**

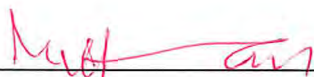


**Mr. Akihiro Miyazaki, JICA HQ**

I am very pleased today to attend the 10<sup>th</sup> JCC of this Project which I consider the best JICA project in Africa. You have all factors to make it successful. You have the skills, the knowledge, the attitude and the most important the very good leadership.

Although this Project was completed, but today we signed a new project, of which we focus this time much more on the institutional management and the urban water supply management.

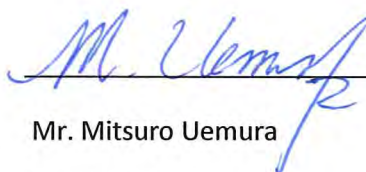
We expect from you all to participate positively on this project even if you are not a pilot state. You shall work together and share the information because it will be a good opportunity for future planning for Sudan.



Mr. Mohammed Hassan M. Ammar

Director General

Drinking Water and Sanitation Unit



Mr. Mitsuro Uemura

Team Leader

JICA Project on Human Resources

For Water Supply (Phase 2)



Mrs. Etidal Elrayah Malik

Director

Drinking Water and Sanitation Unit

Training Center