

State Government of Kassala  
Republic of Sudan

Capacity Development Project  
for  
the Provision of Services for Basic Human Needs  
in  
Kassala, the Republic of Sudan  
(Preparation Phase)

Final Report

March 2011

Japan International Cooperation Agency  
(JICA)

Consultant:  
International Development Center of Japan

SOD
J R
10-001

State Government of Kassala  
Republic of Sudan

Capacity Development Project  
for  
the Provision of Services for Basic Human Needs  
in  
Kassala, the Republic of Sudan  
(Preparation Phase)

Final Report

March 2011

Japan International Cooperation Agency  
(JICA)

Consultant:  
International Development Center of Japan

**State Government of Kassala  
Republic of Sudan**

**Capacity Development Project  
for  
the Provision of Services for Basic Human Needs  
in  
Kassala, the Republic of Sudan  
(Preparation Phase)**

**Final Report**

**March 2011**

**Japan International Cooperation Agency  
(JICA)**

**Consultant:  
International Development Center of Japan**

SDO
JR
10-001

**Exchange Rates  
(as of March 2011)**

US\$ 1 = SDG 2.646

US\$ 1 = ¥ 81.73

SDG 1 = ¥ 30.890

(JICA's Monthly Rates)

---

**Capacity Development Project for the Provision of Services for Basic Human Needs  
in Kassala  
(Preparatory Phase)**

**Final Report**

**Table of Contents**

---

**Map of the Project Area**

**Abbreviations**

**Executive Summary**

<b>Chapter 1 Overview.....</b>	<b>1</b>
1.1 Background.....	1
(1) Overview of Kassala State .....	1
(2) Justification for the Project .....	2
1.2 Objectives of the Preparation Phase .....	2
1.3 Target Area .....	3
1.4 Work Flow .....	3
1.5 Work Schedule .....	4
1.6 JICA Study Team and Assignment .....	5
1.7 Counterparts.....	6
1.8 Project Coordination Mechanism during the Preparation Phase .....	6
1.9 Project Office Set-up and Procurement of Equipment .....	9
(1) Project Office Set-up.....	9
(2) Procurement of Equipment .....	9
<b>Chapter 2 Work conducted from October 2010 to March 2011 .....</b>	<b>11</b>
2.1 Overview of the Work .....	11
2.2 Planning Cluster .....	13
2.2.1 Situation Analysis.....	13
(1) Government Policy, Priorities and Budget .....	13
(2) Existing Projects and Programs (by government, donors and NGOs).....	18
(3) Current Situation and Problem Analysis.....	22
2.2.2 Plan for the Implementation Phase.....	26
(1) Basic Policy.....	26
(2) Plan for the Implementation Phase .....	26
(3) Planned Inputs.....	30
2.2.3 Preparatory Work for the Implementation Phase .....	32
(1) Technology Transfer to the Counterparts .....	32

---

2.3	Water Supply Cluster.....	34
2.3.1	Situation Analysis.....	34
(1)	Present Situation of the Water Supply in the State.....	34
(2)	Government Policy and Priorities.....	35
(3)	Existing Projects and Programs (by government, donors and NGOs).....	37
(4)	Current Situation and Problem Analysis.....	38
2.3.2	Plan for the Implementation Phase.....	42
(1)	Basic Policy.....	42
(2)	Plan for the Implementation Phase.....	45
(3)	Planned Inputs.....	48
2.3.3	Preparatory Work for the Implementation Phase.....	51
(1)	Pilot Activities.....	51
(2)	Technology Transfer to the Counterparts.....	53
2.4	Agriculture and Livelihood Cluster.....	55
2.4.1	Situation Analysis.....	55
(1)	Present Situation of Agriculture and Rural Development in the State.....	55
(2)	Government Policy, Plan and Budget, Priorities and Strategies.....	59
(3)	Existing Projects and Programs (by government, donors and NGOs).....	61
(4)	Current Situation and Problem Analysis.....	63
2.4.2	Plan for the Implementation Phase.....	66
(1)	Basic Policy.....	66
(2)	Plan for the Implementation Phase.....	67
(3)	Planned Inputs.....	70
2.4.3	Preparatory Work for the Implementation Phase.....	72
(1)	Detailed Designs of Umbrella Activities for TTEA/ SMOAFI.....	72
(2)	Pilot Site Selection.....	74
(3)	Detailed Designs of the Pilot Projects.....	77
(4)	Pilot Activities.....	82
(5)	Technology Transfer to the Counterparts.....	83
2.5	Health Cluster.....	84
2.5.1	Situation Analysis.....	84
(1)	Present Situation of the Health in the State.....	84
(2)	Government Policy and Priorities.....	87
(3)	Existing Projects and Programs (by government, donors and NGOs).....	88
(4)	Current Situation and Problem Analysis.....	91
2.5.2	Plan for the Implementation Phase.....	93
(1)	Basic Policy.....	93
(2)	Plan for the Implementation Phase.....	95
(3)	Planned Inputs.....	96
2.5.3	Preparatory Work for the Implementation Phase.....	98
(1)	Pilot Activities in the Preparatory Phase.....	98
(2)	Technology Transfer to the Counterparts.....	100
2.6	Vocation Training Cluster.....	102
2.6.1	Situation Analysis.....	102
(1)	Present Situation of the Labor Market of the State.....	102
(2)	Government Policy, Plan and Budget, Priorities and Strategies.....	105
(3)	Major Existing Projects and Programs (by government, donors and NGOs).....	107
(4)	Current Situation and Problem Analysis.....	108
2.6.2	Plan for the Implementation Phase.....	112

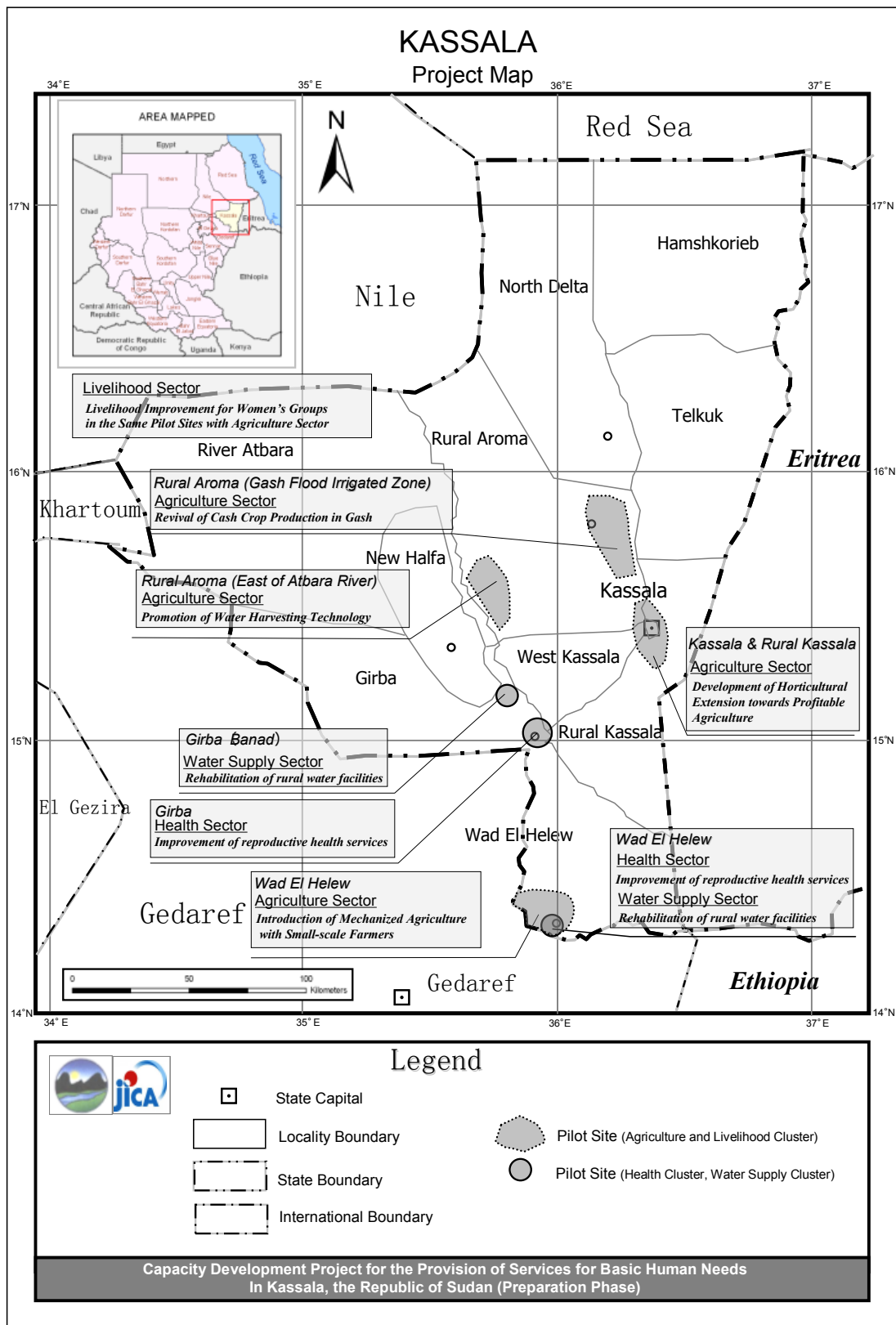
(1) Priority and Strategy Setting for the Implementation Phase.....	112
(2) Plan for the Implementation Phase .....	112
(3) Planned Inputs.....	115
2.6.3 Preparatory Work for the Implementation Phase .....	117
(1) Pilot Activities.....	117
(2) Technology Transfer to the Counterparts .....	120
<b>Chapter 3 Recommendations for the Implementation Phase.....</b>	<b>122</b>
3.1 Recommendations on Technical Aspects .....	122
3.2 Recommendations on Administrative Aspects.....	125

## Annexes

1. Project Design Matrix (PDM) (attached to the M/M signed on 13 March 2011)
2. Plan of Operation (PO) (attached to the M/M signed on 13 March 2011)
3. Planned Inputs
  - 3.1 Assignment Schedule (as of 31 January, 2011)
  - 3.2 Training in Japan and Other Countries
  - 3.3 Equipment Procurement
    - 3.3.1 List of Equipment Procured in the Preparatory Phase
    - 3.3.2 List of Equipment to be Procured in the Implementation Phase
  - 3.4 Facilities
  - 3.5 Budget (Japanese Side)
  - 3.6 Budget (Sudanese Side)
4. List of Documents Collected
5. Meeting Memos of JCC and Federal Coordination Meetings

## Annexes (Electronic Data)

- |           |  |
|-----------|--|
| Water-1   | Meeting Memo on Workshop in SWC  |
| Water-2   | GIS Updating System for Pipe Network in Kassala Town (Draft)   |
| Agri-1    | Discussion Material Prepared by the JICA Sudan Office “Capacity Development Project for Provision of the Services for Basic Human Needs in Kassala” <Agriculture and livelihood improvement component> |
| Agri-2    | Cost Estimates and Implementation Schedules of the Pilot Projects  |
| Health- 1 | Report Prepared by the Counterpart on the Study Tour to Sinnar, Site-observation Tour from Kassala to Sinnar   |



Source of Base Map : UNDP

**Map of the Project Area  
(State of Kassala)**



## Abbreviations

4Ws	Who-does-What-Where-When
ABS	Agricultural Bank of Sudan
AC	Asbestos
ACORD	Agency for Cooperation and Research in Development (NGO)
ADSL	Asymmetric Digital Subscriber Line (a way of Internet connection)
AHV	Assistant Health Visitor
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
AVR	Automatic Voltage Regulator
BA	Bachelor of Arts
BHU	Basic Health Unit
BHN	Basic Human Needs
BOR	Bed Occupation Rate
CAAFG	Children Associated with Armed Forces and Groups
CBS	Central Bureau of Statistics
CD-BHN	Capacity Development Project for the Provision of Services for Basic Human Needs in Kassala (JICA Project)
CDF	Community Development Fund (MDTF Project)
CFCI	Child Friendly Community Initiative (UNICEF Project)
CHP	Community Health Promoter
CIDA	Canadian International Development Agency
COC	Continuum of Care
CP	Counterpart
CPA	Comprehensive Peace Agreement
CRMA	Crisis and Recovery Mapping and Analysis (UNDP Project)
CS	Caesarean Section
DEM	Digital Elevation Model
DF	Demonstration Farm
DG	Director General
DHSDP	Decentralized Health System Development Project (MDTF Project)
DPD	General Directorate for Economic Planning and Development
DSA	Daily Subsistence Allowance
EC	European Commission
EF	Eastern Front
EFI	Electronic Fuel Injection
EmOC	Emergency Obstetrics Care
ERDP	Eastern Recovery and Development Programme (EU Project)
ESPA	Eastern Sudan Peace Agreement
ESRDF	Eastern Sudan Reconstruction and Development Fund
EU	European Union
FD	Field Day
FFS	Farmers Field School
FGM	Female Genital Mutilation
FMIC	Federal Ministry of International Cooperation
FMoF	Federal Ministry of Finance and National Economy
FP	Family Planning
FRP	Fiberglass Reinforced Plastic
F/S	Feasibility Study
FV	Field Visit
GAM	Global Acute Malnutrition

GFS	Government Financial Statistics
GIS	Geographic Information System
G.L.	Ground Level
GOS	Government of Sudan (now Government of National Unity, Republic of Sudan)
GPS	Global Positioning System
GTZ	German Technical Cooperation Agency (Gesellschaft für Technische Zusammenarbeit)
GVTC	Girba Vocational Training Center
HC	Health Center
HCDG	Higher Council for Decentralized Governance
HDPE	High-Density Polyethylene
HH	Household
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HV	Health Visitor
ICU	Intensive Care Unit
IDCJ	International Development Center of Japan
IDP	Internally Displaced Person
IFAD	International Fund for Agricultural Development
IGA	Income Generating Activity
IMR	Infant Mortality Rate
INSET	In-service Training
IPM	Integrated Pest Management
IT/R	Interim Report
IV	Intravenous
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
KVTC	Kassala Vocational Training Center
LGDPEM	Local Governance Development and Public Expenditure Management (UNDP Project)
MA	Medical Assistant
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MD	Doctor of Medicine
MDTF	Multi-Donor Trust Funds (coordinated by The World Bank)
MIS	Management Information System
M/M	Minutes of Meeting
MMR	Maternal Mortality Ratio
MNH	Maternal and Neonatal Health
MNP	Mother Nile Project (Official Project Name: Frontline Maternal and Child Health Empowerment Project) (JICA Project)
MS	Microsoft
MW	Midwife or Midwifery
N/A	Not Available
NGO	Non-Governmental Organization
NM	Nurse Midwife
O&M	Operation and Maintenance
O/G	Obstetrics and Gynecology
OJT	On-the-Job Training
PC	Personal Computer
PCM	Project Cycle Management
PDCA	Plan-Do-Check-Action
PDF	Popular Defense Force
PDM	Project Design Matrix

---

PF	Promote Family Planning
PHC	Primary Health Care
PNC	Postnatal Care
PO	Plan of Operation
PV	Photovoltaic
PVC	Polyvinyl Chloride
PWC	Public Water Corporation
PWCT	Public Water Corporation Training Center
RA	Research Assistant
R/D	Record of Discussion
RFQ	Request for Quote
RH	Reproductive Health
RLSNRM	Recovery of Livelihoods and Sustainable Natural Resource Management Project (UNDP Project)
RVS	Rural Video Show
SAF	Sudan Alliance Forces
SBA	Skilled Birth Attendant
SCMAG	Sudan Conflict Management Advisory Group
SCVTA	Supreme Council for Vocational Training and Apprenticeship
SDD	Sudanese Dinar
SDG	Sudanese Pound
SLWHA	Sudanese Living with HIV/AIDS (NGO)
SMoAFI	State Ministry of Agriculture, Forestry and Irrigation
SMoE	State Ministry of Education
SMoF	State Ministry of Finance, Economy and Labor Force
SMoH	State Ministry of Health
SMoHE	State Ministry of Higher Education and Scientific Research
SMoSACA	State Ministry of Social and Cultural Affairs
SOC	Standard Obstetric Care
SPC	Strategic Planning Council
SPLM	Sudan People's Liberation Movement
SRC	Sudanese Red Crescent (NGO)
STD	Sexually Transmitted Disease
SWC	State Water Corporation
S.W.L.	Static Water Level
TMC	Training Management Cycle
TOKTEN	Transfer of Knowledge through Expatriate Nationals (UNDP Project)
TOT	Training of Trainers
TRMA	Threat and Risk Mapping and Analysis
TTEA	Technology Transfer and Extension Administration
UN	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UPS	Uninterruptible Power Supply
VMW	Village Midwife
WAAFG	Women Associated with Armed Forces and Groups
WASH	Water, Sanitation and Hygiene (UNICEF Program)
WDC	Women Development Center
WES	Water and Environmental Sanitation (UNICEF Program)
WHO	World Health Organization
WUA	Water Users Association

## Executive Summary

### 1. Background and Objective of the Project

The security situation in Eastern States (Kassala, Gedaref and Red Sea) has greatly improved since the signing of the Eastern Sudan Peace Agreement (ESPA) between the Government of Sudan and the Eastern Front in 2006. By the beginning of June 2008, the region had received \$22.5 million under the Eastern Sudan Reconstruction and Development Fund (ESRDF). While the ESPA's implementation took a long time to start, the process has since been accelerated. The international community is expected to pay more attention to Eastern Sudan.

The socioeconomic situation of the State of Kassala is one of the worst in the country. Political, social and economic marginalization is considered a major factor contributing to the conflict in the region. The state has been experiencing underdevelopment and chronic poverty. The people, especially in rural areas, are constantly suffering from food insecurity due to inadequate crop harvest frequently caused by droughts and floods. The malnutrition rates continue to be the highest in the country, and the global acute malnutrition rates generally exceed the emergency threshold of 15%. Access to safe drinking water is limited. The state has high under-five mortality rate, close to the alarm threshold (2.0 per 10,000 per day) and high maternal mortality rates, as well as school dropout rates.

Against this background, the State Government of Kassala requested, through the Higher Council for Decentralized Governance (HCDG), the Government of National Unity, assistance from the Government of Japan to the Capacity Development Project for the Provision of Services for Basic Human Needs in Kassala (hereinafter referred to as the "Project"). The main objective of the Project is to strengthen the capacity of public service providers in the state's five priority sectors, i.e., i) development planning and management, ii) water supply, iii) agriculture and livelihood improvement, iv) maternal and child health and v) vocational training. The preparation phase (October 2010 – March 2011) will be followed by the implementation phase (May 2011 – April 2014).

### 2. The Preparation Phase of the Project

The main objective of the preparation phase is to formulate a detailed plan of the Project. The following are major activities conducted during the preparation phase.

- i. Situation analysis of the present conditions of Kassala State (planning, water supply, agriculture and livelihood, maternal and child health, and vocational training) through baseline surveys (field visits, interviews, day-to-day collaboration, workshops, etc.) as well as interviews and discussions with the counterparts, donors and NGOs
- ii. Capacity assessment of the counterparts in the Kassala State Government
- iii. Development of a draft Project Design Matrix (PDM) and a draft Plan of Operation (PO) for 3-year technical cooperation (the implementation phase) which is planned to be from May 2011 to April 2014, through discussions with the Sudanese counterparts and the JICA Sudan Office
- iv. Preparatory work for the implementation phase, such as designing the detailed plan for the pilot projects, selecting pilot communities and target groups for the pilot projects, etc.
- v. Discussion with the counterparts on the necessary equipment for the implementation phase and the procurement of urgently needed equipment
- vi. Establishment of the five project offices in i) the State Ministry of Finance, Economy and Labor Force, ii) State Water Corporation, iii) the State Ministry of Agriculture, Forestry and Irrigation, iv) the State Ministry of Health, and v) Kassala Vocational Training Center through necessary rehabilitation works and procurement of equipment for these offices

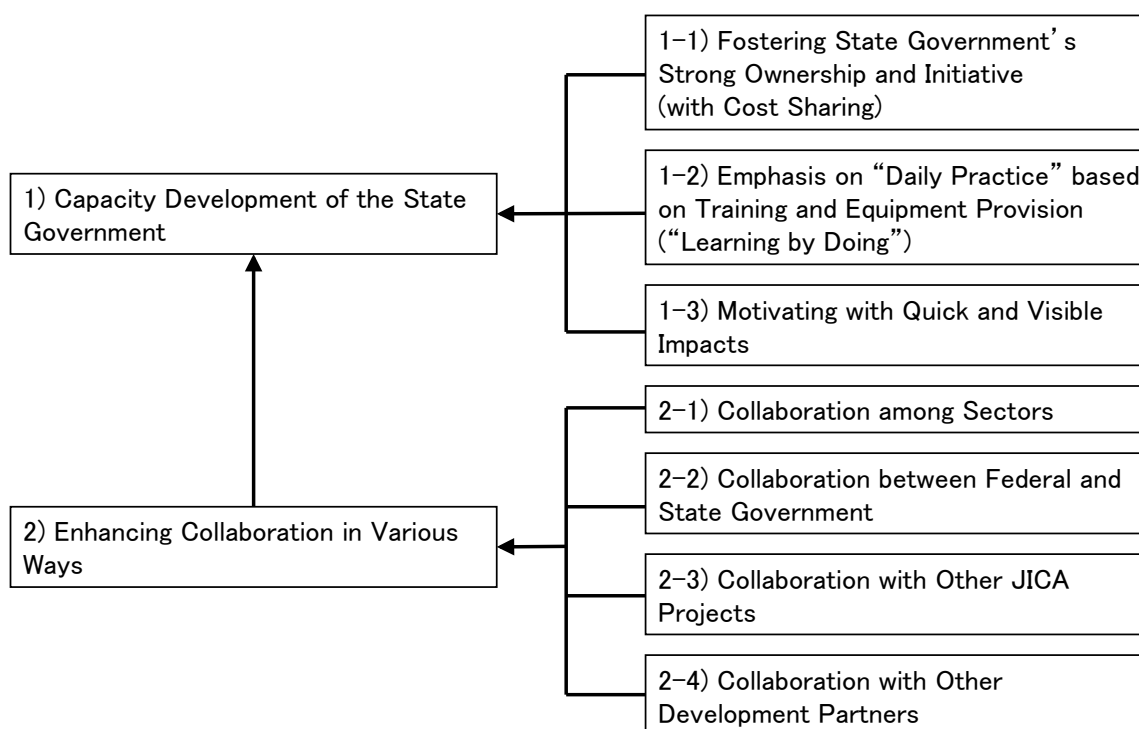
Based on the results of the situation analysis and capacity assessment, the Japan International Cooperation Agency (JICA) team, together with the Sudanese counterparts, developed the draft Project Design Matrix (PDM) and the draft Plan of Operation (PO) for 3-year technical cooperation (the implementation phase). These PDM and PO were discussed during the Ex-ante Evaluation from 20 January to 27 January 2011. The results of discussions during the Ex-ante Evaluation were compiled in the form of the Minutes of Meetings (M/M) signed by the Resident Representative of the JICA Sudan Office and the Kassala State Minister for Finance on 27 January 2011.

The revised PDM and PO attached as annexes to M/M were then perused by the JICA Headquarters and finally approved after slight modifications of some indicators. The approved PDM and PO were attached as annexes to the Record of Discussion (R/D) for the Project. The R/D was signed by the Resident Representative of JICA Sudan Office and the Governor of Kassala State on 23 February 2011 in Khartoum, witnessed by the Minister for International Cooperation (FMIC) and the Minister/General Secretary for Higher Council for Decentralized Governance (HCDG) at the federal level.

After the signing of R/D, discussions on PDM and PO continued between the Sudanese counterparts and the JICA team in order to respond to the latest needs of the Kassala State Government. As a result of discussions, a small modification to the activity 1.3 (support to the State Strategic Plan) and more specific and accurate expressions for some indicators, together with the baseline values and target values, were proposed as a revised PDM.

### 3. Recommendations for the Implementation Phase

This report describes the detailed results of the situation analysis, the detailed plan of the implementation phase, and the preparatory work conducted from November 2010 to March 2011. Based on the experiences of the preparation phase, the key elements shown in Figure S.1 are identified as important elements for successful implementation of the Project. The details on each element are explained below.



**Figure S.1: Key Elements to Make the Project Successful**

## **1) Capacity Development of the State Government**

### **1-1) Fostering State Government's Strong Ownership and Initiative (with Cost Sharing)**

During the project formulation, JICA discussed with Governor and Ministers in Kassala State in order to design the Project based on their own needs and priorities. During the preparation phase, JICA team have also carefully listened to the voices and needs of the counterparts as well as the people in the target communities. As a result, the Project is designed to solve the real problems felt by the counterparts and the local people, so that they can feel strong ownership and initiative towards the Project. JICA always has to make it clear that the Project is designed based on their request and priorities, so this is not JICA-initiated Project but the State Government-initiated Project. While the State Government has already secured the Local Component budget for the preparation phase of the Project, it is important to remind the State Government of realizing their commitment in cost sharing during the implementation phase.

### **1-2) Emphasis on "Daily Practice" based on Training and Equipment Provision ("Learning by Doing")**

The Project aims at "practical" capacity development of the Kassala State Government. But only providing training and equipment cannot ensure the "practical" capacity development of the government. More important is "daily practice" of what they have learned from training and "daily utilization" of the equipment provided. Therefore, the implementation phase needs to focus more on "daily practice" based on training received and equipment provided. Most of the pilot activities in the implementation phase are designed for this purpose, so that the government can improve their capacity through "practice" in the field ("Learning by Doing" approach).

### **1-3) Motivating with Quick and Visible Impacts**

The pilot activities can serve not only as a practice in the field, but also as a tool to motivate the counterparts through quick and visible impacts on the local population. During the preparation phase, provision of training and equipment has also significantly improved the counterparts' motivation. During the implementation phase, it is important to start the pilot activities, conduct necessary training, and procure urgently needed equipment as quickly as possible, so that visible impacts of these activities can motivate the counterparts, and, as a result, improve their commitment and ownership in the Project.

## **2) Enhancing Collaboration in Various Ways**

### **2-1) Collaboration among Sectors**

The Project consists of five sectors, namely planning, water supply, agriculture and livelihood, health and vocational training. It is complicated to administer this kind of multi-sector project, but it can have its own advantage: better collaboration among sectors. In order to facilitate collaboration among multi-sectors in the Project, pilot sites for each cluster have been selected to overlap as much as possible, as shown in Figure S.2. During the implementation phase, more ideas for collaboration among sectors may come out, and the Project can realize the "synergy effects" among the sectors. To promote such collaboration and communication among five sectors, it is important for the Project to continue to organize the Joint Coordinating Committee (JCC) meetings regularly (for example, bi-monthly).

### **2-2) Collaboration between Federal and State Government**

The Project is the Kassala State Government's Project, but the strong technical and financial support from the Federal Government is very important. During the preparation phase, SCVTA sent its staff to assist TOT in Kassala VTC, and Federal Ministry of Health also sent two facilitators to TOT for HVs in

Kassala. At the Federal level, Higher Council for Decentralized Governance (HCDG) is committed in coordination between Federal Government and State Government, and has supported the Project to organize Federal level coordination meetings. It is important to continue this collaboration mechanism during the implementation phase.

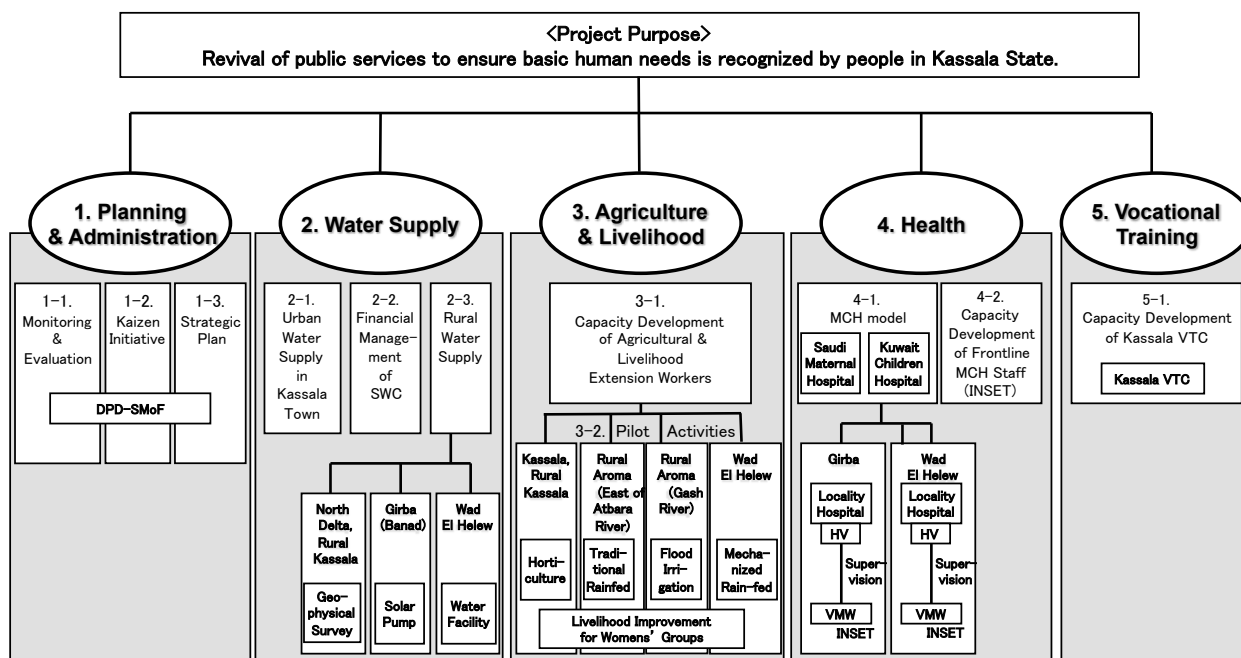


Figure S.2: Pilot Sites for Five Clusters in the Project

### 2-3) Collaboration with Other JICA Projects

The Project is a large-scale project with five sectors, but it will be difficult to respond to enormous needs in each sector in the Project, so it will be cost effective to utilize available resources developed by other JICA sector-wise Projects at the national level, since JICA is implementing Project for Human Resources Development for Water Supply at Public Water Corporation (PWC) in the water sector, Capacity Building Project for the Implementation of the Executive Programme for the Agricultural Revival in the agriculture sector, Frontline Maternal and Child Health Empowerment Project (Mother Nile Project) in the health sector, and Project for Strengthening on Vocational Training at Supreme Council for Vocational Training and Apprenticeship (SCVTA) in vocational training sector.

### 2-4) Collaboration with Other Development Partners

Located in the center of the civil war-affected Easter Region, the Kassala State Government has been receiving various assistances from many donors and NGOs. Therefore, the Project needs to be implemented in close coordination with other development partners. Currently donor coordination in the state level is not enough, so it is recommended that the Project help the Sudanese counterparts to take the initiative in regular, more frequent donor coordination in each cluster. Since the Directorate of Economic Planning and Development (DPD) of State Ministry of Finance, Economy and Labor Force is in charge of aid management in the state, it will be useful to help DPD to reactivate the state-level donor coordination mechanism. It is also important to invite relevant donors and NGOs to the JCC meetings so that the Project can facilitate the effective collaboration with them and avoid duplication with their activities.

## Chapter 1 Overview

### 1.1 Background

#### (1) Overview of Kassala State

Sudan is the largest country in Africa, covering 2.5 million km<sup>2</sup>. The country has been torn apart by conflict since independence in 1956. In January 2005, the Comprehensive Peace Agreement (CPA) formally ended almost 22 years of war between the north-based Government of Sudan (GOS) and the south-based Sudan People's Liberation Movement (SPLM). The situation in Eastern States (Kassala, Gedaref and Red Sea) has greatly improved since the signing of the Eastern Sudan Peace Agreement (ESPA) between the government and the Eastern Front in 2006. By the beginning of June 2008, the region had received \$22.5 million under the Eastern Sudan Reconstruction and Development Fund (ESRDF)<sup>1</sup>. While the ESPA's implementation took a long time to start, the process has accelerated. The international community is expected to pay more attention to Eastern Sudan, in addition to Southern Sudan and Darfur<sup>2</sup>.

In Kassala State, more than half of the 1.8 million populations live in rural areas, largely depending on pastoral farming (Table 1.1.1). The state's land, 42,282 km<sup>2</sup>, is dominated by arid and semi-arid areas with the average rainfall of 25-550 mm per annum. The land is mostly utilized for grazing rather than crop cultivation. The state is also characterized by the significant presence of internally displaced persons (IDP) due to economic hardships, droughts and conflict in the region and refugees from Eritrea due to tensions with Ethiopia. The principle ethnic division is between those of African descent and those of Arab. Populations are also split along sedentary and nomadic lines.

**Table 1.1.1: Overview of Kassala State**

<b>Total Area</b>	42,282 km <sup>2</sup>
<b>Land Use</b>	
Range land	52%
Potential agricultural area	39%
Forest and unproductive land	9%
<b>Population</b>	1,789,806
Urban	35%
Rural	53%
Pastoral	12%
<b>Population growth rate</b>	2.5% (2.6% for the whole nation)
<b>Population density</b>	37 persons/km <sup>2</sup>
<b>Ex-combatants</b>	2,474 (EF: 1,390, Child ex-combatants: 243, PDF+SAF: 841)
<b>Refugees</b>	95,000 (mainly from Eritrea)
<b>Internally displaced persons (IDP)</b>	68,000
<b>Main economic activities</b>	Agriculture (cotton, sorghum, sesame, peanut, wheat, sugarcane, vegetables, fruits, etc.) and livestock production (cattle, camels, sheep, goats, etc.)
<b>Major ethnic groups</b>	Beja, Rashaida, Arabs (Shukriyya, Halawin, etc.) and Nubians
<b>State government budget</b>	SDD 733.99 million*
<b>Annual rainfall</b>	235.1 mm (2006)

\* SDD 100 = SDG 1. US\$1 = SDG 2.34 (as of November 2010). EF = Eastern Front; PDF = Popular Defense Force; SAF = Sudan Alliance Forces

Sources: JICA Sudan Office, Preparatory Study on the "Capacity Development Project for the Provision of Services for Basic Human Needs in Kassala"; Central Bureau of Statistics, "5th Sudan Population and Housing Census 2008", 2010; UNST and UN Resident Coordinator Office in Sudan, "East Sudan Analysis and Priorities", 2007; State Ministry of Agriculture and Irrigation, "Kassala State Basic Information", April 2009; and Central Bureau of Statistics, "Sudan Statistical Yearbook 2006".

<sup>1</sup> United Nations, United Nations and Partners 2009 Work Plan for Sudan, 2008, p. 117.

<sup>2</sup> The International Donors and Investors Conference for East Sudan was organized by Kuwait Fund for Arab Economic Development (KFAED) in Kuwait in early December 2010.



The socioeconomic situation of Kassala State is one of the worst in the country as indicated in Table 1.1.2. Political, social and economic marginalization is considered a major factor contributing to the conflict in the region. The state has been experiencing underdevelopment and chronic poverty. The people, especially in rural areas, are constantly suffering from food insecurity due to inadequate crop harvest. The malnutrition rates continue to be the highest in the country, and the global acute malnutrition (GAM) rates generally exceed the emergency threshold of 15%. Access to safe drinking water is limited. The state has high under-five mortality rate, close to the alarm threshold (2.0 per 10,000 per day) and high maternal mortality rates, as well as school dropout rates.

**Table 1.1.2: Major Socioeconomic Indicators of the State of Kassala**

Indicator	Kassala State	Sudan
Households not self-sufficient in food	91%	N/A
Access to safe drinking water	38.7% <sup>2</sup>	56.1% (2006)
Global Acute Malnutrition (GAM) rate	18% (2006) <sup>3</sup>	N/A
Under-five mortality rate	2.01/10,000/day <sup>4</sup>	N/A
Maternal mortality ratio	1,414/100,000	450/100,000
Net primary enrolment rate	34.6%	43%
School dropout rate	23.8%	21% (2004) <sup>5</sup>

Notes: 1) The data are for 2005 except those for "access to safe drinking water" and "school dropout rate".

2) Percentage of the rural population.

3) The emergency threshold is 15%.

4) According to the International Reference Indicators, the alarm threshold is 2.0 per 10,000 per day

5) Calculated from the percentage of children reaching grade 5 of grade 1 students (79%).

Sources: JICA Sudan Office, Preparatory Study on the "Capacity Development Project for the Provision of Services for Basic Human Needs in Kassala", 2010; "Sudan Household Health Survey 2006", UNST and UN Resident Coordinator Office in Sudan, "East Sudan Analysis and Priorities", 2007; and UNDP, "Human Development Report 2007-2008".

## (2) Justification for the Project

Against the background, in January 2010, the State Government of Kassala requested, through the Higher Council for Decentralized Governance, the Government of National Unity, assistance from the Government of Japan to the Capacity Development Project for the Provision of Services for Basic Human Needs in Kassala (hereinafter referred to as the Project). The main objective of the Project is to strengthen the capacity of public service providers in the state's priority sectors, i.e., water, agriculture, health and vocational training. In May 2010, the Government of Japan has approved the request as a technical cooperation project. In June and July 2010, the JICA Sudan Office conducted a series of field studies in the state and discussed the basic design of the preparation phase of the Project with the State Government.

### 1.2 Objectives of the Preparation Phase

The main objective of the preparation phase is to formulate a detailed plan for the Project. The specific objectives are as follows.

- (1) To conduct analysis on the overall situation of the State of Kassala and the target sectors, i.e., water supply, agriculture and livelihood improvement, health and vocational training.**
- (2) To formulate a draft detailed plan for the project.**
- (3) To prepare a draft ex-ante evaluation table for the project.**
- (4) To establish offices for the project activities.**
- (5) To procure equipment urgently needed for the project implementation.**
- (6) To implement pilot projects in sectors which need urgent assistance such as health and vocational training.**

### 1.3 Target Area

The area to be covered by the Project is Kassala State. Pilot projects are implemented in certain locations within the state during the preparation phase, as well as during the implementation phase.

### 1.4 Work Flow

Figure 1.4.1 shows the workflow of the preparation phase.

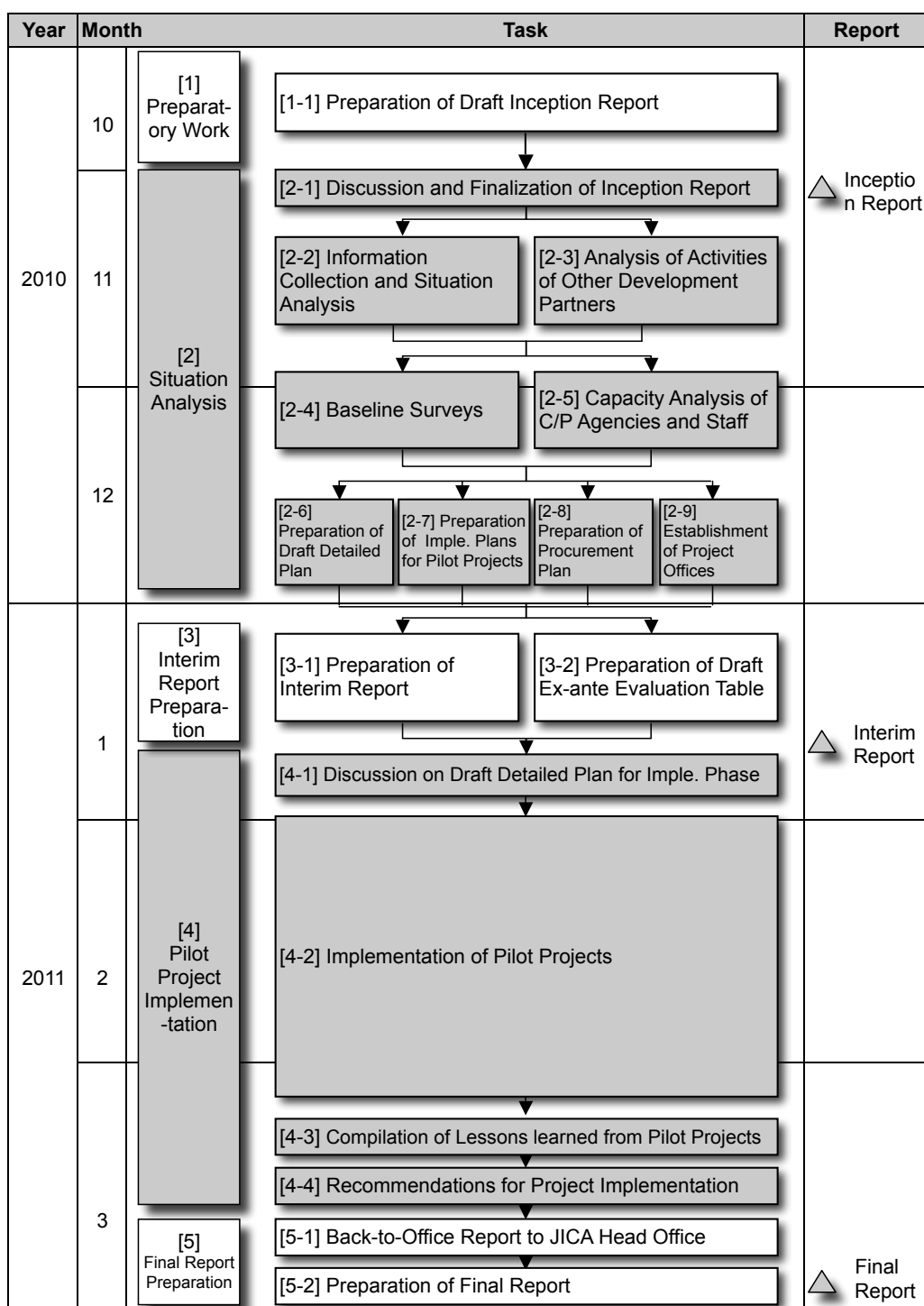


Figure 1.4.1: Workflow of the Preparation Phase

## 1.5 Work Schedule

The preparation phase was implemented for the five-month period from late October 2010 to late March 2011 in Sudan and Japan. The overall work schedule is as indicated in Table 1.5.1.

**Table 1.5.1: Work Schedule**

Major Task	No.	Task	Preparation Phase						
			2010			2011			
			Oct	Nov	Dec	Jan	Feb	March	
[1] Preparatory Work	[1-1]	Preparation of Draft Inception Report	□						
[2] Situation Analysis	[2-1]	Discussion and Finalization of Inception Report		■					
	[2-2]	Information Collection and Situation Analysis		■					
	[2-3]	Analysis of Activities of Other Development Partners		■					
	[2-4]	Baseline Surveys		■	■				
	[2-5]	Capacity Analysis of C/P Agencies and Staff		■	■				
	[2-6]	Preparation of Draft Detailed Plan for Implementation Phase				■			
	[2-7]	Preparation of Implementation Plans for Pilot Projects				■			
	[2-8]	Preparation of Procurement Plan				■			
	[2-9]	Establishment of Project Offices				■			
[3] Interim Report Preparation	[3-1]	Preparation of Interim Report				□			
	[3-2]	Preparation of Draft Ex-ante Evaluation Table				□			
[4] Pilot Project Implementation	[4-1]	Discussion on Draft Detailed Plan for Implementation Phase				■			
	[4-2]	Implementation of Pilot Projects				■	■	■	
	[4-3]	Compilation of Lessons learned from Pilot Projects							■
	[4-4]	Recommendations for Project Implementation							■
[5] Final Report Preparation	[5-1]	Back-to-Office Report to JICA Head Office							□
	[5-2]	Preparation of Final Report							□
				▲		▲			▲
			[Reports]	Inception Report	Interim Report	Final Report			
			■ Work in Sudan	□ Work in Japan					

## 1.6 JICA Study Team and Assignment

The preparation phase was implemented by a team of the consultants from the International Development Center of Japan (IDCJ), commissioned by JICA. The planned and actual composition of the team and their assignment periods are as shown in Tables 1.6.1 and 1.6.2, respectively.

**Table 1.6.1: JICA Study Team Members and Assignment Periods of Each Member (Planned)**

Assignment	Name	Affiliation	2010			2011		
			Oct	Nov	Dec	Jan	Feb	March
1. Team Leader/ Rehabilitation Program Advisor	Mr. Kiyofumi TANAKA	IDCJ	□	■	■	■	■	□
2. Water Supply	Mr. Kan SHICHIJO	IDCJ (ESS)		■	■			
3. Livelihood Enhancement	Mr. Hiroshi YOSHIMURA	IDCJ		■	■			
4. Maternal and Child Health 1	Ms. Hiromi SUWA	IDCJ			■		■	□
5. Maternal and Child Health 2	Ms. Shiho SASADA	IDCJ (S-Planning)		■	■		■	■
6. Medical Facilities and Equipment	Mr. Akio KANEKO	IDCJ (AMHN)			■	■		
7. Vocational Training 1	Mr. Atsunori KUME	IDCJ (KRI)			■			
8. Deputy Team Leader/ Vocational Training 2	Ms. Satoko EMOTO	IDCJ	■	■	■	■	■	□
9. Coordinator/ Procurement	Ms. Makiko TADA	IDCJ	■	■	■	■	■	□
Report				▲		▲		▲
				Work Plan		Interim Report		Final Report

**Table 1.6.2: JICA Study Team Members and Assignment Periods of Each Member (Actual)**

Responsible Area(s)	Name	Organization	2010			2011		
			Oct	Nov	Dec	Jan	Feb	Mar
1. Team Leader / Post- Conflict Reconstruction	Kiyofumi Tanaka	IDCJ		■	■	■	■	■
2. Water Supply	Kan Shichijo	IDCJ (ESS)		■	■		■	■
3. Livelihood	Hiroshi Yoshimura	IDCJ		■	■			
4. Arid Land Agriculture / Crop Cultivation	Naoki Koga	IDCJ (AAI)					■	■
5. Agricultural Extension	Ippei Itakura	IDCJ					■	■
6. Maternal and Child Health	Hiromi Suwa	IDCJ			■		■	■
7. Maternal and Child Health	Shiho Sasada	IDCJ (S-Planning)		■	■			
8. Medical Facilities and Equipment	Akio Kaneko	IDCJ (AMHN)			■	■		
9. Vocational Training	Atsunori Kume	IDCJ (KRI)			■			
10. Deputy Team Leader / Vocational Training	Satoko Emoto	IDCJ	■	■	■	■	■	□
11. Coordinator / Procurement	Makiko Tada	IDCJ	■	■	■	■	■	□

Work in Japan □ Work in Sudan ■

Abbreviation:

IDCJ = International Development Center of Japan  
KRI = Koei Research Institute

ESS = Earth System Science  
AAI = Appropriate Agriculture International

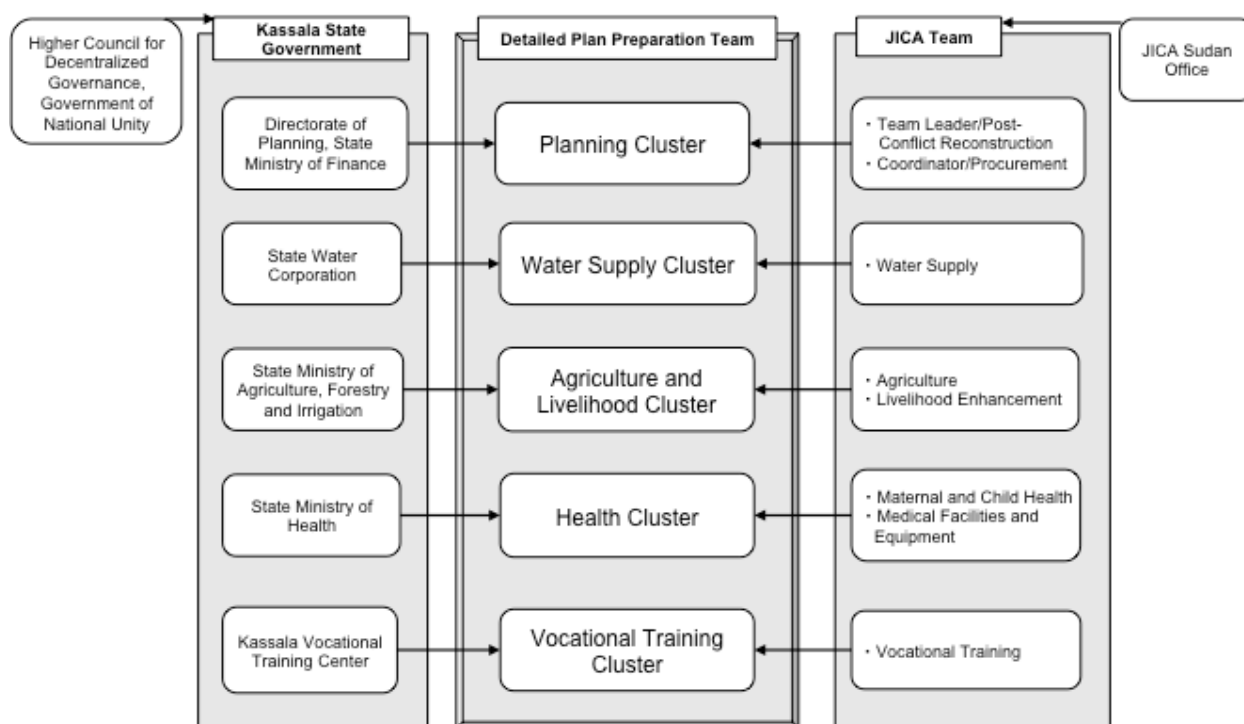
The above-mentioned changes are because: 1) the formulation of the detailed plan for the agricultural sector, initially planned as a task of the JICA-assisted Capacity Building Project for the Implementation of “the Executive Programme for the Agricultural Revival” (under the Federal Ministry of Agriculture), was integrated into the Project for more efficient planning coordination; and 2) the preparatory works during January to March 2011 were added in the water supply and agriculture and livelihood clusters, in addition to the health and vocational training clusters.

### 1.7 Counterparts

The counterpart (CP) agencies of the Project are the State Ministry of Finance, Economy and Labor Force (SMoF), State Water Corporation (SWC), State Ministry of Agriculture, Forestry and Irrigation (SMoAFI), State Ministry of Health (SMoH), the unit in charge of vocational training and Kassala Vocational Training Center (KVTC). The focal agency for coordination at the federal level is the Higher Council for Decentralized Governance, the Government of National Unity.

The target sectors of the project are those prioritized by the State Government for JICA’s assistance, that is 1) planning capacity of the Directorate of Economic Planning and Development (DPD), SMoF, 2) water supply, 3) agriculture and livelihood enhancement, 4) health, and 5) vocational training.

Cooperation with counterpart personnel is indispensable because the Project aims at strengthening their capacity. As illustrated in Figure 1.7.1, the JICA team member(s) teamed up with counterpart personnel in each cluster to formulate the detailed plan of the Project, as well as to plan, implement, monitor and evaluate pilot projects, under the ownership of the counterpart personnel.



**Figure 1.7.1: Implementation Arrangement in the Preparatory Phase**

### 1.8 Project Coordination Mechanism during the Preparation Phase

To facilitate coordination and communication between the Sudanese counterparts and the JICA team during the preparation phase, several coordination meetings were at the Federal level and the Kassala State level, as shown in Table 1.8.1.

At the state level, the Joint Coordinating Committee (JCC) was organized for the following purposes:

- 1) Discuss strategies of the Project;
- 2) Formulate an operational work plan for the preparation phase based on the basic design;
- 3) Make decisions and recommendations relevant to the overall management of the Project;
- 4) Examine major issues arising from or in connection with the Project;
- 5) Work out the modification of activities when necessity arises in the course of the implementation; and
- 6) Assist to secure budgets for the Project.

JCC is composed of the following members:

Chairperson: Director General (DG) of State Ministry of Finance, Economy and Labor Force (SMoF)

Members:

Representatives of the Kassala State Government

- Director of General Directorate of Planning and Development (DPD), SMoF
- Representative(s) of State Ministry of Health (SMoH)
- Representative(s) of State Ministry of Agriculture, Forestry and Irrigation (SMoAFI)
- Representative(s) of Kassala Vocational Training Center (KVTC)
- Representative(s) of State Water Cooperation (SWC)
- Others appointed by SMoF

Representatives of the Federal Government

- Representative(s) of Higher Council for Decentralized Governance (HCDG)
- Representative(s) of Federal Ministry of International Cooperation (FMIC)
- Representative(s) of Federal Ministry of Finance and National Economy (FMoF)

Representatives on the Japanese side

- Japanese team of the Project
- Representative(s) of JICA Sudan Office
- Others appointed by JICA Sudan Office

The coordination meetings held at the federal and state levels during the preparation phase are as presented in Table 1.8.1 (For the memorandums on JCC meetings, see Annex 5).

**Table 1.8.1: Project Coordination Meetings at the Federal and State Level**

Name of the Meeting	Date	Venue	Participants	Major Issues Discussed
Federal Coordination Meeting	1 November 2010	HCDG, Khartoum	- HCDG (Chair) - FMIC - Supreme Council for - Vocational Training and Apprenticeship (SCVTA) - JICA Sudan Office - JICA Team (No. of Participants = 7)	- Presentation and discussion on the Inception Report - Administrative structure for the preparation phase
1 <sup>st</sup> Joint Coordinating Committee (JCC) Meeting	3 November 2010	DPD-SMoF, Kassala	- SMoAFI (Chair) - DPD - KVTC - SWC - HCDG - FMIC - JICA Sudan Office - JICA Agriculture Team - JICA Team	- Presentation and discussion on the Inception Report - Discussion on local component budget - Administrative structure for the preparation phase

Name of the Meeting	Date	Venue	Participants	Major Issues Discussed
			(No. of Participants = 13)	
2 <sup>nd</sup> Joint Coordinating Committee (JCC) Meeting	20 December 2010	DPD-SMoF, Kassala	<ul style="list-style-type: none"> <li>- DG, SMoF (Chair)</li> <li>- DPD</li> <li>- SWC</li> <li>- SMoAFI</li> <li>- SMoH</li> <li>- KVTC</li> <li>- HCDG</li> <li>- FMIC</li> <li>- JICA Sudan Office</li> <li>- JICA Agriculture Team</li> <li>- JICA Team</li> </ul> (No. of Participants = 28)	<ul style="list-style-type: none"> <li>- Presentation on the findings from the situation analysis</li> <li>- Discussion on the draft plan for the activities in the implementation phase</li> </ul>
Federal Coordination Meeting	20 January 2011	HCDG, Khartoum	<ul style="list-style-type: none"> <li>- HCDG (Chair)</li> <li>- FMIC</li> <li>- FMoF</li> <li>- Federal Ministry of Health (FMoH)</li> <li>- Federal Ministry of Agriculture and Forestry (FMoAF)</li> <li>- SCVTA</li> <li>- Public Water Corporation (PWC)</li> <li>- JICA Sudan Office</li> <li>- JICA Team</li> </ul> (No. of Participants = 18)	<ul style="list-style-type: none"> <li>- Presentation and discussion on the draft PDM with the JICA Ex-ante Evaluation Team</li> </ul>
3 <sup>rd</sup> Joint Coordinating Committee (JCC) Meeting	26 January 2011	DPD-SMoF, Kassala	<ul style="list-style-type: none"> <li>- DPD (Chair)</li> <li>- SWC</li> <li>- SMoAFI</li> <li>- SMoH</li> <li>- KVTC</li> <li>- SPC</li> <li>- HCDG</li> <li>- FMIC</li> <li>- JICA Headquarters</li> <li>- JICA Sudan Office</li> <li>- JICA Team</li> </ul> (No. of Participants = 21)	<ul style="list-style-type: none"> <li>- Presentation and discussion on the draft PDM with the JICA Ex-ante Evaluation Team</li> </ul>
4 <sup>th</sup> Joint Coordinating Committee (JCC) Meeting	13 March 2011	Capacity Development Hall of SMoF, Kassala	(Expected Participants) <ul style="list-style-type: none"> <li>- DG, SMoF (Chair)</li> <li>- DPD</li> <li>- SWC</li> <li>- SMoAFI</li> <li>- SMoH</li> <li>- KVTC</li> <li>- UNHCR</li> <li>- MDTF</li> <li>- ERDP</li> <li>- JICA Sudan Office</li> <li>- JICA Team</li> </ul> (No. of Participants = 23)	<ul style="list-style-type: none"> <li>- Presentation and discussion on the Draft Final Report</li> <li>- Discussion on the proposed revision of PDM</li> </ul>

## 1.9 Project Office Set-up and Procurement of Equipment

### (1) Project Office Set-up

The main project office was set up at the General Directorate for Economic Planning and Development, the State Ministry of Finance (DPD-SMoF) for the JICA team members and national staff working for the Project. Project offices in other counterpart agencies, such the State Water Corporation (SWC), Technology Transfer and Extension Administration, the State Ministry of Agriculture, Forestry, and Irrigation (TTEA-SMoAFI), SMoH and Kassala VTC (KVTC) were also established.

Although office space was allocated within each counterpart agency, the rooms required comprehensive renovation (painting walls, installing electrical lights and outlets, etc.) and equipment (office furniture, locks, air conditioners, windows, carpets, curtains, etc.). The only exception was KVTC, where the JICA team was provided with a room in the new office building built with UNDP's assistance and thus merely procured furniture. The renovation and furnishing were done with the JICA Sudan Office's funds. The project offices became operational, safer, cleaner, better ventilated and lighted in the first half of the preparation phase. Table 1.9.1 shows office furniture and equipment procured for each cluster office.

**Table 1.9.1: Office Equipment and Furniture procured by the Project**

Item	Location	DPD-SMoF	SWC	SMoH	SMoAFI	Kassala VTC
Desks and chairs**		4	2	4	4	4
Book shelf		1	1	1	1	1
Air Conditioner		1	1	1	1	0
Telephone and Fax with ADSL		2	N/A	N/A	N/A	N/A
Photocopier		1	N/A	N/A	N/A	N/A
Black & White Laser Printer		1	1*	1*	1*	1*
UPS		1	1	1	1	1
Stabilizer		1	1	1	1	1
Wi-Fi Router		1	1	1	1	1
Flipchart stand		1	1	n/a	n/a	1
Projector and screen		1 (for common use in the team)				
Scanner		1 (ditto)				
Digital video camera		1 (ditto)				
Digital camera		1 (ditto)				
Laptop computers		7 (ditto)				
Portable color printer		1 (ditto)				

Notes: \*Multi function printer \*\* Extra chairs are not included

Besides the equipment listed above, the JICA Sudan Office provided five off-road vehicles, three pickup trucks and two station wagons, to the Project. While the vehicles facilitate the day-to-day operations of the JICA team, they tend to undergo long distance drives and thus require frequent maintenance. Since there is no garage with good facilities and qualified mechanics in Kassala Town, it was necessary to take the vehicles to the dealers in Khartoum for regular maintenance service during the preparation phase. It is important to keep the vehicles well maintained during the implementation phase.

### (2) Procurement of Equipment

The JICA team also assisted the JICA Sudan Office in procuring equipment which was urgently needed for the pilot activities during the preparation phase and equipment for the implementation phase. A procurement plan for equipment (including specifications and cost estimates) was drawn in collaboration with the counterpart personnel based on the draft detailed plan in each cluster. The list was provided to suppliers as a request for quote (RFQ), and the suppliers responded with their lowest prices. Then the JICA Sudan Office or the JICA team, depending on the total costs of each lot of procurement, placed an



order for the listed items. The details of procurement assisted by the JICA team in each cluster are presented in Section 2 and Annex 3.3.1.

Most of the equipment was procured through local supply channels in Sudan and has thus taken a shorter time for delivery. But there is a limited number of local suppliers in Khartoum and Kassala with only a small number of stocks for the equipment required by the Project, so equipment was often not delivered on time. Even after the order was placed and accepted by a supplier, it had to be re-done, i.e., a change in the model, the price and even the supplier, due to a shortage of supplies or stock. Such a situation adversely affected and delayed the implementation of the project activities. Since procurement is expected to consume considerable time also during the implementation phase, it is necessary to assign a procurement expert in JICA team and make procurement process more effective based on the experiences and information during the preparation phase.

---

## Chapter 2 Work conducted from October 2010 to March 2011

### 2.1 Overview of the Work

The preparation phase of the Project was implemented from October 2010 to March 2011. The following are major activities conducted during the phase.

- i. Situation analysis of the present conditions of Kassala State (planning, water supply, agriculture and livelihood, maternal and child health and vocational training) through baseline surveys (field visits, interviews, day-to-day collaboration, workshops, etc.) as well as interviews and discussions with the counterparts, donors and NGOs
- ii. Capacity assessment of the counterparts in the Kassala State Government
- iii. Development of a draft Project Design Matrix (PDM) and a draft Plan of Operation (PO) for 3-year technical cooperation (the implementation phase) which is planned to be from May 2011 to April 2014, through discussions with the Sudanese counterparts and the JICA Sudan Office
- iv. Preparatory work for the implementation phase, such as designing the detailed plans for the pilot projects, selecting target communities and groups for the pilot projects, etc.
- v. Discussions with the counterparts on necessary equipment for the project activities and the procurement of urgently needed equipment for the preparation phase as well as equipment for the implementation phase
- vi. Establishment of the five project offices in DPD-SMoF, SWC, TTEA-SMoAFI, SMoH and KVTC, through necessary rehabilitation works and procurement of equipment for these offices.

The findings and results of these activities are presented in this report.

Based on the situation analysis and capacity assessment, JICA team and the Sudanese counterparts jointly designed the draft Project Design Matrix (PDM) and the draft Plan of Operation (PO) for 3-year technical cooperation (the implementation phase). The draft PDM and PO were discussed among the stakeholders during the Ex-ante Evaluation, which was conducted from 20 January to 27 January 2011. The results of discussions during the Ex-ante Evaluation were compiled in the form of the Minutes of Meetings (M/M) signed by the Resident Representative of the JICA Sudan Office and the Kassala State Minister for Finance on 27 January 2011.

The revised PDM and PO attached as annexes to M/M were further discussed in the JICA Headquarters and finally approved as an Ex-ante Evaluation Sheet after slight modifications of some indicators. The approved PDM and PO were attached as annexes to the Record of Discussion (R/D) for the Project, which was officially signed by the Resident Representative of JICA Sudan Office and the Governor of Kassala State on 23 February 2011 in Khartoum. The Minister for International Cooperation and the General Secretary (Minister) for Higher Council for Decentralized Governance (HCDG) at the federal level also signed in R/D as witnesses.

After signing of R/D, the Sudanese counterparts and JICA team continued discussion on project activities and indicators, and the slightly updated PDM and PO were proposed and discussed in the 4<sup>th</sup> Joint Coordinating Committee (JCC) Meeting held on 13 March 2011. At the end of JCC Meeting, the Minutes of Meeting (M/M) was signed with attachment of the updated PDM (version 0.2) and PO (version 0.2).

Table 2.1.1 shows the overall goal and project purpose in the PDM (version 0.2), with baseline and target values for some indicators added as a result of the baseline survey.

**Table 2.1.1: Overall Goal and Project Purpose for 3-Year Technical Cooperation**

Narrative Summary	Objectively Verifiable Indicators (with baseline and target values)	Means of Verification	Important Assumptions
<p><b>Overall Goal:</b> Basic Human Needs of the people in Kassala State are ensured by enabling them to access quality public services by the State.</p>	<ol style="list-style-type: none"> <li>1. Percentage of rural households who have access to safe water in Kassala State (39%→50%)</li> <li>2. No. of households who have direct (face-to-face) access to extension services of agriculture and livelihoods in Kassala State (25,000 / year (TTEA, Horticulture and Land Use Departments) → 50,000 /year)</li> <li>3. Reported maternal death rate in Kassala State (1,414/100.000 (2006) → 980/100,000 (2013))</li> <li>4. Reported neonatal mortality rate in Kassala State (31/1,000 live births (2006) → 21/1,000 live births (2013))</li> <li>5. Percentage of people who obtained jobs within six months after receiving training in Kassala State (N/A → 60%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Inventory Survey by SWC</li> <li>2. Annual Reports of SMOAFI</li> <li>3. Sudan Household Health Survey</li> <li>4. Sudan Household Health Survey</li> <li>5. KVTC and Project Record</li> </ol>	<p>Kassala State Government is willing to support non-pilot areas, utilizing the capacity improved by the Project.</p>
<p><b>Project Purpose:</b> Revival of public services to ensure basic human needs is recognized by people in Kassala State.</p>	<ol style="list-style-type: none"> <li>1. No. of claims from water users in Kassala town. (541 claims/month→100 claims/month)</li> <li>2. Percentage of breakdown among rural water yards (25%→5%)</li> <li>3. Percentage of rural households who are satisfied with the services provided by extension workers who have participated in training by the Project (N/A → 60%)</li> <li>4. No. of expectant women and nursing mothers who received services (e.g. antenatal care, delivery, post-natal care) either in improved medical facility in the pilot area or from trained village midwives. (N/A → 80% (2013))</li> <li>5. Level of satisfaction of employers of the graduates of KVTC with their skill levels at the time of recruitment (3/5 → 4/5)</li> <li>6. Level of satisfaction of participants in KVTC's vocational training courses with the contents &amp; quality of the courses (3.5/5 → 4.5/5)</li> <li>7. No of practices in Wad El Helew and Girba localities, which realize synergy effects by collaboration among sectors of water supply, Agriculture &amp; Livelihoods, Maternal &amp; Child Health. (0→3)</li> </ol>	<ol style="list-style-type: none"> <li>1. Claim Record in SWC</li> <li>2. Inventory Survey by SWC</li> <li>3. Project Record (Sample Survey)</li> <li>4. Project Record</li> <li>5. KVTC and Project Record</li> <li>6. KVTC and Project Record</li> <li>7. Project Record</li> </ol>	<p>Economic situation of Kassala State is not worsened sharply.</p> <p>Population growth of Kassala State does not exceed the assumption.</p> <p>Kassala State Government continues to allocate budget and personnel.</p>

Source: PDM attached in M/M signed on 13 March 2011 (See Annex 1).

The remaining parts of PDM, i.e., output and activities in each cluster, are explained in the following sections.

## 2.2 Planning Cluster

### 2.2.1 Situation Analysis

#### (1) Government Policy, Priorities and Budget

According to the Kassala State Strategic Plan for 2007-2011, the Kassala State Government sets the four areas as its development priorities: i) Peace Building, ii) Governance and Rule of Law, iii) Livelihoods and Productive Sectors, and iv) Basic Services. Detailed strategic objectives and expected outcomes for each of the four areas in the Kassala State Strategic Plan for 2007-2011 are described in Table 2.2.1.

**Table 2.2.1: Strategic Directions for Kassala State  
(based on Kassala State Strategic Plan for 2007-2011)**

Outcome	State Strategic Objectives	Expected Sub-outcomes
1) Peace Building	<ul style="list-style-type: none"> <li>- Establish and enhance partnerships between government, community level, civil society and business sector to ensure participation, accountability and the mainstreaming cross-cutting issues e.g. peace building, gender, rights-based approaches, etc.</li> <li>- Promotion of sustainable development, natural resource management and resource-based conflict prevention mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>1-1) Sudanese society and Government have enhanced capacity to use conflict-mitigating mechanisms.</li> <li>1-2) Individuals and communities in conflict-affected areas face significantly reduced threats to social and physical security from mines, explosive remnants of wars (ERW) and small arms.</li> <li>1-3) Sustainable solutions for war-affected groups are supported by national, sub-national and local authorities and institutions with active participation of communities.</li> </ul>
2) Governance and Rule of Law	<ul style="list-style-type: none"> <li>- Strengthen capacity and support state building initiatives and the equitable allocation of services at state and local levels, i.e., decentralization, rule of law, good governance and natural resource management</li> <li>- Develop partnerships for development by i) establishing information sharing and communication platforms, and ii) forming partnership for reconstruction and development involving government, civil society and private sector</li> </ul>	<ul style="list-style-type: none"> <li>2-1) Individuals and communities, especially groups with specific needs, have increased access to equitable and efficient justice and democratic governance process.</li> <li>2-2) Sudanese society experience improved and equitable democratic governance process.</li> <li>2-3) National, sub-national, state and local institutions have improved public administration, planning, and budgeting for people-centered, socially inclusive and decentralized development.</li> <li>2-4) Gender inequities addressed in all governance processes and development initiatives.</li> </ul>
3) Livelihoods and Productive Sectors	<ul style="list-style-type: none"> <li>- Promote social and economic development</li> <li>- Control the Gash River floods through city protection and rural livelihoods support</li> <li>- Eradicate extreme poverty and hunger by i) reducing the proportion of people living on less than a dollar a day from 83% to 50%, and ii) reducing the proportion of people who suffer from hunger round the year from 25% to 10% and seasonal hunger from 40% to 15%</li> <li>- Ensure environmental sustainability, by i) integrating the principles of sustainable development into state</li> </ul>	<ul style="list-style-type: none"> <li>3-1) More rural households, including women-headed households, are decently employed with increased sustainable agricultural productivity and diversification.</li> <li>3-2) Individuals and communities, especially youth and vulnerable groups including ex-combatants, mine victims, women associated with armed forces and groups (WAAFG) and children associated with armed forces and groups (CAAFG), have access to improved income generation opportunities and employment through decent work.</li> <li>3-3) Transportation networks and market infrastructure to facilitate the movement of people, goods and services, and</li> </ul>

Outcome	State Strategic Objectives	Expected Sub-outcomes
	level policies and programs and reversing the loss of environmental resources, and ii) achieving significant improvements in the lives of slum dwellers.	<p>commodities improved and expanded, thereby fostering increased agricultural and industrial production.</p> <p>3-4) National and state authorities and communities improve sustainable natural resource management and increase resilience to natural disasters and the impact of climate change.</p> <p>3-5) A more equitable, competitive and socially responsive private sector in place.</p>
4) Basic Services	<ul style="list-style-type: none"> <li>- Rehabilitate and support basic social service and physical infrastructure.</li> <li>- Town centers development and breakage of isolation through feeder roads, communication, marketing centers and rural-urban linkages.</li> <li>- Achieve universal primary education, by i) increasing enrollment rate of girls and boys at primary schools from 31.3% and 38.7% to 75% and 80% respectively, ii) increasing enrollment rates for nomadic communities children from 3.1% to 60%, and iii) reducing literacy rates from 66% to 25%.</li> <li>- Promote gender equality and empowerment, by eliminating gender disparity in primary and secondary education</li> <li>- Reduce child mortality by i) reducing mortality rates among children under five from 148 to 70 per 1000 live births, and ii) reducing infant mortality rates from 101 to 60 per 1000 live births.</li> <li>- Reduce maternal mortality rate by three quarters, by improving maternal health.</li> <li>- Combat HIV/AIDS, malaria and other diseases, by i) halving and beginning to reverse the spread of HIV/AIDS, and ii) halving and beginning to reverse the indicator of malaria and other diseases.</li> <li>- Ensure environmental sustainability, by reducing the proportion of people without sustainable access to safe drinking water from 65.8% in urban areas and 36% in rural areas to 80% and 70% respectively.</li> </ul>	<p>4-1) Policies, systems, infrastructure and human resource capacity improved to provide equitable and affordable access to basic quality health, reproductive health and nutrition services.</p> <p>4-2) Community members have improved preventive health care and awareness extending to reproductive health and nutrition; corollary reduction in harmful practices.</p> <p>4-3) Vulnerable groups have increased and sustainable access to, and use of, safe water and basic sanitation, and have adopted improved hygiene practices.</p> <p>4-4) Policies, knowledge base, systems and human resource capacities are improved to enable decentralized and sustainable integrated water resources management and water, sanitation and hygiene (WASH) service delivery.</p> <p>4-5) Children and youth have increased, equal and complete access to quality education in learner-friendly environments.</p> <p>4-6) National, sub-national and state Ministries of Education have improved policy analysis, educational planning, sector coordination, budgeting, monitoring and reporting.</p> <p>4-7) HIV infection is reduced and care of those infected and affected is increased, through better access to and utilization of quality, gender-sensitive prevention, care, treatment and support services.</p>

Source: Kassala State Strategic Plan for 2007-2011.

To understand the baseline situation of the planning cluster, the JICA team organized the Capacity Assessment Workshop for General Directorate of Economic Planning and Development (DPD) and Strategic Planning Council (SPC) staff on 21 February 2011. The participants in this workshop rated the quality of the Kassala State Strategic Plan 2007-2011 as an average of 2.6 (poor) in the scale of 1.0 to 5.0, as shown in Table 2.2.2. There seems to be much room for improvement in terms of strategic planning in Kassala State Government.

**Table 2.2.2: Narrative Evaluation of Kassala State Strategic Plan 2007-2011 by DPD and SPC Staff**  
(Number of Respondents = 15)

Evaluation of State Strategic Plan 2007-2011	Rating (1-5): Average 2.6 (Poor)
<p><b>Good Points:</b></p> <ul style="list-style-type: none"> <li>- There is no big obstacle in implementing the plan over the previous four years (2007-2010).</li> <li>- Implementation of the projects is on going based on the five-year strategic plan.</li> </ul>	<p><b>Weak Points:</b></p> <ul style="list-style-type: none"> <li>- Strategic plan is not based on realistic analysis of the needs of the State.</li> <li>- Strategic plan was prepared without full coordination among all sectors.</li> <li>- Preparation of the strategic plan is administratively time-consuming.</li> <li>- The State Government's capacity to plan realistic budget for the strategic plan is weak.</li> <li>- Implementation of the strategic plan is very weak, due to poor resource mobilization and weak planning.</li> <li>- Not all projects in the strategic plan have been implemented as planned, and many projects implemented are not based on the strategic plan.</li> <li>- The five-year plan cannot take into account the yearly changes on the need for the projects.</li> </ul>

Source: Capacity Assessment Workshop for DPD and SPC conducted by the JICA team on 21 February 2011.

The more detailed review of the Kassala State Strategic Plan 2007-2011 was conducted during the discussion session with DPD and SPC key staff, organized by the JICA team on 24 February 2011. They evaluated the quality of the Strategic Plan also as “poor” or “very poor” in many aspects, as shown in Table 2.2.3.

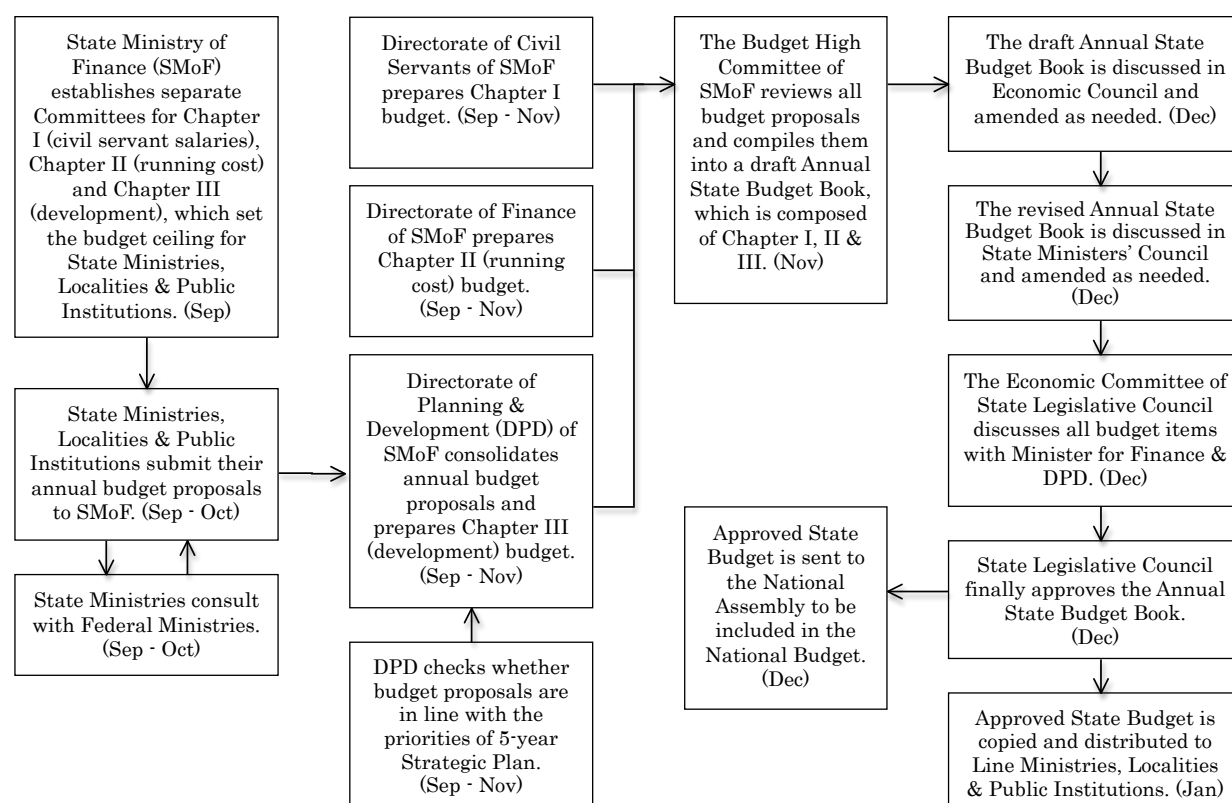
**Table 2.2.3: Review of the Strategic Plan 2007-2011 by DPD and SPC Staff and Lessons for the Next Strategic Plan**

Domain	Review Point	Rating (1-5)	Reasons for Rating	How to Improve for the Next Plan
Contents of the Strategic Plan	Coverage of the Plan (comprehensiveness)	2 (Poor)	- Well covers sector-wise programs/projects, but poorly covers the needs of tribal groups and other people's groups.	- The new database with inputs from all localities (developed by DPD & CFCI) will improve the situation.
	Quality of Situation Analysis and Need (Problem) Identification	1 (Very Poor)	- No situation analysis was conducted in 2006. (Situation analysis was conducted in 2009 during the mid-term review.)	- Situation analysis needs to be updated in 2011.
	Logical Planning based on Situation (Problem) Analysis	1 (Very Poor)	- No problem analysis was conducted in 2006.	- Need to conduct problem analysis using on scientific data.
	Adequacy of indicator setting to monitor and evaluate achievement of the Plan	2 (Poor)	- No census data is available at 2006 to set realistic indicators.	- Now we can use Census 2008 data to set realistic indicators.
	Adequacy of implementation plan (implementer, schedule, activities, etc.)	1 (Very Poor)	- Only 29% of the Plan was implemented, and more than 60% of implemented activities are not in the Plan, because Annual Plan is not linked with Strategic Plan.	- Need to strengthen linkage between 5-Year Strategic Plan and Annual Plan. - Need to conduct feasibility studies (F/S) for the projects which need a big budget, to avoid “shopping list” of wishful projects.

Domain	Review Point	Rating (1-5)	Reasons for Rating	How to Improve for the Next Plan
	Adequacy of budget plan	1 (Very Poor)	- Budget proposed in the Strategic Plan is too ambitious: 20 billion SDG for 5 years, while annual state budget is only 2 billion SDG.	- Need to plan with realistic budget projection. - Need to review annual performance of each ministries and localities to set next year's budget.
	Resource mobilization to implement the Plan	1 (Very Poor)	- Private sector is not involved for implementation of SPC. Donor commitment has never realized. Federal Government's support is too small.	- Need to improve the local revenue by localities. - Need to get better financial support from Federal Government through National SPC
Planning Process	Cooperation and demarcation of roles between DPD and SPC	2 (Poor)	- No SPC in 2006 when the Strategic Plan 2007-2011 was prepared.	- Memorandum on demarcation of roles between DPD and SPC on the formation of the committee to prepare next Strategic Plan is recently sent for State Governor's approval.
	Participation of Line Ministries	4 (Good)	- Line Ministries participated well, but without proper incentives.	- Need to pay appropriate incentives from the committee members
	Participation of Localities	2 (Poor)	- Participation by Localities was weak, due to accommodation problems.	- Need to provide proper accommodation to the participants from Localities.
	Democratic process of consensus making	5 (Very Good)	- Good process: participants discussed freely and agreed in the end.	(No need for improvement)
	Training for Planning Process	2 (Poor)	- Training was provided, but not enough.	- More training on planning methodologies is needed.
	Publicity	3 (Moderate)	- Press Conference at locality level was organized.	- Need to publicize through SPC and use of TV and community radios (via local languages)
Implementation Process	Securing the budget for implementation	1 (Very Poor)	- Too ambitious budget plan, so many projects were not implemented due to lack of budget.	- Need to link National SPC to secure the budget from Federal Government.
	Monitoring the implementation process	2 (Poor)	- Quarterly Reports have been produced, but with a traditional way..	- Monitoring should be more scientific and systematic, based on scientific data.
	Flexibility to modify the Plan based on the reality	5 (Very Good)	- Based on the situation analysis during the Mid-Term Review in 2009, the revised Strategic Plan 2010-2011 was produced.	(No need for improvement)
	Training for Implementation Process	3 (Moderate)	- Training was provided, but not enough.	- More training on scientific monitoring and evaluation is needed.

Source: Discussion with DPD and SPC organized by the JICA team on 24 February 2011.

The Kassala State Government's annual budget planning process is illustrated in Figure 2.2.1. The state budget is composed of Chapter I (civil servant salaries), Chapter II (running cost) and Chapter III (development budget), and DPD-SMoF is in charge of compiling Chapter III budget by getting inputs from line ministries, localities and public institutions.



**Figure 2.2.1: Annual Budget Planning Process in Kassala State**

Source: DPD and UNDP.

The proposed and actual Chapter III (development) budgets in Kassala State from 2005 to 2011 indicate a significant decrease in actual budget from 2005 to 2010 as shown in Table 2.2.4. Actual Chapter III budget in 2010 is only 24% of 2005.

**Table 2.2.4: Chapter III (Development) Budget in Kassala State (Unit: SDG)**

Year	2005	2006	2007	2008	2009	2010	2011
Proposed	800,000,000	238,000,000	272,823,960	289,253,000	241,200,000	204,262,770	301,069,051
Actual	368,905,914	123,767,080	162,526,141	130,346,405	150,626,804	88,654,667	-
Actualization Rate	46%	52%	60%	45%	62%	43%	-
Change of Actual Budget	100%	34%	44%	35%	41%	24%	-

Source: DPD

The participants in the Capacity Assessment Workshop for DPD and SPC staff on 21 February 2011 evaluated the quality of the Annual Budget Plan as a average of 3.5 (moderate) in the scale of 1.0 to 5.0, as shown in Table 2.2.5. The quality of the Annual Budget Plan seems to be better than that of the Strategic Plan, but there is still some room for improvement.



**Table 2.2.5: Narrative Evaluation of Annual Budget Plan 2011 by DPD and SPC Staff**  
(No. of Respondents = 15)

Evaluation of Annual Budget Plan 2011	Rating (1-5): Average 3.5 (Moderate)
<p><b>Good Points:</b></p> <ul style="list-style-type: none"> <li>- Comprehensive annual budget plan for all sectors.</li> <li>- Objectives and indicators for the annual budget plan were clearly set.</li> <li>- The annual budget plan was prepared through collaboration of all sectors under the auspices of the Department of Planning and Development.</li> </ul>	<p><b>Weak Points:</b></p> <ul style="list-style-type: none"> <li>- No situation analysis was conducted for Annual Budget Plan, so it cannot be ensured that the annual budget plan covers all needs of the development.</li> <li>- Evaluation criteria is not clear when the annual budget proposal are submitted from line ministries and localities.</li> <li>- The approved annual budget is too small and cannot implement all the projects in the plan.</li> <li>- Donor's financial support to implement the annual budget plan is weak.</li> <li>- There is no fairness in the distribution of the annual budget among all sectors.</li> <li>- Implementation is not based on the priorities in the annual budget plan.</li> <li>- The timing of implementation is often not suitable, because the projects are not implemented as planned.</li> <li>- Progress monitoring and reporting on the annual budget plan to the State Government is weak.</li> <li>- The annual budget plan did not consider the effect of the possible political change.</li> </ul>

Source: Capacity Assessment Workshop for DPD and SPC held by the JICA team on 21 February 2011.

## (2) Existing Projects and Programs (by government, donors and NGOs)

DPD-SMoF has been receiving assistance from EU and UNDP. Major projects assisted by EU and UNDP are described in Table 2.2.6.

**Table 2.2.6: Major Donor Assistance to the General Directorate for Economic Planning and Development (DPD)**

Donor	Project Name, Duration, Budget, and Target Areas	Overall Goal and Project Purpose	Outputs
EU	<p>Eastern Recovery and Development Programme (ERDP)</p> <p><i>Duration:</i> July 2009- July 2012 (3 years)</p> <p><i>Budget:</i> Euro10.5 million</p> <p><i>Target Areas:</i> Kassala, Gedaref and Red Sea States</p>	<p><i>Overall Goal:</i> Contribute to poverty reduction among people living in the 3 eastern states</p> <p><i>Project Purpose:</i> Improve livelihood security livelihood security of poor and vulnerable people living in the Red Sea, Kassala and Gedaref States, through the targeted provision of infrastructure and services</p>	<p><i>Output 1:</i> Increased production and better productivity in agricultural areas</p> <p><i>Output 2:</i> Increased incomes for rural women through supplementary income generating activities</p> <p><i>Output 3:</i> Increased incomes from livestock, through improved produce and marketing</p> <p><i>Output 4:</i> Provision of additional skills for poor and vulnerable youth to increase and diversify income</p> <p><i>Output 5:</i> Increased access to domestic water through the drilling of boreholes, the construction of elevated water tanks and the provision of equipment</p> <p><i>Output 6:</i> Strengthened capacity of State Government Departments in planning procurement and contract management, supervision of implementation, monitoring and evaluation of projects and investments in support of improved livelihood and income generation in the 3 states</p> <p><i>Output 7:</i> A regional coordination mechanism established for planning and prioritizing public and donor support to programs and projects for</p>

Donor	Project Name, Duration, Budget, and Target Areas	Overall Goal and Project Purpose	Outputs
			improving livelihood and income generation in the 3 states
UNDP	<p>Local Governance Development and Public Expenditure Management in Eastern Sudan (LGDPEM)</p> <p><i>Duration:</i> 2009- 2012 (3 years)</p> <p><i>Budget:</i> US\$3.67 million</p> <p><i>Target Areas:</i> Kassala, Gedaref and Red Sea States</p>	<p><i>Overall Goal:</i> Improve living conditions through strong partnerships between the local authorities and the target communities</p> <p><i>Project Purpose:</i> Promote participation of all members of society in local governance and public resource management, in line with the Interim National Constitution and development priorities.</p>	<p><i>Output 1:</i> Enhanced planning and expenditure management</p> <p><i>Output 2:</i> Enhanced legal and policy framework and intergovernmental fiscal relations</p> <p><i>Output 3:</i> Strengthened institutional capacity for decentralized governance</p> <p><i>Output 4:</i> Targeted legal policy and institutional reforms</p> <p><i>Output 5:</i> Institutionalization of Eastern Sudan Forum</p> <p><i>Output 6:</i> Improved program management</p>
	<p>Crisis and Recovery Mapping and Analysis (CRMA) Project</p> <p><i>Duration:</i> Phase 1: 2007- 2010 (3 years) Phase 2: 2010-2012 (3 years)</p> <p><i>Budget:</i> Phase 1: US\$7.17 million Phase 2: (no data)</p> <p><i>Target Areas:</i> Whole Sudan</p>	<p><i>Overall Goal:</i> Achieve better governance, peace building and respect for and protection of human rights</p> <p><i>Project Purpose:</i> Strengthen capacities in government and civil society to manage natural resources for sustainable livelihoods, and to meet global environmental commitments.</p>	<p><u>Phase 1:</u> <i>Output 1:</i> Establishment of national-level Sudan Conflict Management Advisory Group (SCMAG) which provides inputs into national policy for conflict management and support for the implementation of CPA, ESPA and Darfur peace process</p> <p><i>Output 2:</i> Completion of gender-sensitive security threat and socio-economic risk mapping (TRMA) in key States (including Kassala) in Northern and Southern Sudan and results incorporated into State level development planning (In Kassala, State Situation Analysis was developed and State Strategic Plan was revised based on it in 2009.)</p> <p><i>Output 3:</i> Enhanced national capacities for conflict management, analysis and mapping of security threats and socio-economic risks</p> <p><i>Output 4:</i> Enhanced UNDP's capacity for crisis sensitive recovery and development programming for sustainable support.</p> <p><u>Phase 2:</u> <i>Output 1:</i> Enhanced information and knowledge management capacity in East Sudan and the Transitional Areas</p> <p><i>Output 2:</i> Effective application of CRMA in Darfur</p> <p><i>Output 3:</i> Effective application of CRMA in South Sudan</p>

Source: ERDP and UNDP.

As for the capacity development of DPD, various training programs have been conducted as shown in Table 2.2.7. During the Capacity Assessment Workshop for DPD and SPC held by the JICA team on 21 February 2011, the participants tried to recapture what they learned in these training, but often in vain, which implies that the training is not effective.

**Table 2.2.7: Evaluation of the Past Training by DPD Staff**

<b>Topic of Training (Donor)</b>	<b>Time (Duration)</b>	<b>Name of Instructor</b>	<b>No. of Participants</b>	<b>Strength of the training</b>	<b>Weakness of the training</b>
Project Cycle Management (PCM) (UNDP)	July 2007 (45 days)	Sudanese expatriate (UNDP TOKTEN)	40 (DPD, other ministries)	<ul style="list-style-type: none"> <li>- Can apply in the field practically</li> <li>- Learned Log Frame</li> <li>- Can continue daily coordination among participants</li> </ul>	<ul style="list-style-type: none"> <li>- Difficulty in understanding English handouts</li> <li>- Difficulty in setting indicators</li> <li>- Too long period of training</li> <li>- Whole-day training is difficult for participants</li> </ul>
Project Cycle Management (PCM) (ERDP)	Sep 2009 (1 day)	Willy van Kempen (Team Leader, ERDP)	34 (DPD) (18 males, 16 females)	- Understand clearly	<ul style="list-style-type: none"> <li>- Instructor cannot speak Arabic</li> <li>- 1 day is not enough</li> </ul>
	April 2010 (5 days)	El Sadig (consultant)	22 (DPD, other ministries)	<ul style="list-style-type: none"> <li>- Practical group work every day</li> <li>- Punctuality and seriousness of participants</li> <li>- Collaboration with other government staff</li> </ul>	<ul style="list-style-type: none"> <li>- Some subjects are not covered in details</li> <li>- Difficulty in filling in Log Frame</li> <li>- No participants from localities due to no DSA</li> </ul>
Monitoring and Evaluation using Management Information System (MIS) (ERDP)	Q4 2010 (5 days)	Willy van Kempen (Team Leader, ERDP) for 2 days and Adam for 3 days	10 (DPD M&E staff) (3 males, 7 females)	<ul style="list-style-type: none"> <li>- Successful completion of in-service training</li> <li>- Daily use of Excel-based MIS after training</li> </ul>	<ul style="list-style-type: none"> <li>- No practice on evaluation, which will happen in future</li> </ul>
Basic English Training (ERDP)	June 2010 (22 days)	Esam (Kassala University) Tadras (private trainer)	32 (DPD) (18 males, 14 females)	<ul style="list-style-type: none"> <li>- Very excellent instructor</li> <li>- Can start to talk in English</li> </ul>	<ul style="list-style-type: none"> <li>- Only one level of grouping (2-3 levels of grouping are preferred)</li> <li>- Need more English training in future, which is already promised by ERDP</li> </ul>
PC Training (Basics and Excel) (ERDP)	Oct-Nov 2010 (40 days)	Adam (consultant)	31 (DPD) (13 males, 18 females)	<ul style="list-style-type: none"> <li>- Very good</li> <li>- Instructor is good</li> <li>- Can use Excel</li> <li>- Practice daily after training</li> </ul>	<ul style="list-style-type: none"> <li>- Not all participants have PC at office or home</li> <li>- 1 hour per day is not enough</li> </ul>
Planning Workshop (ERDP)	Sep 2009 (2 days) April 2010 (5 days)	(No data)	34 (DPD, other ministries) (18 males, 16 females)	(No information, because no one in the workshop attended/remembered this training)	(No information, because no one in the workshop attended/remembered this training)
Procurement (ERDP)	Feb 2010 (2 days)	Willy van Kempen (Team Leader, ERDP)	24 (DPD) (10 males, 14 females)	(No information, because no one in the workshop attended/remembered this training)	(No information, because no one in the workshop attended/remembered this training)

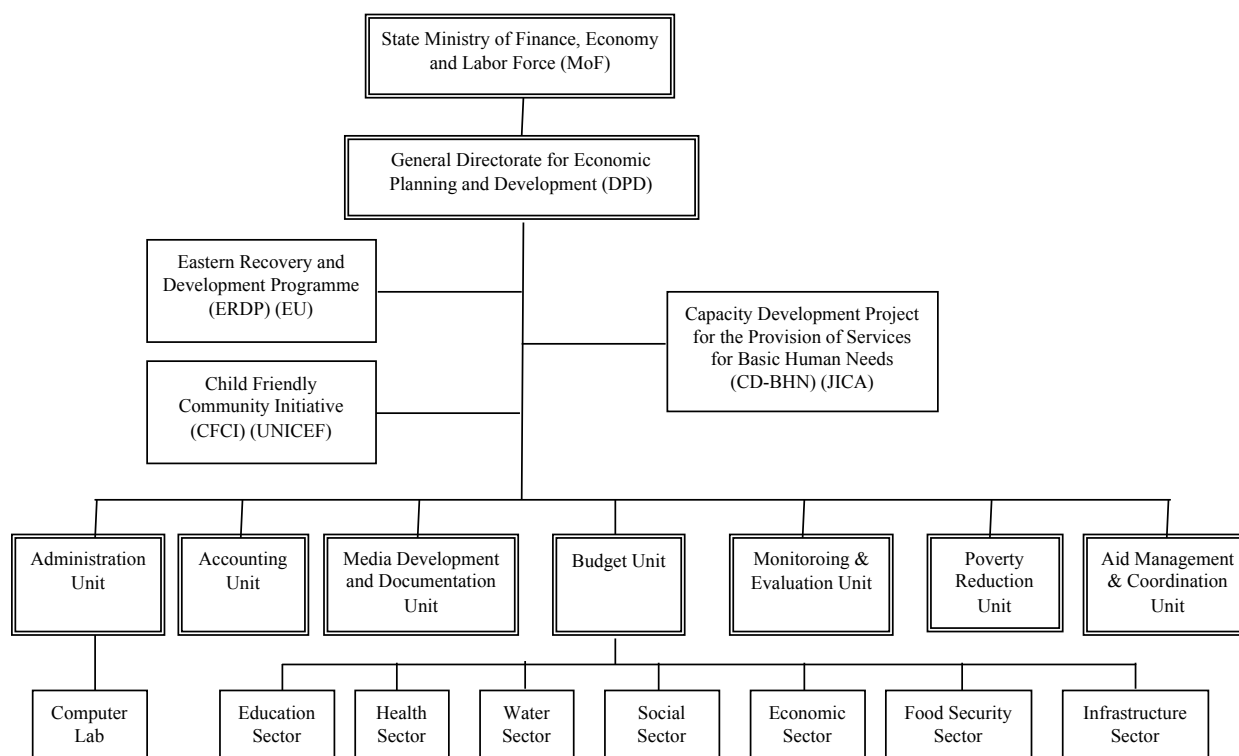
Topic of Training (Donor)	Time (Duration)	Name of Instructor	No. of Participants	Strength of the training	Weakness of the training
Organizational Development (ERDP)	Sep 2010 (3 days)	Dr. Omar Basir	40 (DPD) (16 males, 24 females)	- Very good training - All DPD staff participated	- Decision-makers not participated, so recommendations by the participants never implemented
Bottom-up planning (UNDP)	1 <sup>st</sup> Quarter 2009 (3 days)	Dr. Adam Sabir (UNDP)	more than 50 (DPD, other ministries)	- Good in theory	- Only recommendations and never implemented
Monitoring and Evaluation (UNDP)	Jan 2011 (3 weeks)	Dr. Harvis (Sudanese expatriate living in UK) (UNDP TOKTEN)	Around 20 (DPD)	(Stopped in the middle of training)	- No practice - No relation with actual programs - Instructor brought new local facilitators every day (more than 10 in total), who are not coordinated well
4Ws (Who-does-What-Where-When) (UNDP)	2 <sup>nd</sup> Quarter 2010 (5 days)	Mohamed Belo Beyumi (UNDP)	22 (SPC, DPD)	- Good practice - Good performance - Good budget	- No coordination with ministries - No DSA, so nobody will attend next training
GIS (UNDP)	2 <sup>nd</sup> Quarter 2010 (5 days)	(UNDP)	6 (DPD) (3 males, 3 females)	- Very good - Can use GIS easily	- Some participants not attending every day, because their work is not relevant to the training
Facilitation Skill (TOT) (UNICEF)	2004 (1 week)	3 instructors (UNICEF)	25 (DPD)	- Chance to practice - PLA (Participatory Learning and Action) approach is very practical	- Period of training is too short – need 2 weeks of training for facilitation skill and PLA
	2006 (1 week)	3 instructors (UNICEF)	40 (DPD)		
Team Designing (UNICEF)	2 <sup>nd</sup> Quarter 2009 (5 days)	Esam Mohamed Osman (CFCI)	30 (DPD, SMOH, Localities) (15 males, 15 females)	- Excellent strategy	- Poor implementation due to conflict with existing government practice - Too advanced system, and not understood by Head of Office
GFS (Government Financial Statistics) (FMoF, UNDP)	July 2010 (5 days)	Dr. Albek (consultant)	60 (DPD, other ministries)	- Understand how to use GFS, new system introduced by Federal Ministry of Finance (FMoF)	- Period of training is not enough due to many participants – 2 weeks is needed
Development Information System (CBS)	Oct 2010 (5 days, in Wad Medani)	(CBS)	3-5 participants (DPD) from Kassala	- Very good - Rich in subject	- 1 facilitator gave handouts only at the last day – he should give them to the participants in the beginning

Source: Capacity Assessment Workshop for DPD and SPC held by the JICA team on 21 February 2011

### (3) Current Situation and Problem Analysis

#### 1) Capacity Assessment

An organization chart of DPD is shown in Figure 2.2.1 and the number of staff and their academic qualification is shown in Table 2.2.8, which indicates that the academic qualification of the DPD staff is generally high, and more than a half of staff are female. As mentioned above, the DPD staff has also received various training from ERDP and UNDP, but the Acting Director of DPD informed the JICA team that DPD staff had few chances to utilize the knowledge learned from the training due to lack of necessary equipment and budget.



Source: Made by JICA team based on the information from DPD

**Figure 2.2.2: Organization Chart of the General Directorate for Economic Planning and Development (DPD) (as of February 2011)**

**Table 2.2.8: Number of Staff and Academic Qualification in DPD**

Section in DPD	No. of Staff (Female)	Academic Qualification				
		Secondary	Diploma	Bachelor	Post Graduate Diploma	Master
Director	1 (0)			1 (0)		
1) Administration Unit (including Computer Lab)	6 (5)	3 (3)	1 (1)	1 (1)	1 (0)	
2) Accounting Unit	8 (6)	3 (2)	2 (1)	3 (3)		
3) Media Development & Documentation Unit	1 (0)		1 (0)			
4) Budget Unit (including CDF, ERDP, ESRDF coordinators)	11 (7)			7 (5)	3 (2)	1 (0)
5) Monitoring & Evaluation Unit	7 (5)			3 (3)	2 (1)	2 (1)

Section in DPD	No. of Staff (Female)	Academic Qualification				
		Secondary	Diploma	Bachelor	Post Graduate Diploma	Master
6) Poverty Reduction Unit	1 (1)			1 (1)		
7) Aid Management and Coordination Unit	6 (3)		1 (0)	4 (2)		1 (1)
8) Child Friendly Community Initiative (CFCI)	7 (2)			6 (2)	1 (0)	
Total (Female)	48 (29)	6 (5)	5 (2)	26 (17)	7 (3)	4 (2)

Source: JICA team

The JICA team organized the Capacity Assessment Workshop for the General Directorate of Economic Planning and Development (DPD) and the Strategic Planning Council (SPC) staff on 21 February 2011 to assist self-assessment of necessary capacities for DPD and SPC staff, and the result is shown in Table 2.2.9 and Figure 2.2.3 (in the form of spider diagram). The weakest domain of capacity is financial management (consolidated rating: 3.12), followed by project management (consolidated rating: 3.30) and personal management (consolidated rating: 3.37). There is a need to improve financial management as well as project management such as planning, monitoring and evaluation.

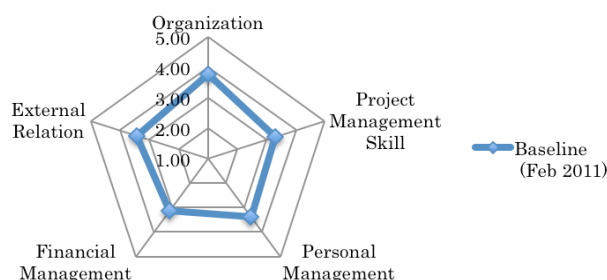
**Table 2.2.9: Self-Assessment of Necessary Capacities for DPD and SPC Staff**

(No. of Respondents = 21)

Domain of Capacity	Necessary Capacities for DPD and SPC Staff	Rating by Self-evaluation (No. of respondents in each rating)						Consolidated Rating by Domain
		1 (Very Poor)	2 (Poor)	3 (Moderate)	4 (Good)	5 (Excellent)	Average Rating	
1) Organization	1-1) Leadership of the Organization	0	0	8	3	10	4.10	3.78
	1-2) Vertical Human Relationship (relation/communication with boss/manager/supervisor, etc.)	0	0	7	5	9	4.10	
	1-3) Horizontal Human Relationship (team work among colleagues)	0	1	7	2	11	4.10	
	1-4) Sharing Clear Vision, Mission and Values of the Organization	2	4	5	6	4	3.29	
	1-5) Organizational Knowledge Management (sharing information and accumulate organizational learning)	1	2	10	5	3	3.33	
2) Project Management Skill	2-1) Need Assessment	2	4	4	7	4	3.33	3.30
	2-2) Planning	1	4	5	8	3	3.38	
	2-3) Implementation and Monitoring (flexibility and support)	1	6	5	6	3	3.19	
	2-4) Evaluation and Feedback (Learning Lessons)	2	5	4	5	5	3.29	
	2-5) Report Writing	2	4	5	6	4	3.29	
3) Personal Management	3-1) Time and Schedule Management	5	3	3	6	4	3.05	3.37
	3-2) Opportunity to Improve Knowledge and Skill through Work (e.g. mentoring/coaching by the senior staff, etc.)	2	5	4	8	2	3.14	
	3-3) Opportunity to Improve Knowledge and Skill through Training	2	2	3	8	6	3.67	
	3-4) Personal Motivation to Improve Work	2	1	3	10	5	3.71	
	3-5) Personal Satisfaction with the Organization	3	3	3	9	3	3.29	

Domain of Capacity	Necessary Capacities for DPD and SPC Staff	Rating by Self-evaluation (No. of respondents in each rating)					Average Rating	Consolidated Rating by Domain
		1 (Very Poor)	2 (Poor)	3 (Moderate)	4 (Good)	5 (Excellent)		
4) Financial Management	4-1) Budget planning	1	4	8	5	3	3.24	3.12
	4-2) Budget disbursement (amount)	1	6	6	4	4	3.19	
	4-3) Budget disbursement (timing)	2	4	7	3	5	3.24	
	4-4) Budget reporting	4	1	7	6	3	3.14	
	4-5) Auditing	4	3	5	7	2	3.00	
	4-6) Resource Mobilization	3	5	6	5	2	2.90	
5) External Relation	5-1) Coordination with Federal Government	2	4	3	6	6	3.48	3.44
	5-2) Coordination with State Government (Other State Ministries)	3	2	5	5	6	3.43	
	5-3) Coordination with NGOs	4	3	3	4	7	3.33	
	5-4) Coordination with the communities	3	2	5	3	8	3.52	
	5-5) Coordination with donors	3	3	4	4	7	3.43	
	5-6) Public Relations	4	2	3	5	7	3.43	
<b>Overall Rating</b>							<b>3.40</b>	

Source: Capacity Assessment Workshop for DPD and SPC held by the JICA team on 21 February 2011



Source: Table 2.2.9

**Figure 2.2.3: Self-Assessment of Necessary Capacities for DPD and SPC Staff (Spider Diagram)**

## 2) Problem Analysis

While ERDP and UNDP have conducted many training programs for the DPD staff, there is still some need for more comprehensive and systematic training such as planning, monitoring and evaluation. At the same time, there is a strong need for implementation of what they have learned in training to improve their daily work. Thus, it is proposed that DPD try out the Japanese *Kaizen* (means “improvement” in Japanese) approach to solicit its staff’s ideas to improve their daily routine work, which is expected to facilitate the staff’s use of knowledge and skills learned in the training. Their ideas are often small-scale activities that can be implemented without a big budget. The *Kaizen* approach has revolutionarily improved the productivity of factories and offices in Japan and other countries with little or no cost.

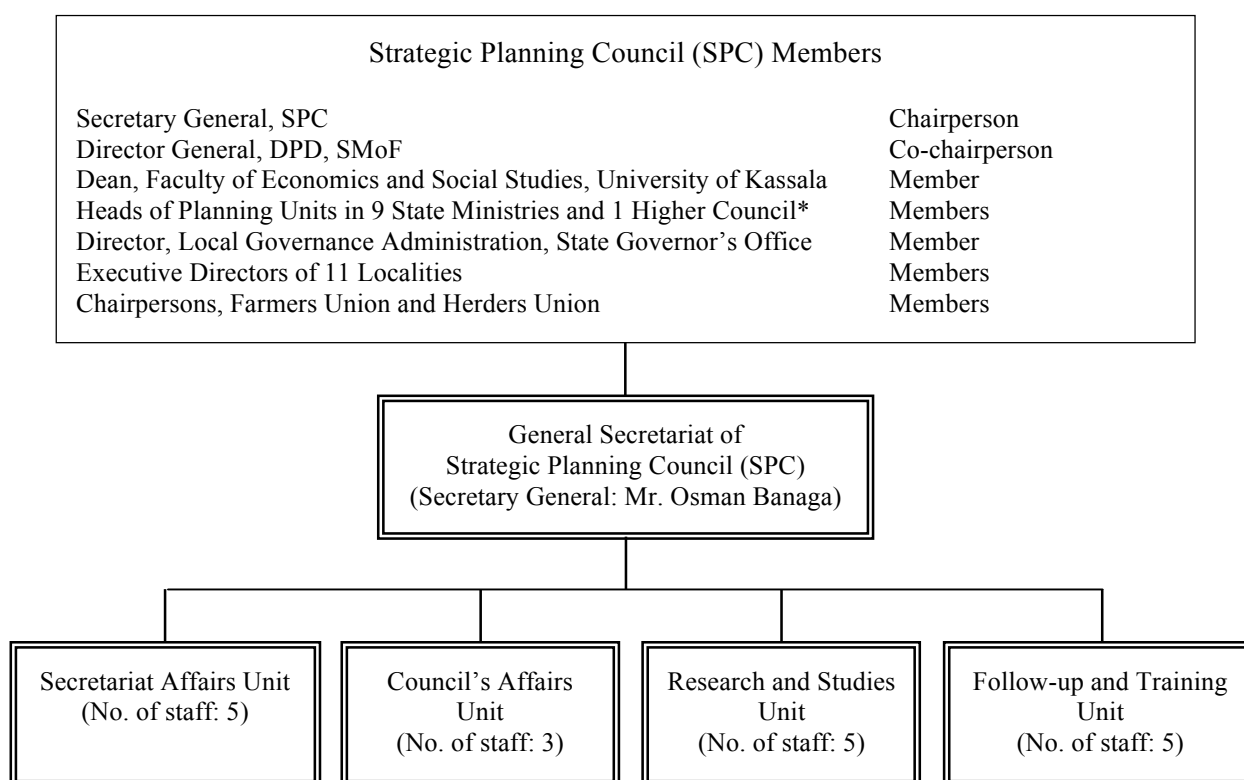
In terms of DPD’s capacity to monitor and evaluate the Project, the Acting Director of DPD pointed out that the DPD’s capacity for monitoring and evaluation (M&E) was not enough, in spite of training on M&E received from ERDP and UNDP (UNDP’s training on M&E was cancelled half way due to the incompetency of the instructor to meet the need of DPD). He strongly requested the JICA team to improve DPD’s M&E capacity by conducting systematic and comprehensive training for the DPD staff from planning to M&E as well as by establishing a computerized M&E system in DPD. In order to improve DPD’s capacity for M&E, it is important for DPD to practice a “Plan-Do-See” cycle through this Project, by i) conducting baseline and endline surveys to measure the impacts of the Project on the ground, ii) regularly monitoring the progress and constraints of the project through field visits and meetings with other implementing ministries, and iii) evaluating the achievements of the Project in order to disseminate

lessons learned from the Project to wider areas and audience.

For capacity development on the state-level planning, it is also important to support the planning and monitoring process of the 5-Year State Strategic Plan, which is the key document to prescribe the future directions of development in Kassala State. The current State Strategic Plan 2007-2011 was prepared in 2006 in coordination with DPD and the funding of UNDP. In September 2007, however, the Strategic Planning Council (SPC) was newly established in the state to correspond to the establishment of the National Strategic Planning Council (NSPC) at the federal level. For the preparation of the Strategic Plan 2012-2016, it is necessary to establish a cooperation and coordination mechanism between DPD and SPC at the state level.

While SPC claims that SPC can be the main coordinator in preparation of the Strategic Plan 2012-2016, DPD hardly agrees with it, because SPC currently has only 7 staff and does not have an adequate capacity for the important task. Since DPD is the JICA team's main counterpart, the Project will work to support DPD's work to prepare the Strategic Plan 2012-2016 in 2011. How SPC will participate in the preparation of the Strategic Plan 2012-2016 is not clear at this moment.

The organizational structure of the General Secretariat of SPC with the proposed number of staff in each unit is shown in Figure 2.2.4, but due to the budget constraints, only 7 staff out of 19 proposed staff has been recruited by December 2010. SPC plans to recruit the remaining 12 staff, when the budget is made available. The Secretary General of SPC was the former DG of SMoF.



**Figure 2.2.4: Organization Chart of Strategic Planning Council (SPC)  
(as of February 2011)**

Note: \* 9 State Ministries and 1 Higher Council in the above figure means the following institutions:

Ministry of Finance, Economy and Labor Force	Ministry of Education	Ministry of Health
Ministry of Agriculture, Forestry and Irrigation	Ministry of Animal Resources	Ministry of Investment and Tourism
Ministry of Physical Planning and Public Utilities	Ministry of Culture and Information	Ministry of Social Affairs
Higher Council for Youth and Sports		

Note: The number of staff indicated in the above figure is the requested number of staff. Currently SPC has seven staff members.

Source: Made by JICA team based on the information from SPC



## 2.2.2 Plan for the Implementation Phase

### (1) Basic Policy

Based on the above situation analysis, the capacity of DPD is found weak in i) monitoring and evaluation, ii) “practice” after training, and iii) strategic planning. So for the implementation phase, it is planned to focus on the capacity development of the following three areas.

- i) to strengthen the capacity of DPD to conduct monitoring and supportive feedback for the Project
- ii) to strengthen the capacity of DPD to “practice” after training by introducing Japanese *Kaizen* concept (small-scale improvement with no or little cost, based on the workers’ experiences and ideas)
- iii) to strengthen the capacity of Kassala State Government (coordinated by DPD) to plan, monitor and evaluate State Strategic Plan

### (2) Plan for the Implementation Phase

#### 1) Project Design Matrix (PDM)

The following Project Design Matrix (PDM) for the Planning Cluster in the 3-year technical cooperation project was formulated and officially signed in the 4<sup>th</sup> JCC Meeting on 13 March 2011.

**Table 2.2.10: Project Design Matrix (PDM) for the Planning Cluster**

Output and Activities	Objectively Verifiable Indicators	Means of Verification
<i>Output 1. Kassala State Government’s capacity on Development Planning and Management is strengthened.</i>		
1.1 Strengthen DPD’s supportive monitoring and feedback functions for the whole project	1) Score of self-assessment of organizational capacity (using spider diagram) of DPD and SPC (3.4/5→4.0/5)	1) Capacity Assessment Workshop for DPD and SPC
1.1.1 Conduct necessary training for DPD staff on supportive monitoring, record keeping of monitoring results, and feedback for future improvement (“Plan-Do-See” cycle).	2) Cases where the situation has been improved through DPD’s supportive monitoring (0→5)	2) Project record
1.1.2 Monitor and support the progress of the whole project regularly, and organize the regular meetings (for example, bi-monthly) to discuss the progress and problems of the whole project among all counterparts.	3) Cases where the productivity of office work or government service has been improved through <i>Kaizen</i> Initiative (0→3)	3) Project record
1.1.3 Conduct necessary surveys for the project to evaluate qualitative as well as quantitative impacts of the project, and disseminate the lessons learned from the project to the wider audience.		
1.2 Strengthen capacity of DPD through participatory bottom-up <i>Kaizen</i> approach	4) Evaluation of the Kassala State Strategic Plan 2012-2016 by external learned persons e.g. universities and research institutions (N/A (2.6/5 by DPD & SPC staff)→3.0/5)	4) External Evaluation of the Kassala State Strategic Plan 2012-2016
1.2.1 Organize a one-day orientation workshop for DPD staff to introduce Japanese <i>Kaizen</i> (daily small-scale improvement) approach, which can improve the productivity of the office work by bottom-up ideas with no or little cost..		
1.2.2 Announce <i>Kaizen</i> Initiative to all sections of DPD and solicit proposals from the interested sections of DPD..		
1.2.3 Award a few best proposals and monitor the progress of their actions.		
1.2.4 Evaluate the impacts of their actions and		
	<b>Inputs</b>	<b>Important Assumptions</b>
	<b>Sudanese Side:</b> - Assignment of counterparts	Socio-economic and political situation in the pilot areas is not worsened.

Output and Activities	Objectively Verifiable Indicators	Means of Verification
<p>disseminate their positive results to all staff of DPD for their replication.</p> <p>1.2.5 If the first year's experiences are found positive, repeat Kaizen Initiative for the coming year, with increasing cost sharing by the State Gove</p> <p>1.2.6 Evaluate <i>Kaizen</i> Initiative and disseminate it to other State Government organizations.</p> <p>1.2.7 Conduct necessary training and field visits for DPD staff and other counterparts, if other donors do not provide them.</p> <p>1.3 Strengthen capacity of the State Government to plan, monitor and evaluate the Kassala State Strategic Plan 2012-2016 in collaboration with UNDP</p> <p>1.3.1 Coordinate with UNDP on how the Project can provide supplementary support to the planning, monitoring and evaluation process of the Kassala State Strategic Plan 2012-2016.</p> <p>1.3.2 Assist the State Government's planning process of the Strategic Plan 2012-2016 by establishing the Civil Service Database in Directorate of Civil Service in SMoF.</p> <p>1.3.3 Assist the State Government's monitoring process of the Strategic Plan 2012-2016 by establishing computerized project monitoring and evaluation system in DPD.</p> <p>1.3.4 Evaluate the quality of the Strategic Plan 2012-2016 with external learned persons.</p>	<p>- Office space and utility cost (electricity, water, etc.)</p> <p>- Local Component budget (allowance for counterparts, etc.)</p> <p><b>Japanese Side:</b></p> <p>- Experts (Project Leader, Project Coordinator, Procurement Expert, Construction Expert, etc.)</p> <p>- Provision of necessary budget and equipment for training and the pilot activities</p> <p>- Sort-term training outside Sudan</p>	<p>Kassala State Government's strong commitment in the project is maintained.</p> <p>Kassala State Government assigns necessary counterparts to JICA Expert Team, and most of them are not changed during the project.</p> <p>Kassala State Government disburses necessary government budget to cover the Local Component in the project.</p> <p>Federal Government supports Kassala State Government, especially in terms of Local Component budget.</p>

Source: PDM attached in M/M signed on 13 March 2011.

### Change of Activity 1.3 in PDM

As mentioned in Section 2.2.1 (4), who will be the coordinator to prepare the State Strategic Plan 2012-2016 is still discussed between DPD and SPC. So during the 4th JCC Meeting on 13 March 2011, the original activity "1.3 Strengthen capacity of Strategic Planning Council (SPC) in collaboration with the project counterparts (DPD, SMoAFI, SMoH, SWC and KVTC)" was proposed to change to the new statement "1.3 Strengthen capacity of the State Government to plan, monitor and evaluate the Kassala State Strategic Plan 2012-2016 in collaboration with UNDP" as shown in Table 2.2.11, to avoid the misinterpretation that SPC is the coordinator for the State Strategic Plan 2012-2016. The proposal was approved during the JCC Meeting and the Minutes of Meeting on revision of PDM was officially signed by the Resident Representative of JICA Sudan Office and Director General of State Ministry of Finance, Economy and Labor Force, Kassala.

**Table 2.2.11: Revision of Activity 1.3 in PDM**

Original Activity	Revised Activity
<p>1.3 Strengthen capacity of Strategic Planning Council (SPC) in collaboration with the project counterparts (DPD, SMoAFI, SMoH, SWC and KVTC)</p> <p>1.3.1 Conduct participatory capacity assessment of SPC and discuss what is needed to improve the functions of SPC.</p> <p>1.3.2 Provide necessary training and equipment to improve the capacity of SPC.</p> <p>1.3.3 Assist SPC's evaluation process of the Strategic Plan 2007-2011 by facilitating the</p>	<p>1.3 Strengthen capacity of the State Government to plan, monitor and evaluate the Kassala State Strategic Plan 2012-2016 in collaboration with UNDP</p> <p>1.3.1 Coordinate with UNDP on how the Project can provide supplementary support to the planning, monitoring and evaluation process of the Kassala State Strategic Plan 2012-2016.</p> <p>1.3.2 Assist the State Government's planning</p>

<p>project counterparts' participation in the evaluation process.</p> <p>1.3.4 Assist SPC's planning process of the next Strategic Plan 2012-2016 by learning from the evaluation results of the Strategic Plan 2007-2011 and by facilitating the project counterparts' participation in the planning process.</p> <p>1.3.5 Assist SPC's monitoring process of the Strategic Plan 2012-2016 in collaboration with the project counterparts.</p>	<p>process of the Strategic Plan 2012-2016 by establishing the Civil Service Database in Directorate of Civil Service in SMoF.</p> <p>1.3.3 Assist the State Government's monitoring process of the Strategic Plan 2012-2016 by establishing computerized project monitoring and evaluation system in DPD.</p> <p>1.3.4 Evaluate the quality of the Strategic Plan 2012-2016 with external learned persons.</p>
---	---

Source: Discussion between DPD and the JICA team.

Since the new activity 1.3 (Support to the Strategic Plan) will need more time and budget than the original activity 1.3 (Capacity Development of SPC), there will not be enough time and budget to conduct the activity 1.2 (Kaizen Approach) in the first year. Therefore, the JICA team and DPD have agreed to start activity 1.2 (Kaizen Approach) in the second year.

## 2) Detailed Plan for Key Activities

In the planning cluster, the details on some key activities are planned as shown in Table 2.2.12.

**Table 2.2.12: Detailed Plan for Some Key Activities in the Planning Cluster**

<b>Activity Name</b>	<b>1.1.1 Training of DPD and SPC staff on Project Planning, Monitoring and Evaluation Methodologies</b>
Objective	To provide DPD and SPC staff with a systematic and comprehensive training package, which covers from project planning to monitoring and evaluation, with emphasis on scientific methodologies.
Target	All DPD (and SPC) staff
Outputs	- Improved capacity of DPD and SPC staff to plan, monitor and evaluate various development projects
Schedule	2 weeks (6 hours / day x 10 days) or 1.5-2 months (2 hours / day x 30 days) in Year 1
Instructor	Arabic-speaking Sudanese lecturers are preferred by DPD.
Contents of Training	<ul style="list-style-type: none"> <li>- Project planning through Logframe Approach (stakeholder analysis, problem tree, objective tree, plan of operation, etc.)</li> <li>- Project monitoring and evaluation through Logframe Approach</li> <li>- Indicator setting</li> <li>- Data collection and analysis</li> <li>- Monitoring reporting</li> <li>- Management Information System (MIS), etc.</li> </ul>
Budget	SDG 20,000

<b>Activity Name</b>	<b>1.1.3 Target Community Surveys</b>
Objective	To measure the impacts of the pilot projects of the Project in target communities
Target	Target communities for rural water supply, agriculture and livestock, and health activities
Outputs	- Baseline and Endline reports on the situation (including socio-economic indicators) of the target communities for the Project
Schedule	Year 1: 3-4 months (June – September 2011) for baseline data collection of target communities Year 3: 3-4 months (June – September 2013) for endline data collection of target communities
Sub-contractor	Sudanese consultants or NGO
Activities	<ul style="list-style-type: none"> <li>- Design the questionnaire survey and focus group discussions in order to measure the impacts of the planned interventions by the Project to the target communities in water supply, agriculture and livelihood and health sectors</li> <li>- Select the capable consultant to do the work and sub-contract the work</li> </ul>

	<ul style="list-style-type: none"> <li>- Pre-test the survey questionnaires and focus group discussion guide in the field</li> <li>- Conduct necessary training of the enumerators and interviewers</li> <li>- Conduct the survey in the target communities</li> <li>- Input all data collected in PC and make various analysis on these data to measure possible impacts of the Project</li> <li>- Produce Survey Report which compiles all data and analysis with the conclusion and recommendation section</li> </ul>
Budget	Year 1: SDG 50,000 Year 2: SDG 50,000

<b>Activity Name</b>	<b>1.2 Kaizen (Daily Self-Improvement Actions) Initiative (1.2.1-1.2.4)</b>
Objective	To motivate DPD staff to propose and implement their own ideas to improve their work and services (small-scale daily improvement with little or no cost), using their knowledge and skills learned from the past training
Target	All DPD staff
Outputs	<ul style="list-style-type: none"> <li>- Higher motivation of DPD staff to improve their work</li> <li>- Higher productivity of office work in DPD with no or little investment</li> <li>- Higher quality of services by DPD for the local population</li> </ul>
Schedule	The pilot project will be implemented in Year 2 and Year 3. Each year, around 3-5 best proposals will be selected based on their quality. One action will be implemented for 3 to 8 months depending on the needs.
Activities	<ol style="list-style-type: none"> <li>1) One-day orientation workshop for all DPD sections will be organized, in order to explain the following: <ol style="list-style-type: none"> <li>a) Objective and guiding principles of this Initiative,</li> <li>b) In what format they can propose their ideas,</li> <li>c) From what criteria their proposals will be reviewed,</li> <li>d) Reporting and financial management duties and formats, etc.</li> </ol> </li> <li>2) The interested sections of DPD will submit the proposals after one week of orientation.</li> <li>3) The best 3-5 proposals will be selected based on the above proposal review criteria.</li> <li>4) A small grant (max SDG 4,000 for one action) will be provided to the awarded sections of DPD to implement their ideas to improve their services for the public.</li> <li>5) Awarded sections of DPD will implement their proposed actions in their workplace.</li> <li>6) After implementation, awarded sections of DPD must prepare and submit the following two reports: <ol style="list-style-type: none"> <li>a) Action Report to report the process and impacts of the proposed actions, and</li> <li>b) Financial Report with all receipts to certify the transparent use of the provided fund.</li> </ol> </li> </ol>
Budget	<p style="text-align: right;">(Cost Sharing)</p> Year 2: SDG 30,000 - Cost Sharing: JICA 100% (SDG 30,000, DPD 0% (SDG 0)) Year 3: SDG 30,000 - Cost Sharing: JICA 60% (SDG 18,000), DPD 40% (SDG 12,000) Total: SDG 60,000 - Cost Sharing: JICA SDG 38,000, DPD SDG 12,000

<b>Activity Name</b>	<b>1.3.2 Establishment of Computerized Civil Service Database</b>
Objective	To establish the civil service database in Directorate of Civil Service of SMoF in order to facilitate the annual planning of Chapter I budget (civil servant salaries)
Target	Directorate of Civil Service of SMoF
Outputs	<ul style="list-style-type: none"> <li>- Establishment of Civil Service Database in Directorate of Civil Service</li> <li>- Use of Civil Service Database for annual planning of Chapter I budget more accurately and easily, and for other purposes (such as human resource management and capacity development planning for civil servants, etc.)</li> </ul>
Schedule	3-4 months in Year 1 (June – September 2011)
Sub-contractor	Sudanese IT consultant
Activities	<ul style="list-style-type: none"> <li>- Review the current system of human resource management of civil servants</li> <li>- Design and develop appropriate Civil Service Database in consultation with Directorate of Civil Service</li> <li>- Train the staff of Directorate of Civil Service on how to use Civil Service Database</li> </ul>
Budget	SDG 30,000

<b>Activity Name</b>	<b>1.3.3 Establishment of Computerized Monitoring and Evaluation System</b>
Objective	To establish computerized monitoring and evaluation system to facilitate the progress monitoring of the Annual Budget Plan and the 5-year Strategic Plan
Target	DPD
Outputs	- Establishment of computerized monitoring and evaluation system in DPD - Use of computerized monitoring and evaluation system for systematic progress monitoring of Annual Budget Plan and the 5-year Strategic Plan
Schedule	3-4 months in Year 1 (Sep – Dec 2011)
Sub-contractor	Sudanese IT consultant
Activities	- Review the current system of project monitoring and evaluation in DPD - Design and develop appropriate computerized monitoring and evaluation system in consultation with DPD - Train the staff of DPD on how to use computerized monitoring and evaluation system
Budget	SDG 30,000

<b>Activity Name</b>	<b>1.3.4 External Evaluation of the Kassala State Strategic Plan 2012-2016</b>
Objective	To objectively evaluate the quality of the 5-year Strategic Plan 2012-2016 with the external learned persons
Target	DPD (and SPC)
Outputs	- External Evaluation Report by External Learned Persons, which includes not only the results of the evaluation, but also practical suggestions for future improvement
Schedule	3-4 months in Year 3 (June – September 2013)
Sub-contractor	A few external learned persons (such as university lecturers, researchers from research institutions, or experienced managers or field workers in NGO)
Activities	- Discuss the appropriate design of external evaluation with DPD (and SPC) - Select the several capable external evaluators for the Strategic Plan 2012-2016 - Discuss the evaluation design with the selected external evaluators and make schedule for the survey - Conduct necessary surveys (interviews, field visit, etc.) - Compile External Evaluation Report
Budget	SDG 30,000

Source: Discussion between DPD and the JICA team.

### **(3) Planned Inputs**

#### **1) Experts**

To implement the planned activities in PDM, the following experts are necessary in the Planning Cluster (see Annex 4.1 for the proposed assignment of each expert).

- a) Team Leader / Development Planning and Management Expert who manages and coordinates the whole team, conducts various activities for DPD, and monitors the activities in other clusters by participating in some important events such as study tour, training, workshops, meetings, etc.
- b) Coordinator / Local Government Expert who assists Team Leader through the administration of the Project such as financial management, national staff management, vehicle management, stationery management, etc., as well as by providing technical support to all clusters utilizing his/her Local Government expertise.
- c) Procurement Expert who assists the administration of the procurement of furniture and equipment (investigation of suppliers and prices, assisting in preparing specification, communication with JICA Sudan Office, financial management in procurement, etc.) in collaboration with the experts in all clusters.
- d) Construction Expert (Architect) who assists the construction/rehabilitation of facilities in all clusters from the technical points of view (designing, cost estimate, tendering, supervision, etc.).

## 2) Training in Japan and Other Countries

In order to make technical transfer to the counterparts more effective, the following training outside Sudan is proposed for the Planning Cluster (see Annex 4.2 for all clusters).

- a) 1<sup>st</sup> Year: Training in Japan (Theme: *Kaizen* activities in Japanese offices)  
 Participants: 2 staff from DPD and 4 staff from other clusters (Total: 6 persons)  
 Timing: December 2011 to January 2012  
 Duration: Around 2 weeks  
 Justification: Before starting *Kaizen* activities in 2<sup>nd</sup> Year, it is useful for the counterparts to learn and understand how the *Kaizen* activities have started in Japan, how effective they are, how to organize *Kaizen* activities in the workplace, etc. by visiting Japan where *Kaizen* concept was born and developed.
- b) 2<sup>nd</sup> Year: Training in Nepal or Tanzania (Theme: Monitoring and evaluation system of development projects)  
 Participants: 2 staff from DPD and 4 staff from other clusters (Total: 6 persons)  
 Timing: August to September 2012  
 Duration: Around 2 weeks  
 Justification: To improve monitoring and evaluation system in the Kassala State Government, it is useful to learn from the successful monitoring and evaluation system established in other developing countries such as Nepal (monitoring and evaluation system in the planning sector) or Tanzania (monitoring and evaluation system in the agriculture sector). Experience sharing between two countries will be mutually beneficial to learn from each other and motivate both sides.
- c) 3<sup>rd</sup> Year: Training in Singapore or Zambia (Theme: *Kaizen* activities in Developing Countries)  
 Participants: 2 staff from DPD and 4 staff from other clusters (Total: 6 persons)  
 Timing: August to September 2013  
 Duration: Around 2 weeks  
 Justification: To adopt Japanese *Kaizen* concept in the Kassala State Government, it is useful to know how other developing countries are adopting *Kaizen* concept to improve the quality of service in the government sector. In Singapore, Productivity Center was established to promote *Kaizen* activities in Singapore, and in Zambia, 5S concept has introduced in hospitals and significantly improved the quality of the services by the hospitals. Experience sharing between Singapore/Zambia and Sudan will be mutually beneficial to learn from each other and motivate both sides.

## 3) Equipment

The list of furniture and equipment requested by DPD is shown in Table 2.2.13 (see Annex 4.3.2 for all clusters). These furniture and equipment are also requested to ERDP, so it is necessary to follow up the progress of the procurement by ERDP before starting the procurement in the implementation phase.

**Table 2.2.13: Furniture and Equipment Requested by DPD**

Category	Item	No.
Furniture	Cupboard	4
Equipment	Desktop computer set (with a laser printer, a table, a chair, a UPS and a stabilizer)	5
	Projector and screen	2
	Scanner	1
	Plasma screen	1
	Heavy duty photocopying machine with a cabinet	1
	Digital camera	1
	GPS	2

Source: DPD

During the preparation phase, the JICA team facilitated the procurement of a diesel generator to be installed in the DPD compound (Table 2.2.14 and Annex 4.3.1).

**Table 2.2.14: Equipment Procured in DPD in the Preparation Phase**

Category	Item
Generator	Diesel Generator Set (Output Power: 60 kVA 48 kW)

Source: JICA team

#### 4) Facilities

The list of facility construction/rehabilitation requested by DPD is shown in Table 2.2.15 (see Annex 3.3.1 for all clusters). These construction/rehabilitation are also requested to ERDP, so it is necessary to follow up the progress of the procurement by ERDP before starting the procurement in the implementation phase.

**Table 2.2.15: Facility Construction/Rehabilitation Requested by DPD**

Category	Item	No.
Construction / Rehabilitation	Construction of vehicle parking (concrete floor and shade for 10-15 cars)	1
	Rehabilitation of training hall	1

Source: DPD

#### 5) Budget (Japanese Side)

In order to implement the Project with the inputs mentioned above, the Japanese side is to prepare the budget of around 304 million JPY for the Planning Cluster and general administration cost (see Annex 3.5 for details). Two-third of the budget is allocated for assignment of experts, which is equivalent to 68 person-months.

#### 6) Budget (Sudanese Side)

The Sudanese side plans to appropriate SDG 187,500 for the Planning Cluster during the three-year technical cooperation (see Annex 3.6 for details). These budget will be used for costs of meeting such as JCC meetings, allowances for the counterparts, running cost (electricity and water) of the project office, cost sharing in *Kaizen* initiative, etc.

### 2.2.3 Preparatory Work for the Implementation Phase

#### (1) Technology Transfer to the Counterparts

Technology transfer activities and technical facilitation carried out for DPD during the preparation phase are as shown in Table 2.2.16.

**Table 2.2.16: Summary of Technology Transfer in the Planning Cluster**

Period	Activity	Method	Results and Lessons
21 February 2011	Capacity assessment of DPD and SPC	Participatory workshop	The majority of DPD staff (29 persons) and SPC staff (4 persons) participated in this workshop, and conducted the evaluation of the past training for DPD and SPC staff, participatory assessment of necessary capacities for DPD and SPC staff, and the evaluation of the Annual Budget Plan 2011 and the Kassala State Strategic Plan 2007-2011. The lesson learned from this workshop is that more than 30 participants

Period	Activity	Method	Results and Lessons
			were a bit difficult to manage as one group, so some participants were losing concentration during the discussion.
24 February 2011	Review of the Kassala State Strategic Plan 2007-2011	Discussion	The key DPD and SPC staff (3 persons from DPD and 1 person from SPC) who are knowledgeable on the Strategic Plan participated in this discussion, jointly reviewed the Kassala State Strategic Plan 2007-2011. This discussion among a small group was found very effective and informative.
December 2010 - February 2011	Preparation of the plan in the Planning Cluster for 3-year technical cooperation	Discussion	The JICA team and DPD conducted a series of discussion in order to plan the activities for the Planning Cluster in the forth-coming technical cooperation. It was an important experience for DPD to be actively engaged in these discussions to formulate the PDM for the implementation phase of the Project.
November 2010 - March 2011	Joint Coordination Committee (JCC) Meetings (1 <sup>st</sup> JCC on 3 November 2010, 2 <sup>nd</sup> JCC on 20 December 2010, 3 <sup>rd</sup> JCC on 26 January 2011, 4 <sup>th</sup> JCC on 13 March 2011)	Coordination meeting	Except 1 <sup>st</sup> JCC Meeting, DPD chaired JCC Meetings and successfully coordinated discussions among the state and federal counterparts, JICA Sudan Office and the JICA team. Through these meetings, the communication and relationship between DPD and line ministries have been significantly improved to ensure the smooth operation of the preparation phase of the Project. During JCC meetings, line ministries frequently appealed DPD the importance to secure Local Component budget in order to cover the Sudanese operation cost for the Project, and DPD was finally able to distribute the Local Component budget for the preparation phase to line ministries in March 2011.

Source: JICA team.



## 2.3 Water Supply Cluster

### 2.3.1 Situation Analysis

#### (1) Present Situation of the Water Supply in the State

Table 2.3.1 is an overview of water supply Sector in Kassala State. According to the Sudan Household Survey (SHHS) conducted in 2006, 38.7% of the population of the Kassala State has access to improved sources of drinking water.

**Table 2.3.1: Overview of Water Supply Sector in Kassala State**

	Indicator	Value	Data
<b>Kassala State</b>	The number of water yard	128	Kassala state
	Rate of breakdown	25%	2009
	Percentage of Household Members using improved drinking water sources (%)	38.7%	2006 56.1% (Sudan)
	Percentage of water on premises (%)	29.0%	2006 30.1% (Sudan)
	Mean time to the source of drinking water (in minutes)	67.1 minutes	2006 42.9 minutes (Sudan)
	Under fives with diarrhea in the last two weeks preceding the survey (%)	16.3%	2006 28.2% (Sudan)
<b>Kassala Town</b>	Water supplied population	East Bank Area : 165,915 persons <u>West Bank Area : 132,614 persons</u> 298,529 persons	Census Data in 2008
	The number of customers in Kassala Town	East Office : 20,848 <u>West Office : 14,247</u> Total : 35,095	March 2011
	The number of claims in Kassala Town	East Office : 400 claims/month <u>West Office : 141 claims/month</u> Total : 54 claims/month	Dec. 2010 – Feb. 2011
	Fee collection in East Bank Area	Customer : 24% Public Institution : 31% Household : 84%	2009
	The length of transmission and distribution pipe		2010
	Asbestos Cement Pipe	82.5km (55.9%)	
	Rigid Polyvinyl Chloride Pipe	64.2km (43.9%)	
	Steel Pipe	0.3km (0.2%)	
	The number of leakages in East Bank Area	6.09 places/day	Jan.2010 – May.2010

Source : “5th Sudan Population and Housing Census 2008”, PWC (2009) “Water and Sanitation Strategic Plan”, “Sudan Household Health Survey 2006” and JICA Team

#### 1) Overview of the Situation of the Water Supply Facilities in the Rural Area

Table 2.3.2 is an overview of rural water supply facilities by locality in Kassala State.

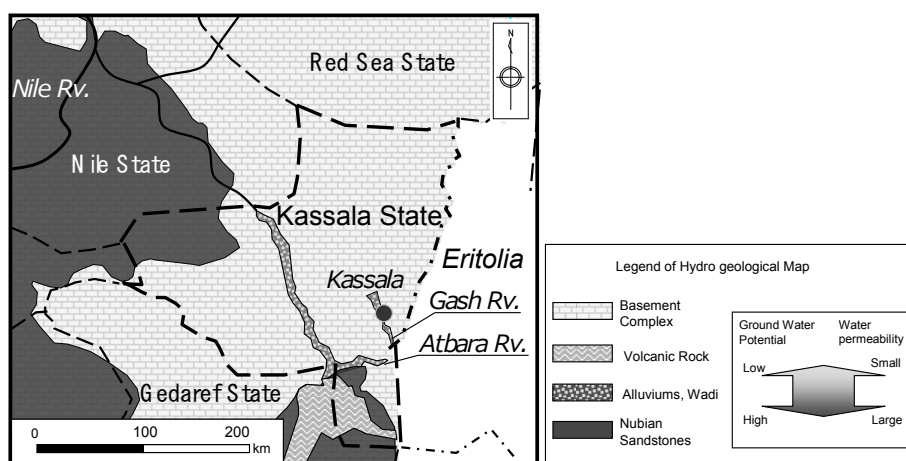
**Table 2.3.2: Situation of Rural Water Supply Facilities (Water Yards) by Locality (as of 2009)**

No.	Locality	Number of Boreholes	Boreholes				Rate of breakdown Not functioning / Total number (%)
			Number	Function (Fn)	Not function (Not Fn)	Abandon	
1	Kassala	0	0	0	0	0	0
2	Rural Kassala	45	54	41	7	6	15
3	West Kassala	3	11	4	7	0	64
4	Rural Aroma	19	23	17	3	3	15
5	North Delta	4	7	6	1	0	14
6	River Atbara	0	0	0	0	0	0
7	New Halfa	11	40	27	4	9	13
8	Girba	13	13	10	3	0	23
9	Wad El Helew	7	7	4	3	0	43
10	Telkuk	16	20	13	7	0	35
11	Hamshkoreib	10	16	6	7	3	54
	Total	128	191	128	42	21	25

Source: M&H Consultancy Services, PWC, Water and Sanitation Strategic Plan for Kassala State, Final Report, Volume1, 2009.

## 2) Overview of Hydro-geology in the State

It is highly important to ensure water supply because it affects significantly activities in other sectors such as health, agriculture and vocational training. However, the possibility of water resource development is confined to the basins of Atbara River and Gash River and the Nubia area, and other areas of the state have little potential due to the geologic (rocky) conditions (Figure 2.3.1). Most of villages in the state are formed along the two rivers and have relatively rich water resources.



**Figure 2.3.1 Hydro-geological Map of Kassala State**

## (2) Government Policy and Priorities

### 1) Kassala State Water Corporation (SWC) Policy and Plan

The Ministry responsible for the water supply sector is the Ministry of Physical Planning and Public Utilities. The Ministry has the jurisdiction over SWC in charge of the water supply in Kassala State. SWC is required to be financially independent, as well as the public power corporation. Operating costs of water supply facilities, including employment costs, are covered by water tariffs in Kassala State. A new project of SWC is drafted every five years. DPD-SMoF assesses the feasibility of the project and then decides whether to adopt the project.

## 2) SWC Budget

SWC fiscal revenues were the only water charges until 2008. However, state subsidies were provided to SWC in 2009. The amount of revenue in 2009 was 3.1 times that in 2008. The use of the fund is limited to the construction of new facilities and replacement of asbestos cement pipes with polyvinyl chloride pipes. According to the financial statements, the balance tends to be a deficit. The business of SWC is far from good condition as shown in Table 2.3.3.

**Table 2.3.3: SWC Financial Situation**

(Unit: SDG)

			2005	2006	2007	2008	2009
Revenue	Revenue from water charge	Commercial	128,580	87,287	96,036	104,549	279,727
		Public	73,432	92,741	96,003	119,482	174,828
		Domestic	5,917,364	5,275,357	5,809,154	7,243,640	8,286,880
	Other revenue related to water supply		0	0	0	0	0
	Subsidy from the government		0	0	0	0	14,745,933
	Total Income		6,119,376	5,455,385	6,001,193	7,467,671	23,487,368
Expense	Operating expense	Personal Cost	2,730,673	2,629,292	2,908,567	2,957,577	4,323,637
		Power Cost	1,850,000	1,704,402	1,980,994	2,298,599	2,510,334
		- Fuel Cost	350,000	265,257	268,922	434,056	742,785
		- Electricity Charge	1,500,000	1,439,145	1,712,072	1,864,543	1,767,549
		Maintenance	1,362,513	2,065,631	1,066,548	1,236,742	1,014,911
		Depreciation	31,338	86,458	94,006	94,006	94,006
		Others (Development)	177,192	56,059	134,158	1,095,690	15,523,123
	Total		6,151,716	6,541,842	6,184,273	7,682,614	23,466,011
	Income deduction	Tax				150,498	235,524
		Others					
Total expense		6,151,716	6,541,842	6,184,273	7,532,116	23,230,487	
Revenue - Expense		-32,340	-1,086,457	-183,080	-64,445	256,881	

Source: JICA Team

## 3) Priorities and Strategies

The Public Water Corporation (PWC) has announced a policy on the WASH program (Government of National Unity - Sudan Water, Sanitation and Hygiene (WASH) Policy, 2009). The program was created with the assistance of UNICEF in 2009 and related to the 15 northern states in Sudan. Table 2.3.4 shows the policy of the WASH program for the water supply sector.

**Table 2.3.4: WASH Program Policy, Water Supply Sector (2010-2016)**

<b>1</b>	<b>Access to safe and adequate water supply shall be made available to all people of northern states of Sudan in urban, rural and nomadic areas within the shortest time possible</b>
1-1	Access to safe and adequate water supply shall be provided to all communities, urban, rural and nomadic populations. Greater efforts shall be made to overcome the gaps in water supply development to increase access to safe and adequate water to all people by 2026. The road map to achieve this target requires the coverage to reach 82% by 2015 to achieve WASH related MDGs and 100% by 2026.
<b>2</b>	<b>The following strategies shall be followed to achieve access to safe and adequate water supply in rural areas</b>
2-1	Active community participation at all stages of water supply development shall be followed and community awareness of proper water handling and use, and hygienic living shall be promoted.
2-2	The leadership role of women in community water supply activities shall be encouraged, including planning, implementation, operation and maintenance and overall management of rural water systems.
2-3	The designated government bodies at federal and state levels shall take full responsibility for adequate training of community members as well as water works personnel of SWC and WES in technical, management and other capacity building skills.
2-4	To ensure system sustainability, involvement of qualified private sector in the management of water systems shall be encouraged as alternative to community management. While involving private sector, appropriate arrangements that safeguard the needs of the vulnerable sections of the community shall be put

	in place.
2-5	The nomadic population shall be provided with access to water supply for livestock while protecting to the environment.
<b>3</b>	<b>The following strategies shall be followed to achieve access to safe and adequate water supply in urban areas.</b>
3-1	Water needs for domestic use shall be given the highest priority. Water required for flush toilets and sewerage systems waste removal from households and public buildings shall also be provided.
3-2	The urban water supply system shall be administratively independent, with an efficient management system and run in a cost effective and sustainable manner.
<b>4</b>	<b>The service level in rural and urban water supply systems shall ensure availability of adequate, safe and accessible water at reasonable distance to all communities, at all times and at affordable cost.</b>
4-1	Appropriate service levels in water quantity, quality and service distance shall guide the implementation processes so that it is well regulated, and the system well maintained.
4-2	The amount of the recommended water consumption shall be progressively increased to 30-50 liters/capita/day.
4-3	Increases in consumption rate with the rise in standard of living within communities shall be made for timely system extensions.
4-4	Rural water supply systems shall also be designed to provide additional water supplies for small-scale economic purposes.
4-5	The standard water consumption shall be 100 liters/capita/day for household connections and 60 liters/capita/day for public taps.
4-6	Urban water systems shall be designed to allow for future growth in water demand and allow for growth for timely system extensions.
4-7	Water for domestic use shall be chemically and bacteriological fit for human consumption at all times within acceptable limits.
4-8	Access to rural water supply at a public water points shall be not more than 500 meters walking distance from the dwelling.
4-9	Urban water supply systems delivering water at public water points shall be not more than 100 meters walking distance from the dwelling.
<b>5</b>	<b>Appropriate technology for water supply systems shall be examined and used to ensure sustainability and affordability.</b>
5-1	The selected technology shall be appropriate to local skills, management and financing capacity in order to ensure sustainability.

Source: Government of National Unity-Sudan Water, Sanitation and Hygiene (WASH) Policy, 2009, UNICEF.

### (3) Existing Projects and Programs (by government, donors and NGOs)

Table 2.3.5 summarizes the activities of other development partners. In the Water, Environment and Sanitation (WES) unit of the WASH program, UNICEF provides assistance to improve the rural water supply situation. Two engineers in SWC are currently seconded to the WES unit. Table 2.3.6 shows an overview of the WASH program.

**Table 2.3.5: Activities of Other Development Partners**

Donor	Activity
UNICEF	The WASH (Water, Sanitation and Hygiene) program aimed at improving water and sanitation situation in rural areas has been promoted since 2006. The program improves water supply and sanitation facilities in rural areas. This program has a collaborative framework with donors including NGOs. UNICEF plays a role as the coordinator of the sector. UNICEF's WES (Water and Environmental Sanitation) unit is an organization that consists of state officials in Kassala State. Mainly, the unit trains community people. This program is also involved in the construction of national water policy.
EU	ERDP (Eastern Recovery and Development Programme) targeting three states (Red Sea, Kassala and Gedaref) started in 2009. This project has six targets, i.e., agriculture, water, livestock, income measures for women, vocational training, and forestry. The water sector in Kassala is allocated Euro50 million. EU agreed to set up generators, six wells and six pumps.

**Table 2.3.6: WASH: Sector Planning Components**

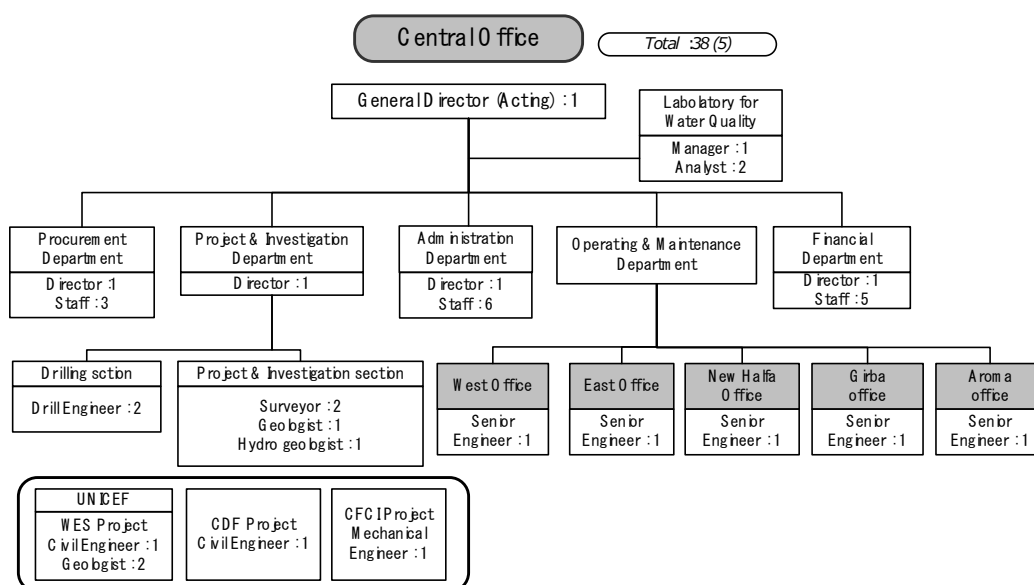
Category	Component
WASH services	- Rural water, Urban Water - Rural Sanitation and Hygiene - Urban Sanitation and Hygiene
Emergency	- Emergency Areas
WASH capacity development	- Institutional Matters, Sector Coordination - Organizational Capacity - Information and Knowledge - Sector Learning - Human Resources Development

**(4) Current Situation and Problem Analysis**

In order to analyze the current situation and issues relating to water supply, this section first explains the organizational status of SWC and then examines the situation of urban and rural water supply, respectively.

**1) Organization**

SWC is composed of five regional offices and the central office. Figure 2.3.2 shows the number of engineers and the organization of SWC. The engineers in charge of investigation and planning belong to the central office. Managers of the five regional offices are engineers, i.e., mechanical, electrical and water supply engineers. They belong to the operating and maintenance department in the central office. The five regional offices do not have an engineer except the managers. Therefore, it is necessary to increase engineers for water supply facility maintenance.



Source: Based on the interview with SWC Central Office.

**Figure 2.3.2: Organization Chart of SWC Central Office**

**Table 2.3.7: Number of SWC Offices and Staff**

Office	No of Dept.	No. of Staff	No. of Engineers*
Central Office	6	38	17 (-5)
East Office	6	158	1 (+1)
West Office	6	76	1 (+1)
New Halfa Office	5	112	2 (+1)
Girba Office	5	51	1 (+1)
Aroma Office	3	17	1 (+1)
<b>Total</b>		<b>452</b>	<b>23</b>

Note: \* The five senior engineers in the Central Office normally go on duty in each branch office as a chief.

## 2) Urban Water Supply

### A) Issues in Urban Water Supply

Kassala Town has developed around Gash River. The pipe network has also been extended. The Kassala Town center is also called old Kassala. Around the commercial areas, public facilities, private houses, etc. are located. They are near the existing water treatment plant (Mahata purification plant), and the water supply situation is relatively good. On the other hand, there is not a major facility for water supply in the periphery of the city. A lot of new residents including IDP have moved into the area, where the building of a pipe network is delayed and water supply services are not enough.

SWC has been improving water supply by developing well water sources and constructing pump stations and elevated tanks in the southern and northern areas against the increased demand for water. However, water supply is insufficient recently. The water supply is cut off in Kassala Town during the peak period from April to May, which creates a serious problem. Water failures occur in residential areas in the eastern and northern areas far from the existing water distribution facilities. The Kassala State Government regards that eliminating a water failure is a priority issue of the water policy (Table 2.3.8).

The rate of leakage in the East Bank area is estimated at about 35%. The volume of leakage from the asbestos cement pipe (AC pipe) make up over 50% of total. The length of AC pipe is 82 km (56% of total length of distribution pipe network). In 2011, SWC will change the AC pipe to uPVC pipe or High-Density Polyethylene Pipe (HDPE pipe).

**Table 2.3.8: The Number of Claims in Kassala Town (Dec. 2010 – Feb. 2011)**

Month	SWC East Office				SWC West Office				Total
	Water failure	Water decline	Leakage	Sub-total	Water failure	Water decline	Leakage	Sub-total	
December 2010	41	0	410	451	10	0	163	173	<b>624</b>
January 2011	34	5	336	375	20	0	120	140	<b>515</b>
February 2011	155	15	204	374	30	0	80	110	<b>484</b>
<b>Total</b>	<b>230</b>	<b>20</b>	<b>950</b>	<b>1,200</b>	<b>60</b>	<b>0</b>	<b>363</b>	<b>423</b>	<b>1,623</b>
Average (claims/month)	77	7	317	400	20	0	121	141	<b>541</b>

Source: JICA team

### B) Issues in Operation and Maintenance of Water Distribution Facilities

The operation and maintenance of water distribution facilities in Kassala Town are conducted by the Water Source Division and the Water Distribution Division of SWC East Office and West Office. The managers of the East and West Offices are only engineers who graduated from a university. Other technicians do not have higher education and practice from their experience. SWC does not have organizational and systematic management at present. For the general operation and maintenance of

facilities, they need a technical capacity, budget, training, business reports, maintenance manuals and maintenance plans.

### C) Issues in Water Charge

The water charge system is based on a flat rate. Commercial customers pay a monthly fee classified by category and pipe size. Water charges have increased since 2005. However, the State Government did not approve the rate increase in water charges in 2010, because there is a water shortage during the dry season in 2010. The fee collection rate from households is more than 80%, which is relatively high. However, the fee collection rate from commercial and public facilities is about 20%. SWC has begun to improve the situation by establishing a new post in charge of fee collection from commercial and public institutions.

**Table 2.3.9: The Number of Customers, Water Charge and Fee Collection in Kassala Town**

Contract Form		No. (2011)		Water Tariff (Unit : SDG)						
		East	West	2005	2006	2007	2008	2009	2010	2011
Commercial	A (Hotel, water supplier)	13	25	200	200	250	270	270	270	280
	B (Restaurant)	387	89	60	60	65	70	70	70	80
	C (Coffee Shop)	750	726	30	30	35	35	35	35	35
	Fee collection rate			26%	22%	18%	19%	24%		
Public Institution	Office	220	95	60	60	65	70	70	70	80
	School	191	58	15	25	30	35	35	35	45
	Mosque, church	99	69	0	0	0	0	0	0	0
	Fee collection rate			10%	28%	26%	31%	31%		
Household	1inch pipe	274	89	25	25	30	30	35	35	40
	3/4 inch pipe	3,290	418	23	23	27.5	30	30	30	35
	1/2inch pipe	15,624	12,678	14	14	15	16.5	17	17	20
	Fee collection rate			87%	82%	79%	81%	84%		
Total		<b>20,848</b>	<b>14,247</b>	<b>The number of customers : 35,095 (2011)</b>						

Source: JICA team

## 3) Rural Water Supply

### A) Roles of Stakeholders

There are various stakeholders in the water supply sector. Described below are the roles of major stakeholders, i.e., SWC, localities and communities.

#### Role of SWC

SWC was previously divided into the urban water supply sector and the rural water supply sector but integrated into one organization in 1994. Rural communities are responsible for the operation and maintenance of rural water supply facilities since 2006 due to a policy change in the State Government. However, communities' capacity for operation and maintenance is weak. Many local communities rely on funds from international agencies and NGOs. Budget for rural water supply facilities of the State Government is limited and inadequate. SWC implements urban water supply in the center of each locality. Therefore, the main jobs of each SWC are fee collection and facility maintenance in urban areas with pipe network distribution. But the State Government approves of return the responsible for operation and maintenance form communities to SWC in the end of 2010. Therefore, SWC decided to lunch the operation and maintenance team in the rural area based on the division of works set by State Government.

### Role of Localities

The localities of Kassala State do not have engineering technical staff for water supply. The budget is not secured except an emergency in water supply. Two monitoring staff members of Rural Kassala locality check the situation of facilities in two villages every week. The locality sends the claim for water facilities from communities to the SWC office. Tables 2.3.10 and 2.3.11 show an overview of the operating and maintenance system by locality.

**Table 2.3.10: Operating and Maintenance System of Rural Water Supply Facilities (Rural Kassala, Rural Aroma, New Halfa, Girba and North Delta)**

Locality Item	Rural Kassala	Rural Aroma	New Halfa	Girba	North Delta
<b>SWC office</b>	East Office	Aroma Office	New Halfa Office	Girba Office	not existing
<b>Maintenance Staff</b>	Engineer: 2 persons Operator: 12	Engineer: 2 persons Operator: 12	Engineer: 2 persons Operator: 12	Engineer: 2 persons	—
<b>Workshop</b>	Present in East Office	There is no workshop. The equipment and tools are stored in two containers.	The number of staff in the workshop decreased in August 2010 due to a budget shortage.	No workshop	—
<b>Vehicle</b>	Pickup type: 3 Rental car: 2 10t truck: 1 5t truck: 1	Truck: 1 Truck: 1 (out of order) Pickup type: 1	Rental car: 3	Rental car: 1	—
<b>Equipment</b>	Only basic tools	Only basic tools	There is a lot of equipment, but most of them are broken.	Only basic tools	—
<b>Support from Locality</b>	<ul style="list-style-type: none"> <li>- There is no technical staff.</li> <li>- Two monitoring staff in two villages</li> </ul>	<ul style="list-style-type: none"> <li>- There is no technical staff</li> <li>- When the serious trouble happens in water supply system, e.g., water failure, the locality cooperates with SWC.</li> </ul>	<ul style="list-style-type: none"> <li>- here is no technical staff.</li> <li>- The budget of maintenance is limited.</li> <li>- Not entrust the private sector</li> </ul>	<ul style="list-style-type: none"> <li>- There is no technical staff.</li> <li>- When a trouble occurs, they request technical support from the SWC office.</li> </ul>	<ul style="list-style-type: none"> <li>- There is no technical staff.</li> <li>- There is a person in charge of well management, a security guard and unskilled labor in Wager village.</li> </ul>
<b>Problem in Water Supply</b>	<ul style="list-style-type: none"> <li>- For villages away from Gash Delta, it is difficult to secure water sources.</li> <li>- People in most villages conduct operation and maintenance of the water facilities by themselves due to the shortage of technical staff in SWC</li> <li>- Most villages</li> </ul>	<ul style="list-style-type: none"> <li>- Most of water is transferred from the sources in Kassala and Gammam. They need new water sources.</li> <li>- SWC provides technical assistance to each village but cannot cover the western region.</li> </ul>	<ul style="list-style-type: none"> <li>- Lacking staff for rural areas</li> <li>- The technical staff of New Halfa SWC work mainly for the pipe network distribution and purification plants.</li> <li>- There are a lot of water diseases, e.g., schistosomiasis and typhoid due to drinking from surface water in the canal.</li> </ul>	<ul style="list-style-type: none"> <li>- Central Girba Town has pipe network distribution for water supply.</li> <li>- Localities entrust the operation and maintenance to the community.</li> <li>- SWC does not conduct maintenance.</li> <li>- Many</li> </ul>	<ul style="list-style-type: none"> <li>- Water is taken from River Gash in the rainy season and then water infiltrates into the basin.</li> <li>- The amount of water resources depends on rainfalls.</li> <li>- Water supply from</li> </ul>



Locality Item	Rural Kassala	Rural Aroma	New Halfa	Girba	North Delta
	lack techniques and funds.		- Each village has a filtration facility but no rehabilitation.	community organizations for maintenance are very weak.	Gammam has stopped since 1990.

### Role of Communities

Communities are supposed to play a role in operation and maintenance of the water supply facilities they are using but often fail to do so due to lack of awareness, skills and funds. Many NGOs have been carrying out rural water supply development since 2002. For example, Plan Sudan constructed a new facility with their funds but did not train the community people for operation and maintenance. The WES unit provides training on the repair and maintenance of a hand pump, water yards and *hafir* (traditional water pond).

### 4) Capacity Assessment

The SWC staff collaborated with the JICA team throughout the preparation phase in tasks such as the baseline survey on rural water supply, workshops and procurement of equipment. They made analysis and presentation and actively participated in these tasks. Through the collaboration, the JICA team has observed: a) SWC, as an institution, does not have an adequate core capacity especially for management; b) there are not a sufficient number of technical staff with expertise necessary for planning, construction and operation and maintenance of water supply facilities; and 3) SWC needs a more enabling environment, especially means of transportation, other facilities and equipment and, above all, budgets. This is still a preliminary conclusion based on limited interactions due to time and budget constraints (e.g., counterpart personnel was not fully assigned to the JICA team due to lack of funds). Therefore, it is necessary to carry out a supplementary but more thorough capacity assessment at the early stage of the implementation phase.

### 2.3.2 Plan for the Implementation Phase

#### (1) Basic Policy

#### 1) Priority and Strategy Setting for the Implementation Phase

Table 2.3.12 shows priority and strategy of the water supply sector based on problem analysis.

**Table 2.3.12: Priority and Strategy of the Water Supply Sector**

Category	Prioritized Issue	Approach to Development
Urban water supply in Kassala town	<ul style="list-style-type: none"> <li>- Strengthening capacity of operation and maintenance of water supply in Kassala</li> <li>- Changing the old AC distribution pipes for the PVC pipes or the HDP pipes</li> </ul>	<ul style="list-style-type: none"> <li>- Updating the inventory of water distribution network</li> <li>- Compilation of the manual for the pipe network management</li> <li>- The training of SWC staff in PWCT</li> <li>- Making an annual planning</li> </ul>
Financial management	<ul style="list-style-type: none"> <li>- Increase of SWC income by the water fee collection rate</li> </ul>	<ul style="list-style-type: none"> <li>- Developing of the capacity of data management for SWC staff</li> <li>- Making the database of customer</li> <li>- Establishment of financial management system</li> </ul>

Category	Prioritized Issue	Approach to Development
Rural water supply	<ul style="list-style-type: none"> <li>- Strengthening capacity of operation and maintenance of rural water supply facilities in Kassala State</li> <li>- Establishment of operation and maintenance system</li> <li>- Scoping of new water sources in low potential zone</li> </ul>	<ul style="list-style-type: none"> <li>- Implementation of the rehabilitation of the rural water supply facilities by SWC operation and maintenance team.</li> <li>- Compilation of the manual for the operation and maintenance of rural water supply facilities</li> <li>- The training of SWC staff in PWCT</li> <li>- Acquirement of technology on geophysical survey to research the new water sources</li> </ul>

## 2) Prioritized Areas for the Pilot Projects

### A) Purposes and Strategy for Implementation of the Pilot Projects

The JICA team, in collaboration with SWC, conducted a baseline survey to select the pilot site during the preparation phase. Table 2.3.13 shows the purposes and strategy for implementation of the pilot projects.

**Table 2.3.13: Purposes and Strategy for Implementation of the Pilot Projects**

Purposes of the Pilot Projects	
1	Strengthen of the SWC's capacity of operation and maintenance through the pilot project.
2	Establishment of operation and maintenance system by collaboration between SWC and the village.
3	Establishment of the pilot site as a good model for maintenance the water supply facilities.
Strategy for Implementation of the Pilot Projects	
1	<b>Rehabilitation for exciting water supply facilities.</b>
	Make an implementation plan with specifications.
	Rehabilitation of the borehole by the mobile workshop.
	Exchanging from the engine pump to the submersible pump.
	Monitoring and Evaluation.
2	<b>Establishment or the operating and maintenance system.</b>
	Establishment of Water Management Committee.
	Technical training for the operators in village by SWC staff.

### B) Pilot Sites Selection

The seven candidate pilot sites were selected based on the baseline survey. Table 2.3.14 is a list of candidate pilot sites. Then these seven candidate sites were evaluated based on the criteria as shown in Table 2.3.15. Finally, two sites were selected as the pilot site (Table 2.3.16).

**Table 2.3.14: Candidate Pilot Sites Selected based on the Baseline Survey**

No.	Locality	Village	Population
1	Girba	Koraj	1,009
2	Girba	Slobakassala	1,445
3	Girba	Banad	316
4	Rural Kassala	Wadsharifai	21,289
5	Rural Kassala	Awad	3,368
6	Rural Kassala	Tashotiai	2,571
7	Wad El Helew	Wad El Helew	15,564

**Table 2.3.15: Criteria for Selecting Pilot Sites**

No.	Category	Criteria
1	Socioeconomic conditions	<ul style="list-style-type: none"> <li>The population with the properly conditions for the project scale</li> <li>Stability electricity supply</li> </ul>
2	Water sources	<ul style="list-style-type: none"> <li>Stability water yield</li> <li>Good quality</li> </ul>
3	Situation of water supply	<ul style="list-style-type: none"> <li>Existing boreholes, exciting water facilities</li> </ul>
4	Administration and management	<ul style="list-style-type: none"> <li>Existing responsible person of water management</li> <li>Cooperative community to the project</li> </ul>
5	Other donors	<ul style="list-style-type: none"> <li>The other donor is not in activity</li> </ul>
6	Other sectors	<ul style="list-style-type: none"> <li>Possibility of the collaboration with the other sector</li> </ul>

**Table 2.3.16: Selected Pilot Sites**

No.	Category	Item	Wad El Helew Locality	Girba Locality	
			Wad El Helew Town	Banad	
1	<b>Social and economical condition</b>	Population	15,564	316	
2		Household	3,621	61	
3		Situation of the electricity	Stable supply	Nothing	
4	<b>Water source</b>	Quantity of the water	Static water level : About G.L.-30m	Static water level : About G.L.-30m	
5		Quantity of the water	Good	Quality : Good EC : 70.9 (ms/s)	
6		Distance from source to feeding area	0~1.5 km	0~1 km	
7	<b>Situation of water supply</b>	Existing well	4 boreholes	1 borehole	
8		Existing facility	Elevating tank	6 tanks (Necessary to need of tank)	1 tank, Capacity: 27 m <sup>3</sup> Material: FRP
			Public fountain	6 fountains	1 fountain
9	<b>Administration and management</b>	Water management committee	Existing	Existing (4 persons)	
10		Responsible person of water management	Existing	Existing	
11		Water tariff collection system	Existing (Tariff rate: 0.5 SDG/20 L)	Existing (Tariff rate:1 SDG/160 L)	
12		Responsibility person of O&M	Nothing	Nothing	
13	<b>The other donor</b>	WES Project	Existing (Opening the work shop about hygiene, water sanitation)	Nothing	
14		The other donor	Nothing	Nothing	
15	<b>The other sector</b>	Possibility of the collaboration with the other sector	Possible (with Health Sector) Rural Hospital: 1		
16	<b>Rationales for Selection</b>		<ul style="list-style-type: none"> <li>It is possible to improve drastically the water supply situation on this site by rehabilitating 4 boreholes and changing the pumps.</li> <li>This site is also a pilot site of the health cluster. Therefore, synergistic</li> </ul>	<ul style="list-style-type: none"> <li>It is possible to pumping up water by using a solar battery system, because the water supply population are the around 300 persons.</li> <li>This site is accessible from Kassala Town. Therefore it is effective</li> </ul>	

No.	Category	Item	Wad El Helew Locality	Girba Locality
			Wad El Helew Town	Banad
			<p>effect is expected through collaboration.</p> <ul style="list-style-type: none"> <li>Many refugees live in this area. "Support to poverty group" is a part of the policy of the project.</li> </ul>	<p>to carry out the pilot project.</p> <ul style="list-style-type: none"> <li>This community is cooperative for the project.</li> </ul>

After selecting the pilot sites, the JICA team and SWC's counterparts carried out a supplementary survey to prepare a procurement plan in Wad El Helew. Figure 2.3.3, Table 2.3.217 show a map of water supply facilities in Wad El Helew.

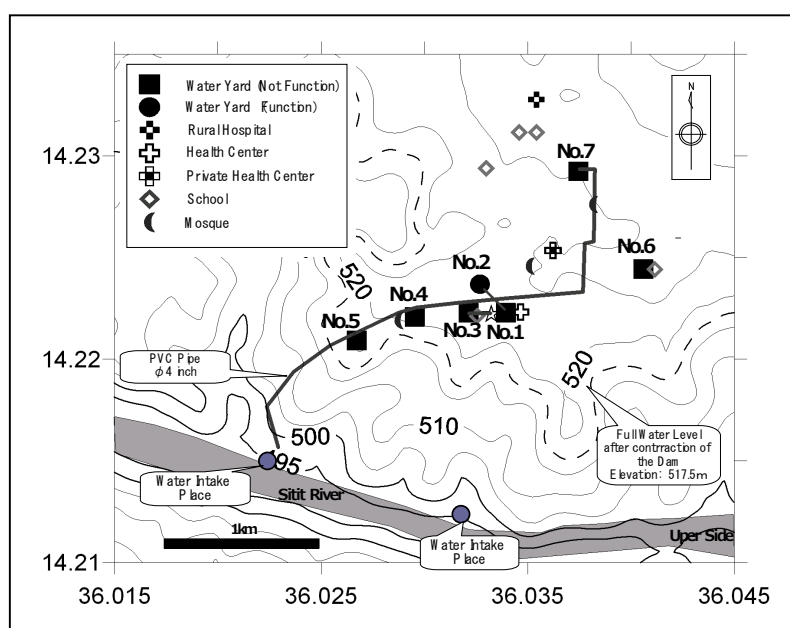


Figure 2.3.3: Locations of Water Supply Facilities in Wad El Helew

Table 2.3.17: Outline of Water Yards in Wad El Helew (as of February 2011)

No.	No of BH	Function	Not Function	Abandon	Diameter of well (inch)	Depth (m)	S.W.L. (G.L.-m)
1	1	0	1	0	6.6	93	33.5
2	1	1	0	0	-	-	-
3	1	0	0	1	8	95	-
4	1	0	0	1	8	95	-
5	1	0	1	0	8	116	33.2
6	1	0	1	0	10	94	39.4
7	3	0	0	3	-	-	-
Total	9	1	3	5			

BH: Borehole, S.W.L.: Static Water Level

Source: JICA team

## (2) Plan for the Implementation Phase

### 1) Project Design Matrix (PDM)

Having analyzed the current situation in water supply, the following framework for technical cooperation

was developed and approved.

**Table 2.3.18: Project Design Matrix (PDM) for the Water Supply Cluster**

Output and Activities	Objectively Verifiable Indicators	Means of Verification
<i>Output 2: Kassala State Government's capacity to provide service for <b>Water Supply</b> is strengthened.</i>	2.1 No. of SWC staff who learned the technical manual on operation and maintenance of water distribution network (from 0 to 7)	2.1 Training manual, Participants list of the training, Training Record
2.1 Strengthen capacity of operation and maintenance of water supply in Kassala Town	2.2 No. of rehabilitation works conducted based on the technical manual on operation and maintenance of water distribution network (from 0 to 5/month)	2.2 Working record
2.1.1 Update the inventory of water distribution network in Kassala Town on GIS system.	2.3 No. of SWC staff who learned the manual of management of water fee data (from 0 to 7)	2.3 Management Manual of water fee data, Participants list of the training, Training record
2.1.2 Compile manuals on operation and maintenance of water distribution network in Kassala Town..	2.4 No. of water users who are registered and properly managed in the water fee data system. (from 0 to 35,095)	2.4 Database of customers
2.1.3 Coordinate training of SWC staff in collaboration with PWCT on operation and maintenance of water distribution network.	2.5 Increase in SWC income by reduction of cases of uncollected water fees	2.5 Financial statement
2.1.4 Propose an annual work plan for maintaining and renovating water distribution network in Kassala Town.	2.6 No of rehabilitation work by the SWC's maintenance team for rural water supply facility (from 0 to 25 (5 for Year 1, 10 for Year 2, 10 for Year 3))	2.6 Working record
2.1.5 Make policy recommendations on operation and maintenance of urban water supply facilities in Kassala State.	2.7 No of SWC staff community people and private entities who are trained on operation and maintenance of rural water supply facilities (from 0 to 70 (10 for Year 1, 30 for Year 2, 30 for Year 3) )	2.7 Participants list of the training, Training Record
2.2 Strengthen capacity of financial management in State Water Corporation (SWC) office	2.8 No of SWC staff who learned the method of geophysical survey (from 0 to 4)	2.8 Survey report, Participants list of the training, Training record
2.2.1 Design and build the database of customers in Kassala Town.	2.9 No of alternative water resources found by SWC (from 0 to 4)	2.9 Survey report
2.2.2 Compile a manual and train SWC staff on database management on PC.	2.10 SWC's Annual Work Plan for urban & rural water supply	2.10 Annual work plan
2.2.3 Make policy recommendations on financial management of SWC based on database of customers.		
2.3 Strengthen capacity of operation and maintenance of rural water supply facilities in Kassala State		
2.3.1 Collect information on good practices and manuals of operation and maintenance of rural water supply system in Sudan.		
2.3.2 Compile a manual for appropriate techniques for operation and maintenance of rural water supply facilities in Kassala State.		
2.3.3 Train SWC staff and establish the maintenance team and system for rural water supply facilities based on the division of works set by State Government.		
2.3.4 Train private sector and communities on operation and maintenance of rural water supply facilities based on the division of works set by State Government.		
2.3.5 Conduct the geophysical survey for the poor areas with ground water resources in northern Kassala state.		
2.3.6 Conduct a planning survey in selected pilot sites, and design the rehabilitation works based on the division of works set by State Government.		
2.3.7 Rehabilitate rural water supply facilities in pilot		
	<b>Inputs</b>	<b>Important Assumptions</b>
	<b>Sudan side (SWC):</b> 1. Counterpart personnel assignment 2. Necessary facilities and equipment 3. Local costs	Sudanese counterparts of the Project are not shifted frequently.  Participants of the trainings provided

Output and Activities	Objectively Verifiable Indicators	Means of Verification
<p>sites based on the division of works set by State Government.</p> <p>2.3.8 Make policy recommendations on operation and maintenance of rural water supply facilities in Kassala State.</p>	<p><b>Sudan side (PWC):</b></p> <p>1. Receiving trainees</p> <p><b>Japanese side:</b></p> <p>1. Experts 2. Equipment 3. Part of operation costs</p>	<p>by the Project continue taking charge of the present work</p> <p>Deliveries of the Equipment planned to be procured by the Project do not delay largely</p>

Source: PDM attached in M/M signed on 13 March 2011.

## 2) Plan for Pilot Activities

Based on the situation analysis of the water supply sector, the JICA team proposes the following pilot activities for the implementation phase.

**Table 2.3.19: Plan for Pilot Activities in the Water Cluster**

Pilot Project Name	Rehabilitation of rural water facilities in Wad El Helew
Objective	<ol style="list-style-type: none"> <li>1) Construct rural water facilities making synergy effect with health sector</li> <li>2) Rehabilitate rural water supply facilities based on the rehabilitation work plan of SWC maintenance team</li> </ol>
Target Area	Wad El Helew
Outputs	<ul style="list-style-type: none"> <li>• Improve the capacity of planning, designing and execution management</li> <li>• Improve the capacity of operation and maintenance of rural water supply facilities for SWC staff.</li> <li>• Improve the capacity of operation and maintenance of rural water supply facilities for the operator in community.</li> <li>• Improve the situation of water supply system in public facilities.</li> </ul>
Schedule	This pilot project will be implemented starting from the first year of the implementation phase.
Activity	<ol style="list-style-type: none"> <li>1. Renovate and rehabilitate the current water supply facilities. <ol style="list-style-type: none"> <li>1) Develop an implementation plan with specifications.</li> <li>2) Manage the construction <ul style="list-style-type: none"> <li>• Rehabilitate the 4 wells by mobile workshop</li> <li>• Repair the pump in SWC workshop</li> <li>• Construct the new tank</li> <li>• Distribute the pipeline from the wells to public and governmental services.</li> </ul> </li> <li>3) Conduct to monitoring and evaluation</li> </ol> </li> <li>2. Establish operation and maintenance system <ol style="list-style-type: none"> <li>1) Establish a committee of water supply management.</li> <li>2) Improve capacity to operate and manage the equipment and facilities.</li> <li>3) Make policy recommendations on water fee collection in the community.</li> <li>4) Strengthen coordination between SWC and the community.</li> <li>5) Train the village operators in the SWC training center. <ul style="list-style-type: none"> <li>• SWC staff train the village operator</li> </ul> </li> </ol> </li> </ol>
Budget	SDG 240,240

Pilot Project Name	Rehabilitation of rural water facilities in Girba locality
Objective	<ol style="list-style-type: none"> <li>1) Rehabilitate rural water supply facilities based on the rehabilitation work plan of SWC maintenance team</li> <li>2) Introduce the new technology in SWC</li> </ol>
Target Area	Girba locality
Outputs	<ul style="list-style-type: none"> <li>• Conduct to rehabilitation rural water supply facilities by new team of SWC.</li> </ul>

	<ul style="list-style-type: none"> <li>• Improve the capacity of operation and maintenance of rural water supply facilities for SWC staff.</li> <li>• Improve the capacity of operation and maintenance of rural water supply facilities for the operator in community.</li> </ul>
Schedule	This pilot project will be implemented starting from the second year of the implementation phase.
Activity	<ol style="list-style-type: none"> <li>1. Renovate and rehabilitate the current water supply facilities. <ol style="list-style-type: none"> <li>3) Develop an implementation plan with specifications.</li> <li>4) Conduct the rehabilitation. <ul style="list-style-type: none"> <li>• Rehabilitate the borehole by mobile workshop.</li> <li>• Replace the engine pump with submersible pump.</li> </ul> </li> <li>5) Conduct monitoring and evaluation.</li> </ol> </li> <li>2. Establish a committee of water supply management. <ol style="list-style-type: none"> <li>1) Improve capacity to operate and manage the equipment and facilities.</li> <li>2) Make policy recommendations on water fee collection in the community.</li> <li>3) Strengthen coordination between SWC and the community.</li> <li>4) Train the village operators in the SWC training center. <ul style="list-style-type: none"> <li>• SWC staff trains the village operators.</li> </ul> </li> </ol> </li> </ol>
Budget	SDG 92,240

### (3) Planned Inputs

#### 1) Experts

For effective and efficient implementation of the project, the JICA team proposes the dispatch of the following experts (See Annex 3.1 for the assignment schedule). Relatively long term assignments are allocated to the two experts, namely “Rural Water Supply (Operation and Maintenance)” and “Urban Water Supply (Pipe Network Management / Construction Management)”. Short-term experts include “Rural Water Supply (Geophysical Survey)” and “Urban Water Supply (Financial Management)”.

- a) Rural Water Supply (Operation and Maintenance): to assist counterparts in conducting investigation, planning, rehabilitation, monitoring and evaluation for the pilot projects; to assist counterparts in compiling the manual for operation and maintenance of water supply facilities in rural area; to coordinate activity for training of counterparts in Public Water Corporation Training Center; and to support SWC’s training courses for village operators of rural water facilities.
- b) Urban Water Supply (Pipe Network Management / Construction Management): to provide technical support on updating the inventory of water distribution network in Kassala Town on GIS system; to assist counterparts in compiling the manual for operation and maintenance of water distribution network in Kassala Town; to provide support for SWC to compile the annual work plan for maintaining and renovating water distribution network; to support for SWC to design and build the database of customers in Kassala Town; to assist counterparts in compiling a manual and training SWC staff on database management on PC; and to coordinate training of counterparts in Public Water Corporation Training Center (PWCT) in Khartoum.
- c) Rural Water Supply (Geophysical Survey): to provide technical support to geophysical survey for the areas with poor ground water resources in the northern Kassala state.
- d) Urban Water Supply (Financial Management): to analyze the financial management of SWC utilizing the database of customers; and to make recommendations on how to improve the financial management and water tariff system for SWC to provide high-quality and sustainable urban water services in Kassala Town.

## 2) Training in Japan and Other Countries

### a) 1<sup>st</sup> Year: Training in Morocco (Theme: Urban Water Supply)

Participants: SWC Engineers of Pipe Network Management (6 persons)

Timing: January to February 2012

Time Span: Around 2 weeks

Justification: Morocco has installed more advanced system of water distribution network. It is very important to gain the knowledge of pipe network management and water meter system. This may deepen and widen their expertise, including vision for long term.

### b) 2<sup>nd</sup> Year: Training in Zambia (Theme: Rural Water Supply)

Participants: SWC Engineers of operation and maintenance for rural water supply (6 persons)

Timing: August to September 2012

Justification: Zambia has advanced training method for the engineer, public operator, and village operator. It is very important for SWC engineers to gain the knowledge of the operation and maintenance system

## 3) Equipment

The list of equipment necessary for the project implementation is available in Annex 3.3.2. The equipment necessary for rehabilitation of water supply facilities in rural area includes i) pumping test equipment and air-lift tools for mobile workshop; ii) borehole camera for mobile workshop; and iii) 4t crane truck. The equipment for pipe network management in Kassala town includes i) The survey equipment for the urban area (ultrasonic liquid flow meter, pipe detector, etc.); ii) repair tool for pipe network (welding machine for HDPE, Tools, etc.)

In general, procurement needs some time to be completed; hence it is necessary to start procedures during the early stage of the implementation phase (May-July 2011), at least for pilot activities in the 1<sup>st</sup> year. For a quick start of the pilot activities in the implementation phase, the following equipment was procured (For a detailed list, see Annex 3.3.1).

Table 2.3.20 is a summary of equipment procured during the preparation phase. Prior to the provision of the equipment, the JICA team and SWC agreed on the following points concerning the equipment management.

- The costs of running and maintenance (including fuel) of the equipment are to be included in the local components.
- SWC is to select three persons in charge of equipment management (vehicle management, equipment management, workshop management).
- SWC ensures the safe parking/storage of the vehicles and equipment.

**Table 2.3.20: Equipment procured in the Water Supply Cluster in the Preparation Phase**

Category	Equipment	Quantity	Objective	Place of Storage	Person in charge of	
					Vehicle	Workshop
Urban Water Supply	Backhoe Loader	2 units	Exchanging and installation for distributing pipes and feed water pipes	Garage in East Office	○	
	Crane Truck (3t Crane, 10t Truck)	1 unit			○	
	Hand Tools for Workshop	1 lot	Repairing for distributing and feed pipes	Container in West Office		○



Category	Equipment	Quantity	Objective	Place of	Person in charge of
Rural Water Supply	Generator 30 kVA	6 sets	Lading for mobile workshop truck Emergency power in pilot sites	Garage in West Office	○
	Crane Truck (4t Crane, 18.5t Truck)	1 unit	Mobile Workshop	Garage in East Office	○

Necessary equipment will be procured based on the plan for the implementation phase with a view to strengthening SWC's capacity for operation and maintenance of water supply facilities. The JICA team, in collaboration with SWC, will take the following steps for the procurement.

- Examine necessary equipment.
- Prepare a list of equipment with specifications.
- Estimate costs of the listed equipment based on information obtained from potential suppliers.
- Prepare a procurement schedule.

Table 2.3.21 is a list of equipment requested by SWC, which will be finalized through discussions and necessary surveys during the implementation phase.

**Table 2.3.21: List of Equipment Requested**

Sector	Purpose	Item	Q'ty	Unit
Operation and Maintenance of Water Supply Facilities in Rural Areas	Pumping test equipment and air-lift tools for mobile workshop	Air compressor	1	Unit
		Pumping test equipment, air-lift Tools	1	Set
		Submersible Pumps Type A Cable: 170m, Control Panel	1	Set
		Submersible Pumps Type B Cable: 100m	1	Set
		Welding machine, Welding electrode	1	Unit
		V-notch weir	1	Unit
	Borehole camera for mobile workshop	Borehole camera with a tripod	1	Set
	Modification of the mobile workshop	Steel, Cost for remodeling	1	Set
	Transportation to rural area for O&M	Pickup truck	1	Unit
	Geophysical survey equipment	Multi-channel digital resistivity meter	1	Set
		Tent, Parasol	1	Unit
		Laptop computer	1	Unit
		Anti-virus software	1	Unit
		Textbook	5	Books
	Water analysis equipment for survey in rural area	Potable water analysis equipment	1	Set
	Equipment for survey in rural area	Survey tools for the borehole	1	Set
		Digital camera	2	Unit
		Battery charger	1	Unit
		Emergency light	1	Unit
		Laptop computer	1	Unit
Anti-virus software		1	Unit	
GPS		2	Unit	
Repair equipment for the rural water supply facilities	Repair tools	1	set	
Equipment for training of operator	Equipment in a seminar room	1	Set	
Pipe Network Management / Construction Management	Survey equipment for the urban area	Pipe detector	2	Unit
		GPS	2	Unit
		Digital camera	2	Unit
		Ultrasonic liquid flow meter	2	unit

Sector	Purpose	Item	Q'ty	Unit
	Equipment for pipe network	Large Wind Fan	2	Unit
		Welding machine for HDP	2	Unit
		Working tools	1	Set
		Laptop computer	3	unit
		GIS software	2	set
	Anti-virus software	3	Unit	
	Reference Book	Textbook	5	books
<b>Financial Management</b>	Equipment for financial management and database	Printer	1	unit
		Photocopying machine	1	Unit
		Expansion cord	3	Unit
		Stabilizer	6	Unit
	PC for the database management	Desktop computer	5	Unit
		Anti-virus software	5	Unit
		UPS	5	Unit
	Desk and chair for the PC	Desk	5	Unit
		Chair	5	Unit
Data management	Textbook	5	Books	
<b>Pilot Site</b>	Wad El Helew site	Submersible pump set (including cable, control panel)	4	Set
	Girba site	Submersible pump set, Equipment of solar battery system	1	Set
<b>Office Equipment</b>	Equipment for Japanese experts	Photocopying machine	1	Unit
		Desk	2	Unit
		Chair	2	Unit
		Bookshelf (large)	1	Unit
		Bookshelf (medium)	1	Unit

#### 4) Budget (Japanese Side)

The budget on the Japanese side is proposed based on the above-mentioned plans for inputs, which is about 196 million JPY (see Annex 3.5) in total for the 3-year period. The most of the budget is to be allocated to the assignment of the experts, which is equivalent to 44 person-months. This is a minimum requirement, however, to ensure the smooth implement of 2 pilot projects in rural area.

#### 5) Budget (Sudanese Side)

The budget plan at the Sudanese side (i.e. local component) includes the allowance for counterparts and fuels and operation and maintenance cost of transportation means. The amount required is identified as 0.57 million SDG (see Annex 3.6). SWC already secured 76 thousand SDG in March 2011.

### 2.3.3 Preparatory Work for the Implementation Phase

#### (1) Pilot Activities

During the preparation phase, the following activities were conducted.

##### 1) Workshops on the Roles of Stakeholders for Rural Water Supply Facilities

Three workshops were conducted to discuss the roles of SWC for rural water supply facilities. Table 2.3.22 summarized the contents of the workshops held in SWC.

**Table 2.3.22 Overview of the Workshops**

No.	Date	Participants	Theme
1	13 <sup>th</sup> , December, 2010	Central Office : 6 persons WES (Temporary) : 2 persons SWC Staff, total : 8 persons	<ul style="list-style-type: none"> <li>● Presentation and discussion on the result of the survey in rural area</li> <li>● Confirm the situation of water resources in Kassala State and the strategy of SWC</li> </ul>
2	19 <sup>th</sup> , December, 2010	Central Office : 6 persons WES (Temporary) : 2 persons Chief of Aroma Office : 1 person Chief of Girba Office : 1 person SWC Staff, total : 10 persons	<ul style="list-style-type: none"> <li>● Problem analysis on water supply in the urban area and the rural area</li> </ul>
3	28 <sup>th</sup> , February, 2011	Central Office : 7 persons WES (Temporary) : 3 persons Chief of East Office : 1 person SWC Staff, total : 11 persons	<ul style="list-style-type: none"> <li>● Updating system of Distribution pipe network map on GIS in Kassala town.</li> <li>● Roles of stakeholders in tasks for rural water supply facilities</li> </ul>

## A) Roles of Stakeholders in Tasks for Rural Water Supply Facilities

The JICA team conducted a workshop to identify the roles of each stakeholder for rural water supply facilities. Table 2.3.23 shows a summary of discussions of the workshop.

**Table 2.3.23: Roles of Stakeholders in Tasks for Rural Water Supply Facilities**

Category	Task	Responsibility
Investigation, Survey	Inventory survey (boreholes, water supply facilities, social conditions)	SWC
	Pumping test, surveys, making of GIS maps	SWC
	Geological surveys	Public sector
Planning	Waterworks plans	SWC
	Water distribution plans	SWC
	Planning each facility (hydrological calculation, structural calculation, quantity survey)	SWC
Construction Management	Supervising of construction, planning	SWC
	Quality control	SWC
	Quality check	SWC
Administration and Management	Administration	Community
	Operation	Community
	Operating Record	Community
	Water tariff collection	Community
	Periodic check, replacement of the spear parts	Public sector
	Monitoring	SWC, WES
Rehabilitation, Renovation	Small scale spare	Community
	Rehabilitation of boreholes by air lift tools	SWC
	Renovation of each water supply facilities (elevation tank, public fountain, feed pipe network)	SWC

During the implementation phase, SWC should organize a conference with the other stakeholders to make policy recommendations on operation and maintenance of rural water supply facilities in Kassala State. After the conference, the recommended new roles of SWC in rural areas should be authorized through the appropriate government procedures.

## B) Operation and Maintenance Team

An organization chart of SWC's operation and maintenance team (draft) is shown in Figure 2.3.4.

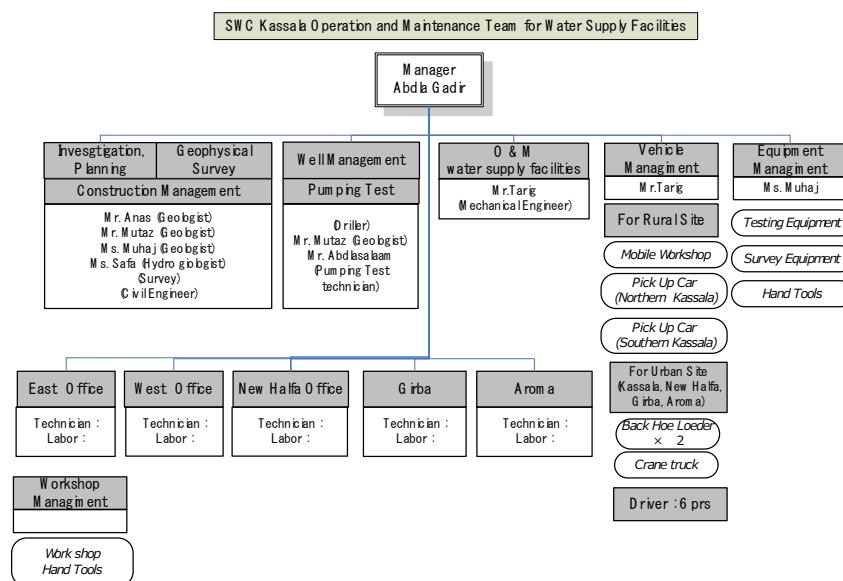


Figure 2.3.4: Organization of SWC's Operation and Maintenance Team (Draft)

## 2) Study Tour to Gedaref SWC

Table 2.3.24 summarizes the responses to the questionnaire of the study tour to Gedaref SWC.

Table 2.3.24: Results of Questionnaire to the Participants in the Study Tour to Gedaref SWC

No.	Result	% of "Yes"
1	The water meter system should be installed in Kassala.	About 90%
2	The installing the water meter system will take time in Kassala	About 60%
3	The water meter system should be installed in the rural area.	About 90%
4	The income and financial situation of the SWC will be improved and increased.	About 90%
5	The SWC should be independent	About 50%
6	They agreed on getting information from other states.	100%
7	They found this study is effective.	100%
8	They have not got any courses about water meter system before	About 80%

Source: JICA team.

## (2) Technology Transfer to the Counterparts

Table 2.3.25 summarized the technology transfer to the counterparts during the preparation phase.

Table 2.3.25: Summary of Technology Transfer in the Water Supply Cluster

No.	Activity	Method	Results	Lessons
1	<ul style="list-style-type: none"> <li>Survey in Wad El Helew for pilot site selection</li> <li>Elevation measurement, inventory survey for the water supply facilities</li> </ul>	OJT	<ul style="list-style-type: none"> <li>Making the topographic map from the DEM data and the measurement data</li> <li>Check the elevation of each facility</li> <li>Inventory of existing boreholes (speck, depth, static water level, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Acquirement of measurement technique by the level instrument</li> <li>Implementation of the inventory survey by SWC staff</li> </ul>
2	<ul style="list-style-type: none"> <li>Presentation about the Assessment of Drinking Water Supply Network and</li> </ul>	Presentation	<ul style="list-style-type: none"> <li>Proposal of the pipe network management by GIS</li> <li>Discussion about draft</li> </ul>	<ul style="list-style-type: none"> <li>Necessity of training about GIS</li> <li>Establishment of updating system for</li> </ul>

No.	Activity	Method	Results	Lessons
	its Sources for Eastern Part of Kassala Town by the counterpart		updating system for GIS map	GIS map • Planning and pipe network management based on the pipe network calculation
3	<ul style="list-style-type: none"> <li>• Discuss the role of SWC for rural water supply facilities based on the division of works set by State Government.</li> <li>• Confirm the different roles of various stakeholders</li> <li>• Equipment management</li> </ul>	Workshops (3 times)	<ul style="list-style-type: none"> <li>• Confirm the member and organization chart of operation and maintenance team</li> <li>• Confirm the budget and plan of SWC in 2011</li> <li>• Identify the role of each stakeholder for rural water supply facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Making an annual plan for the rural area</li> <li>• Training plan for SWC member</li> <li>• Training plan for the village operator</li> </ul>
4	<ul style="list-style-type: none"> <li>• Introducing a new method of water meter system for SWC.</li> <li>• Study the fee collection by a water meter system in Gedaref State to be used in Kassala State.</li> <li>• Study the maintenance</li> </ul>	Study tour	<ul style="list-style-type: none"> <li>• Participant: SWC: 5 persons, DPD: 3persons</li> <li>• Discussion about the water meter system</li> </ul>	<ul style="list-style-type: none"> <li>• Necessity of discussion about installation of water meter system in Kassala Town</li> <li>• Training of the database</li> <li>• Meeting between SWC and DPD</li> </ul>

## 2.4 Agriculture and Livelihood Cluster

### 2.4.1 Situation Analysis

#### (1) Present Situation of Agriculture and Rural Development in the State

##### 1) Overview of the Sector

In Kassala State, 80% of the total population lives in rural areas (Table 2.4.1). Agriculture is a major means of food intake and income for most of the rural households, which indicates the importance of the sector in development of the state.

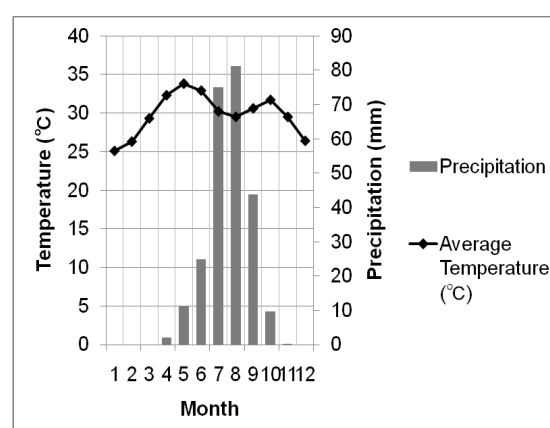
**Table 2.4.1: Households and Population in Localities**

		HH			Population				
		Urban	Rural	Rural irrigated*	Total	Urban	Rural	Rural irrigated	Total
1	Kassala	29,848	23,858		53,706	165,915	132,614		298,529
2	Rural Kassala		27,545		27,545		154,630		154,630
3	West Kassala		6,521		6,521		75,585		75,585
4	Rural Aroma	3,416	16,163		19,579	17,926	84,833		102,759
5	North Delta	2,823	9,363		12,186	21,279	70,572		91,851
6	Telkuk		37,213		37,213		274,978		274,978
7	Hamshkorieb		28,708		28,708		255,288		255,288
8	New Halfa	11,498	12,469	14,051	38,018	58,114	63,021	71,018	192,153
9	Girba	7,119	11,990		19,109	36,858	62,081		98,939
10	River Atbara		24,548		24,548		136,911		136,911
11	Wad El Helew	3,621	16,080		19,701	15,564	69,117		84,681
Total		58,325	214,458	14,051	286,834	315,656	1,379,630	71,018	1,766,304

Note: \*There is no clear definition for Rural Irrigated; however it can be considered as households engaged in New Halfa irrigation scheme.  
Source: 2008 Population Census.

##### 2) Agricultural Zones in the State

Kassala State receives the annual precipitation of 250 mm with the rainy season starting from May and ending in October (Figure 2.4.1). It has rain-fed and irrigated areas. The former areas can be classified into three zones, namely Mechanized Rainfed Zone, Traditional Rainfed Zone, and Agro-Forestry Zone. Irrigated are areas along two large rivers, i.e., the Gash River and Atbara River. They are also categorized into three zones, i.e., Pump Irrigated (Horticulture) Zone and Flood Irrigated Zone and Gravity Irrigated Zone (Figure 2.4.2 and Table 2.4.2).



Source: Data from the Sudan Metrological Authority between 1971 and 2000

**Figure 2.4.1: Precipitation and Temperature in Kassala**

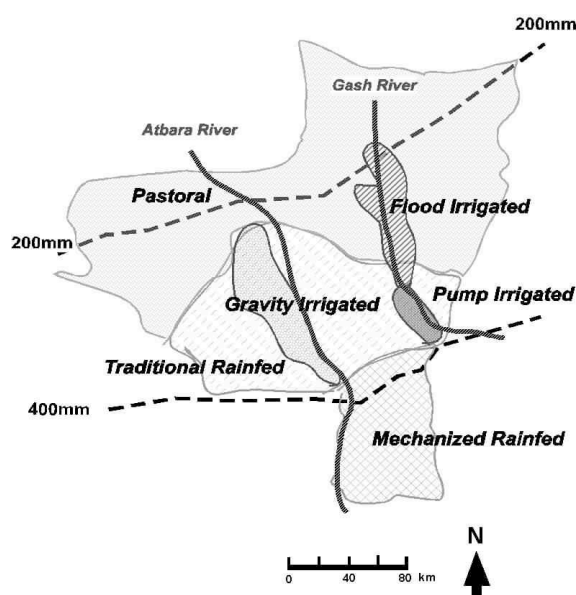
**Table 2.4.2: Agricultural Zone – Area, Main Crops and Localities**

	Area (feddan)	Area (ha)	(%)	Locality
1. Agriculture=(1)+(2)	3,401,000	1,360,400	32.7%	
(1) Irrigated =1)+2)+3)	901,000	360,400	8.7%	
1) Pump Irrigated (horticulture) Zone	291,000	116,400	2.8%	Kassala
2) Gravity Irrigated Zone	350,000	140,000	3.4%	New Halfa
3) Flood Irrigated Zone	260,000	104,000	2.5%	Rural Aroma, North Delta, Telkuk, Hamshkorieb
(2) Rain fed =1)+2)	2,500,000	1,000,000	24.0%	
1) Mechanized Rainfed Zone	2,000,000	800,000	19.2%	Wad El Helew
2) Traditional Rainfed Zone	500,000	200,000	4.8%	Rural Kassala, Rural Aroma, New Halfa, River Atbara, Girba
2. Range/ Agro forestry	6,000,000	2,400,000	57.7%	Rural Aroma, North Delta, Telkuk, Hamshkorieb, River Atbara, Girba,
3. Forest	1,000,000	400,000	9.6%	
Total =1+2+3	10,401,000	4,160,400	100%	

Note: 1 feddan =0.4 ha

Source: Kassala State

Major income sources and issues in the respective agricultural zone are summarized in Table 2.4.3. Horticulture Zone and Gravity Irrigated Zone face the fluctuations of production and thus that of prices, which hinders marketing potential of the Kassala state. In Mechanized Rainfed Zone, while the large-scale farmers tend to use tractors for cultivating 500 – 1,000 feddan, most of the small-scale farmers<sup>3</sup> fail to do farming in a timely manner (in land preparation and sowing). This is because they do not own tractors and have to wait for large-scale farmers to finish machinery operation in order to rent the machinery from them<sup>4</sup>. In Flood Irrigated Zone, people depend on sorghum and animal raising, requiring crop diversification. Currently SMOAFI is thinking to introduce cottons. Traditional Rainfed Zone needs to cope with unstable rainfall and diversification of income sources. The opportunities for income generating activities are limited in this zone, especially for the women-headed households.

**Figure 2.4.2: Rainfall and Agricultural Zones****Table 2.4.3: Major Income Sources and Issues for Agricultural Zones**

Zone	Main crops	Issues for Agriculture	Issues for Rural development
Pump Irrigated (Horticulture) zone	Horticultural crops e.g. citrus, onion, tomatoes	1. High cost of production (especially for irrigation) 2. Lower levels of ground water 3. Price fluctuation 4. Pest and diseases infestation 5. Lack of marketing infrastructure	1. Machines NOT available (sowing, nutrition, handicraft) 2. Improved seeds and tools for home garden NOT available 3. Revolving fund needed 4. The majority of women lack of skill and knowledge
Gravity Irrigated Zone	Horticultural crops e.g. tomato	1. Weak irrigation water control. 2. Spreading of pests & diseases	5. Low productivity & low income

<sup>3</sup> The definition of small-scale farmers in this zone is the one who owns less than 50 feddan .

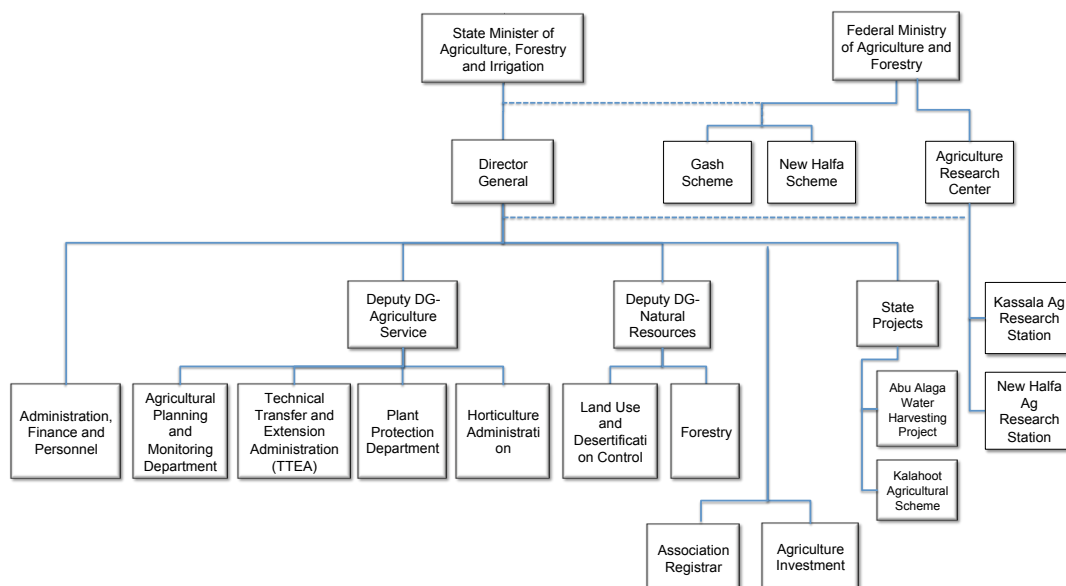
<sup>4</sup> The rental fee is 40-60 SDG/ 5 feddan.

Zone	Main crops	Issues for Agriculture	Issues for Rural development
	okra, groundnuts, cottons	3. Low productivity 4. High costs of production. 5. Price fluctuation	6. Marketing (Established women market) 7. Transportation needed 8. Women association weak and vulnerable 9. Construction terracing by hand ( Traditional Rainfed Zone)
Flood Irrigated Zone	Sorghum, snake cucumbers, and watermelon	1. Mesquite 2. Weak irrigation system 3. Low productivity 4. Weeds and pests infestation 5. Weakness of farmers' skills.	
Mechanized Rainfed Zone	Sorghum, sesame	1. Ineffective water harvest skill 2. Improved seeds not available 3. Sudan grass infestation 4. Rain fall fluctuation 5. Many small-scale farmers lack tractors, thus failing to do timely agriculture.	
Traditional Rainfed Zone	Sorghum	6. Not well established system for agricultural extensions 7. Low productivity 8. Spreading of pests 9. Marketing	

Source: Elaborated by the JICA team based on the report on Capacity Building Project for the Implementation of the Executive Programme for the Agricultural Revival prepared by the experts dispatched to Kassala

### 3) Government Agricultural Services

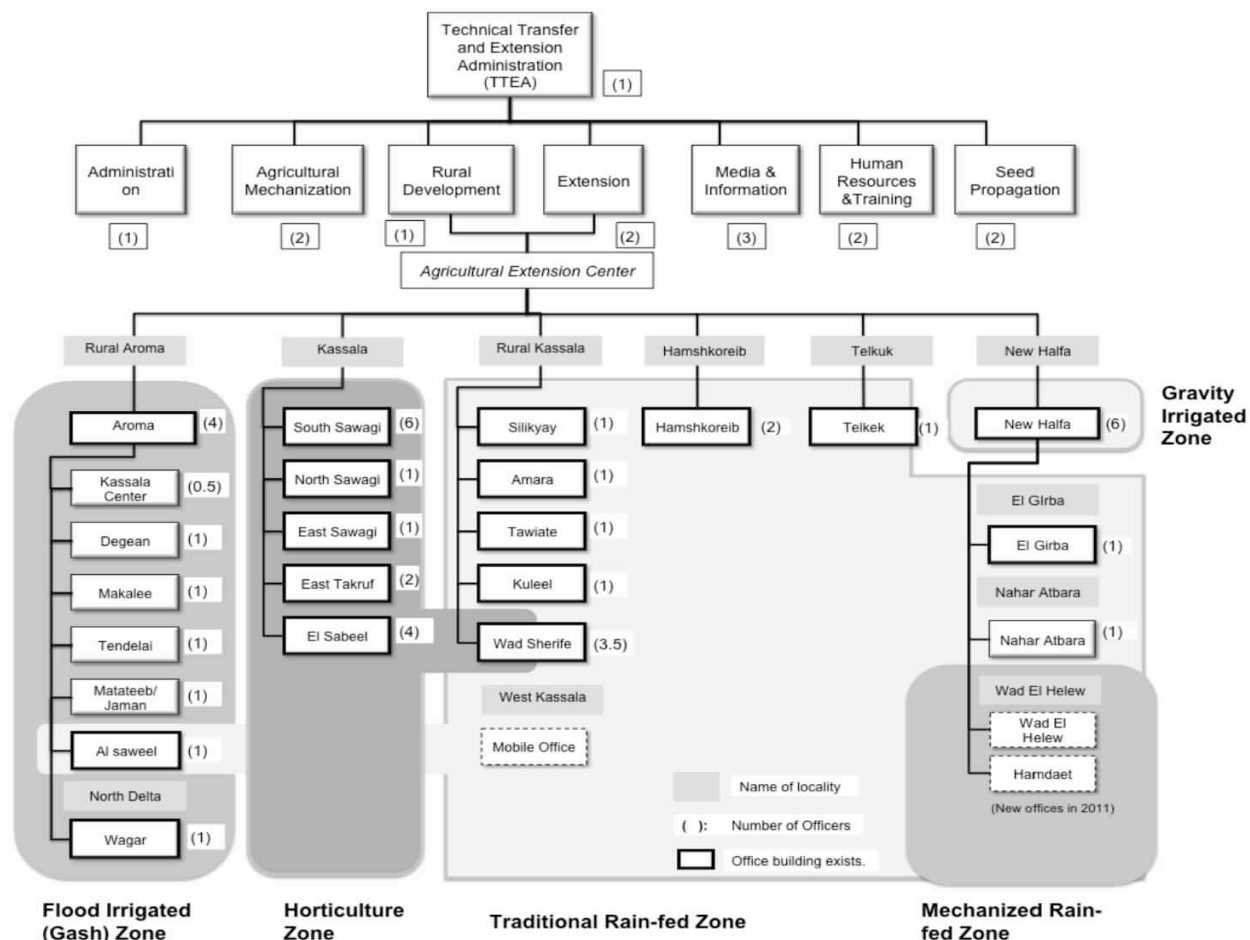
Technical Transfer and Extension Administration (TTEA) of SMOAFI is the main actor who provides agricultural extension and rural development services by utilizing the Agricultural Extension Centers as frontline offices (Figures 2.4.3 and 2.4.4 and Table 2.4.4).



Source: Based on the interview with SMOAFI.

**Figure 2.4.3: Organization of State Ministry of Agriculture, Forestry and Irrigation (SMoAFI)**





Note: Number in ( ) denotes staff number.  
 Source: Interview with TTEA by the JICA team.

**Figure 2.4.4: Organization of Technical Transfer and Extension Administration (TTEA), SMOAFI**

**Table 2.4.4: Officers of TTEA**

	Total	Kassala Head Office	Agricultural Extension Center in Locality of:							Educational Background		
			Kassala	Rural Kassala	Rural Aroma	North Delta	Telkuk	Hamshkorieb	New Halfa	Master	University Graduate	Higher Diploma
Director TTEA	1	1									1	
Agriculture Mechanization	2	2									2	
Media & Information	3	3								2		1
Agricultural Extension	28	2	5	6	6	1	1	2	5	2	23	3
Rural Development	18	1	9	2	3				3	1	12	5
Seed Propagation	2	2								1	1	
Human Resources & Training	2	2									1	1
Administration	1	1										1
<b>TOTAL</b>	<b>57</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>8</b>	<b>6</b>	<b>40</b>	<b>11</b>

Source: Interview with TTEA by the JICA team.

Agricultural Extension Centers have agricultural extension officers and rural development officers, who provide extension services to farmers and women at field level. Other departments such as Horticulture Department<sup>5</sup> and Land Use Department<sup>6</sup> provide technical backup to the extension officers. At community level, extension volunteers are selected to support and facilitate the activities of extension officers (Figure 2.4.5).

## (2) Government Policy, Plan and Budget, Priorities and Strategies

### 1) National Agricultural Development Strategies

The “Executive Programme for Agricultural Revival, April 2008 (2008-2011)” presents a vision “A comprehensive national socio-economic development led by a dynamic agricultural sector capable of rapid and sustainable growth and biased towards the weak and vulnerable sectors of the population.” The mission is “to transform agriculture from a sector dominated by subsistence production to a modern sector responsive to market signals and with substantial contributions to poverty reduction, growth, foreign exchange earnings and sustainable management of natural resources.”

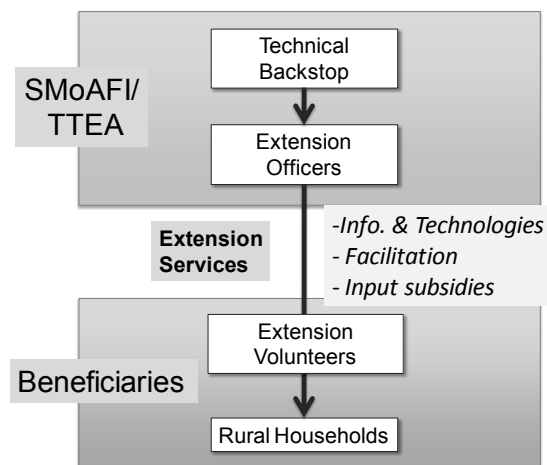
### 2) State Agricultural Development Strategies

The state agricultural development strategy aims at transforming subsistence-level agriculture to market-oriented one in line with the national strategy. Its priorities are a) supporting subsistence-level agriculture for food security, b) promoting profitable agriculture, and c) strengthening income-generating activities for vulnerable people.

The SMOAFI has the following five goals and strategies<sup>7</sup>.

- i. Growth through rural and development: Higher agricultural export, Increase productivity and food security, Improved agricultural income, reduced imbalance redressed
- ii. Poverty Reduction strategy: Support the livelihood strategies of Traditional Rainfed Zone.
- iii. Empower both farmers and women to fully participate in development process: Contribute to empower the rural poor to increase their food security, Increase capacity of producers, Increase access of poor rural people to agricultural services
- iv. Increase Access of poor rural women and men to market and microfinance
- v. Safe guard the environment

To achieve the goals, the plans aim at a) development of horticultural export products, b) improve Irrigation system control of pant pests and disease, c) maximize the yield and production of different



Source: JICA team.

**Figure 2.4.5: Agricultural Extension Services by SMOAFI**

<sup>5</sup> Horticulture Department consists of Service Section (5 officers), Production Section (18 officers), and Statistics and Research Section (2 officers). Production Section has 7 nurseries, i.e., Kassala West Nursery (6 officers), Kassala Eastern Nursery (4 officers), Ornamental Plant Nursery (3 officers), Girba Nursery (2 officers), Jaman Nursery (labor only), New Halfa Nursery (2 officers), and Saweel Nursery (1 officer), where they gathers farmers and provides technical training, including for home garden.

<sup>6</sup> Land Use Department includes Water harvesting Section dealing with earth embankment for Flood Irrigation Zone and terrace for the rainfed zones; Study Section undertaking the preparation of contour maps and baseline survey; and Capacity Building Section to facilitate those activities. They have offices in Kassala and New Halfa.

<sup>7</sup> Reported at the workshop on 15<sup>th</sup> of December 2010.

crops, d) reduce the costs of production, e) diversifying the product in the state, f) modernize agricultural sector, g) mechanization of cultural practices, h) Safe to the environment, i) mobilizing rural people with special emphasis on women, and j) best Utilization of Natural Resources (soil, water, forest).

### 3) Major Activities and Plans of TTEA

The activities and plans of Extension Section and Rural Development Section are delineated here as the most relevant entities of TTEA for this project. There are also other sections that provide backstopping or supplemental activities to them<sup>8</sup>.

#### Major Activities and Plans of Extension Section

The Extension Section of TTEA plays a pivotal role in agricultural extension services. They have an extension package consisting of 12 activities, which are introduced according to the situation of the fields. The extension package is shown in Table 2.4.5.

**Table 2.4.5: Extension Package**

Type	Extension Tools	Approach	Contents
Package	1. Farmers Field School	Theoretical	Providing farmers basic knowledge twice a week for three months in the off-season at the communities
	2. Short Training Course	Theoretical	Giving training the specific theme demanded
	3. Demonstration Farm	Practical	Demonstration Farm is field level trial at private farm.
	4. Field Days	Practical	The results of Demonstration Farm were shown to the other farmers at Field Days in growth and harvesting times.
	5. Formal meeting		Formal meeting discussing common challenges on agriculture. Providing video show at the formal meeting
	6. Rural Video Show		
On-Demand	7. Field Visit		Providing on-demand field visits to solve the problem at the fields
Ad-hoc	8. Workshop		Workshop on the specific theme
	9. Exhibition		Displays and sale of farm products at farm fair
	10. Pamphlet		Distribution of pamphlet
	11. Extension Campaign		Campaign to the farmers
	12. Exchange visit		Study tour of farmers to other areas

Source: Based on the interview with TTEA.

The annual plan of extension activities are for year 2011 shown in the table below.

**Table 2.4.6: Annual Plan of Extension Activities for 2011**

		Kassala	Rural Aroma	Telkuk	Hamshkorieb	New Halfa	Total
1	Farmers Field School (FFS)	18	5	5	3	15	46
2	Short training course	19	6	4	2	5	36
3	Demonstration Farm (DF)	35	15	5	3	35	93
4	Field Days (FD)	60	30	10	6	26	132
5	Field Visits (FV)	<b>Horti:</b> 480 (40/month x 12)	<b>Gash:</b> 120 (20/month x	Rain fed: 100 (20/month x 5 months)		1360 Jan-May:	

<sup>8</sup> For example, activities of the Mechanization Section are land preparation for improving productivity, terrace construction for small-scale farmers, training of agricultural machine, irrigation, farming tools and land preparation. Among these activities, land preparation and terrace construction are directly supporting farmers. Staff of this section are travelling across the state to provide land preparation and terracing during the year. They provide services at subsidized prices. The service fees are collected at the harvesting time. The rate of collection of fees varies from 90% in the good harvest year to 20% in the bad harvest year without rainfall. Currently, this section has only 5 tractors in good condition. They need to overhaul damaged tractors and purchase new tractors to expand service areas but cannot do so due to budget constraints.

		Kassala	Rural Aroma	Telkuk	Hamshkorieb	New Halfa	Total
		months)	6 months)			Irrigated June-Dec: Rain fed	
		Rainfed: 100 (20/month x 5 months)					
6	Public (Formal) Meeting	35	10	5	5	50	105
7	Rural Video Show (RVS)	40	20	15	15	15	105
8	Workshop	9				3	12
9	Exhibition	1	1			1	3
10	Pamphlet	1,500	900	150	200	1,100	3,850
11	Extension Campaign	10				4	14
12	Exchange visit	3				2	5

Source: From TTEA annual plan meeting held on 14<sup>th</sup> of December 2010.

The Farmers Field School (FFS) is one of the main activities. It provides basic knowledge to farmers groups, both in theory and practice, in the evening twice a week for three months during the off-season. On the other hand, demonstration farms and field days provide practical knowledge to farmers. Extension officers introduce new technologies and varieties to progressive farmers for demonstration purpose. The results of demonstration farms are extended to other farmers at growing and harvesting times.

### Major Activities and Plans of Rural Development Section

Major activities of the Rural Development Section are: a) income generation for rural women and youth, b) strengthening capacity of women for solving problems and prioritizing issues, and c) enhancing awareness on health and nutrition.

**Table 2.4.7: Annual Plan of Rural Development Activities for 2011**

Activities	Kassala Horticulture	Rural Aroma (Gash)	New Halfa	River Atbara	Rural Kassala	West Kassala	Girba	Telkuk	Hamshkorieb	Total Households
Home Gardens: vegetable & Fruits	1 site	1 site	1 site							500
Food Processing: Association and skill raising	100	100	100	100	50	50		0		500
Handicraft & Sowing: Association and skill raising	100	50	50	50	50	50	50			400
Microfinance management		100	50	50						200
Training of improved stove		100	50	50						200

Source: TTEA.

Components of activities are supporting income-generating activities such as home garden, food processing & nutrition, handicraft & sowing, microfinance management and training of improved stove though some activities have not been fully don. In addition, there are awareness raising activities such as first aid, literacy improvement, health and hygiene, education and agriculture. Tools include training courses, visits, women committee groups and lectures.

### **(3) Existing Projects and Programs (by government, donors and NGOs)**

The extension services by TTEA are supported by donors and NGOs. Major projects are ERDP by EC, the Sustainable Food Security and Poverty Reduction in Kassala States supported by Plan Sudan/UK and EC, and the Gash Sustainable Livelihoods Regeneration Project by IFAD.

## 1) ERDP (EU)

ERDP covers three states of Kassala, Gedaref, and Red Sea. Activities in Kassala State are supporting SMOAFI and extension activities of TTEA in Hamshkorieb, Telkuk, and Rural Kassala localities.

**Table 2.4.8: Activities of ERDP in Kassala State**

Component	Major Activities (Area)
<b>Increased agricultural production</b>	Land use survey/ contour maps (Rural Kassala (Shalaloup, Inkalkalat), Telkuk (Bashameed)), Water harvesting (Rural Kassala (Shalaloup)), Land preparation & seed to farmers (Rural Kassala (Shalaloup)), Construction of 3 extension centers, Farmers Fields Schools (Rural Aroma), Demo plots/ Field days/ workshop, Rehabilitation of 3 nursery wells(Horticultural Administration in Kassala), Production of fruit tree seedlings, Training on grafting fruit trees, Establish village nurseries, Establish gardens, Vegetable seed production, Training fruit production, Rehabilitation nurseries and production of seedlings (Central nursery (Kassala), Smaller community nurseries (Girba)), Planning river bank protection, Rehabilitation gum Arabic belt, Awareness raising, meetings, field visits
<b>Income Generating</b>	Training women in food processing and handicraft skill (Northern Delta, Rural Kassala, Hamshkorieb, Telkuk) Support women center with furniture tools and equipment, Construction of 1 women center
<b>Improving Animal Resources</b>	Vaccination, Built 1 slaughter house, Training pastoralists, Demarcation of animal routes, Reseeding of Grazing areas, Rehabilitation of heifers, Rangeland water harvesting, Training pastoralists

Source: Mott MacDonald, Eastern Recovery and Development Programme, Provision of Technical Assistance for the implementation and Management of the ERDP, Progress Report No. 2, January 2010 – June 2010

## 2) Sustainable Food Security and Poverty Reduction in Kassala State (Plan/EU)

Plan Sudan supports the activities of TTEA including FFS targeting 40 communities called “Plan Area.”

**Table 2.4.9: Plan Area**

River Atbara		Girba		Rural Aroma	
1	Arab village No 3	1	Arab village No 1	1	Umriaka
2	Arab village No 4	2	Arab village No 2	2	Makali
3	Arab village No 5	3	Dar Elnaeme	3	Wager
4	Arab village No 6	4	Dar Elsalam	4	Digain
5	Arab village No 7	5	26 Arab	5	Goazrajab
6	Arab village No 8	6	Khour Elaban	6	Gamam
7	E lshibaik	7	Saroba Kassala	7	Tendlai
8	Um Elgora	8	Sarabtawi	8	Mataib
9	Elginaid	9	Um Gamiss	9	Aroma
10	Elelawi	10	Undala	10	Tambay
		11	Koraj Elbahar	11	Hadalia
		12	Aradeep	12	Akla
		13	Elsharafa	13	Koleel
		14	El Giba	14	Adar Gawee
		15	El Gibai Elshamali	15	Togaly

Source: TTEA.

## 3) Gash Sustainable Livelihoods Regeneration Project (IFAD)

The overall goal of the project will be to regenerate the livelihoods of 67,000 poor households in and around the Gash Delta. The purpose of the project is to ensure the efficient, equitable and sustainable operation of the Gash Agricultural Scheme and the integration of the scheme into the local economy. The activities includes: i) flood irrigation infrastructure rehabilitation; ii) productivity improvement of crops and animal; ii) improving access of non-tenant households to productive assets; and iv) improving outreach of rural financial services to small tenants and non-tenant households and women.

#### 4) Microfinance and Agricultural Bank

A total of 19 commercial and specialized banks have branches in Kassala and Gedaref States<sup>9</sup>. The Agricultural Bank of Sudan (ABS) holds the largest share of the rural finance market<sup>10</sup>. Microfinance is active in the Aroma branch. The branch started microfinance in 2006 and has expanded lending to small farmers and women's groups. Total outstanding as of 30<sup>th</sup> of October 2010 was SDG 3.61 million; beneficiaries include 45 women's groups and 1,200 women and 405 farmers. ABS has cooperation with TTEA. The manager of the Aroma branch of ABS wants further collaboration with TTEA since ABS can provide financial training such as accounting.

#### 5) Agricultural Research Station in Kassala

The Agricultural Research Station has departments of horticulture, plant protection, mechanization, agronomy, genetic resources and irrigation. The station is under the umbrella of Agricultural Research Center under the Federal Ministry of Agriculture. The station has not a strong relation with SMOAFI. However, they have an annual meeting to discuss research topics in which SMOAFI's officials take part. The research topics discussed are proposed to the national coordinators of ARC who make a decision according to national criteria. Research topics of the Kassala Agricultural Research Station are centered in horticulture-related issues.

#### 6) JICA Capacity Building Project for the Implementation of the Executive Programme for the Agricultural Revival

This project aims to strengthen the capacities of the federal Ministry of Agriculture and Forestry and other stakeholders for implementing the Executive Programme for the Agricultural Revival. The team of the JICA experts in Kassala has prepared the action plan for agricultural and livestock development in Kassala, based on which the pilot activities of this project are formulated.

### (4) Current Situation and Problem Analysis

#### 1) Capacity Assessment

The capacity of TTEA and other department officers was assessed through participatory approach. The SMOAFI and the JICA team held a workshop in February 2011, inviting majority officers of TTEA and some of other departments<sup>11</sup>. Scoring assessment was done in three aspects, namely, i) core skill (i.e. management skill), ii) technical skill, and iii) enabling environment. Below are results of the analysis with some observations from outsiders (i.e., the JICA team). Before proceeding, one need to understand that there is limitation of this method, in that the majority of the participants were junior or under-section-head and the viewpoints of the management may be hardly reflected in the results.

#### Assessment of Core Skill (Management Skill)

As regards core skill, the highest score is given to reporting skill, but even this may not be at sufficient level, given the comments from participants and performance of daily business. Planning/implementation skills require capacities for formulating a medium-term plan. In other skills, the needs for analysis and writing using computers were well pointed out by the participants. It is observed that many officers have knowledge and information but they are not organized and managed at institutional level.

<sup>9</sup> Central Bank of Sudan, UNDP and UNHCR, Microfinance Consultancy to Eastern Sudan, August – October 2009.

<sup>10</sup> Agricultural Bank has 4 branches in Kassala State, those are, Kassala, New Halfa, Rural Aroma, and Wad El Helew. Among them, New Halfa branch has the longest history and the largest outstanding.

<sup>11</sup> The participants include 43 from TTEA, 8 from Horticulture, 3 from Land Use and 1 from Plant Protection Departments.

**Table 2.4.10: Assessment Results of Core Skill**

No.	Element	Score (1 to 5)	Major / Interesting Comments
A-1	Planning / Implementation Skill	1.9	There is an annual plan but it is not implemented according to the plan due to budget shortage.
A-2	Data Collection Skill	2.2	There is no equipment and facilities to go to fields. Some data are collected but there is a limited skill of analysis using computers and writing reports.
A-3	Data/Knowledge Management Skill	1.8	There are a few computers. Also there is no training on computer skills. No data save and no file.
A-4	Reporting Skill	2.6	There is a little experience of writing reports. Also there is no format for reporting.
A-5	Communication/Coordination Skill	2.1	There is concentration/monopoly of the work on specific section and people (2 comments). Coordination is made only at director level (1).
A-6	Staff Motivation	1.6	Salary does not cover necessities with little appreciation of work.

Note: Scoring criteria 1: very weak with priority, 2: weak, 3: having basic skill, 4: strong, 5 very strong

The number in the parentheses in the column of Major/Interesting Comments indicates the number of responses on interesting comments.

The comments without this indication are major comments, which were provided by more than 3 participants.

Source: JICA team based on the questionnaires

### Assessment of Technical Skill

As regards technical skill, agronomy skill gains the highest score, while relatively lower scores were given to the economic and marketing aspects. As indicated by the questionnaire, it is considered that there has been no or little training on post-harvesting, marketing and economics. In terms of rural development, the lack of funds and need for more advanced training were pointed out.

**Table 2.4.11: Assessment Results of Technical Skill**

No.	Element	Score (1 to 5)	Major / Interesting Comments
B-1	Engineering Skill	1.9	There is no training course, but only the effort of staff. There is no new machine. / Machines are there but they need rehabilitation (1).
B-2	Agronomy Skill	2.4	Inputs such as seeds are needed (2). Training on prevention of mesquite invention are required (2). There is lack of harvesting skills (1).
B-3	Post-harvesting/ Processing Skill	1.9	Need more training. There is no plan for marketing. There is no follow-up after harvesting. The methods and material (e.g. storage) are local and traditional, requiring update.
B-4	Marketing Skill	1.7	Need more training. There is weakness of collective actions and cooperation (2). No communication is made with the unions (1) There is no clear policy for marketing (1).
B-5	Agricultural Economics Skill	1.6	No training on this subject. There is no feasibility study.
B-6	Rural Development/ Livelihood Skill	2.1	Not enough support. Need more skill training. There is a need to make a follow-up after training (1).

Note: Scoring criteria 1: very weak with priority, 2: weak, 3: having basic skill, 4: strong, 5 very strong

The number in the parentheses in the column of Major/Interesting Comments indicates the number of responses on interesting comments.

The comments without this indication are major comments, which were provided by more than 3 participants.

Source: JICA team based on the questionnaires

### Assessment of Enabling Environment

With respect to enabling environment, a low level of satisfaction can be seen in budget availability and disbursement, office facilities and means of transportation. As for the budget, the significant problem is

the delay of disbursement, which negatively affects the budget execution<sup>12</sup> and thus the seasonal activities of agriculture. Regarding office facilities, there is a substantial need for access to the Internet. Many documents are hand-written and the use of email for communication is very limited.

**Table 2.4.12: Assessment Results of Enabling Environment**

No.	Element	Score (1 to 5)	Major / Interesting Comments
C-1	Stability of Government Policy	2.4	There is no clear government policy. There is tribe connection. Agriculture does not receive priority.
C-2	Budget Availability /Disbursement	1.6	The budget is not sufficient with late disbursement.
C-3	Infrastructures	2.0	Road and electricity are not well established. Blackout in rainy season affect production (2)
C-4	Office Facilities	1.4	There are needs for computer and internet access. Furniture is also needed.
C-5	Transport Facilities	1.5	There is no means of transportation and procuring fuel.

Note: Scoring criteria 1: very weak with priority, 2: weak, 3: having basic skill, 4: strong, 5 very strong

The number in the parentheses in the column of Major/Interesting Comments indicates the number of responses on interesting comments.

The comments without this indication are major comments, which were provided by more than 3 participants.

Source: JICA team based on the questionnaires

### Measures for Capacity Building

The results of the capacity assessment were discussed with the Director General and other managerial counterparts. The discussion revealed that some of comments could stem from the limited understanding of junior officers on the system and management<sup>13</sup>. While they should better understand their institution and systems, it was also pointed out by some managers that the management needs to facilitate information sharing, including feedback to the subordinates.

Then possible measures for capacity building were discussed. Among the core skill, it is necessary to strengthen planning skills and promote the preparation of a medium-term plan beyond the annual plan. Of equal or more significance is to provide training on computer skills for data management, analysis and document preparation so that information individually possessed could be utilized effectively for the entire Ministry. For the technical skill, an attempt will be made to introduce marketing and economic skills in addition to crop production techniques. For enabling environment, the project will provide computers and some transport means so as to enhance the efficiency of work.

## **2) Problem Analysis**

### Issues in Agricultural Extension

At present, extension officers are engaged in various services for communities, as far as they are accessible. They may have knowledge and experiences through their works, but there is no mechanism to share such expertise with other officers. This issue can be applied not only to extension officer but also to the relation among different departments within SMOAFI. Given the capacity of SMOAFI (manpower, facilities and budgets), it would be difficult to cover the whole area in the state. It is then of great importance to establish a mechanism to expand knowledge and information by formulating model activities and materials. In addition, the monitoring and evaluation and follow-ups are also required after the implementation of activities. Based on this analysis, the following issues are identified for the development of extension services in Kassala.

- Making a linkage with expertise among officers, departments and institutions
- Establish model extension activities and formulate extension materials

<sup>12</sup> Up to the 3rd quarter of 2010, the execution rate was 11%.

<sup>13</sup> For example, there were comments that SMOAFI had no system to collect prices; yet there is a system not functioning well.



- Conduct extension services with clear objectives
- Making a follow-up (e.g. monitoring and evaluation) after training and demo plots
- Formulating a rolling-out plan by direct counterparts in this project

Issues in Rural Development (Livelihood Development)

In the aspect of rural development (livelihood development), there is the standard package of training, including handicraft, cloth making and food processing. But it seems that many communities do similar things in similar ways. More than other extensions, rural development should be hand-made with communities. The training and extension package could be enriched more with the diversification of topics, the value-addition of activities, and a sense of business. In many cases, trainers are extension officers with little involvement of expertise outside. Connecting to the external resources could be considered as a role of the extension workers who cannot deal with all issues in all areas. Machinery and inputs are provided by TTEA for the implementation of training. However, due consideration has not been paid to “after training.” Financial mechanisms (e.g., user fees or revolving funds) will be needed to sustain the activities. The issues to be tackled by pilot projects can be summarized as follows.

- Diversification of training packages (e.g., environmental consideration and solar energy)
- Inclusion of business skills (profit calculation, value addition and cost saving)
- Introduction/development of support to financial mechanism (e.g., revolving funds, users fee, “*sunduk* (common fund),” and training on how to write a financial proposal)
- Utilization of external resources (e.g., KVTC and SMoH) for advanced training but consultancy for communities

**2.4.2 Plan for the Implementation Phase**

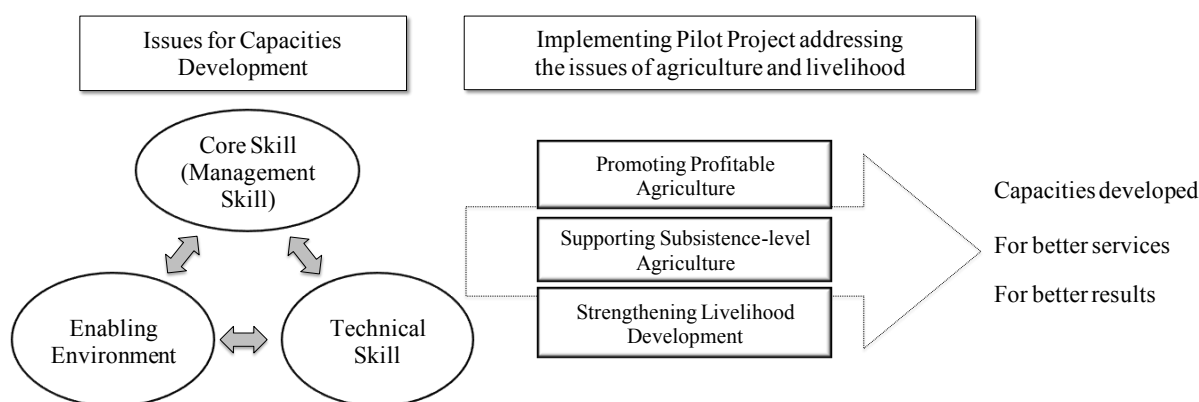
**(1) Basic Policy**

**1) Overall Strategies**

The followings are the issues for capacity development of TTEA/SMoAFI.

- Strengthening core skill (management skill) of TTEA/SMoAFI
- Strengthening technical skill of TTEA/SMoAFI
- Supplementing enabling environment

To address these issues, capacity development through implementing pilot projects, that is, “*learning-by-doing*” approach is proposed.



**Figure 2.4.6 Capacity Development through Implementing Pilot Projects**

## 2) Prioritized Area (Target Agricultural Zone) for Pilot Projects

Based on the action plan prepared by the Capacity Building Project for the Implementation of the Executive Programme for the Agricultural Revival<sup>14</sup> and the discussion with SMOAFI and JICA Sudan Office<sup>15</sup>, the following agricultural zones have been selected as priority areas.

**Table 2.4.13: Prioritized Agricultural Zones**

Prioritized Zone/ Locality	Rationales for Selection	Approach to Development
Pump Irrigated Zone (Horticulture) / Kassala City and Rural Kassala	Kassala has been producing horticultural products. There are production techniques and systems with historical experiences, which could be developed for more profitable agricultures (e.g. improvement of production techniques of onions and tomatoes and promotion of cash crops such as bananas). With the absence of other donors supporting this zone, a pilot project is required to assist SMOAFI in making agriculture in this zone more marketable and exportable.	Promoting profitable agriculture/ Strengthening livelihood development
Flood Irrigated Zone / Rural Aroma (Gash River areas)	With interventions supported by IFAD, irrigation canals are rehabilitated. Communities have been made able to produce sorghum. Given the agricultural potential of the Gash areas, more efforts should be made for diversification of crops. Currently SMOAFI has a plan to introduce cotton. A pilot project will support this process by identifying the roles of extension officers for crop diversification, which includes cottons and/or other cash crops.	Promoting profitable agriculture / Strengthening livelihood development
Traditional Rainfed Zone /Rural Aroma (the eastern side of the Atbara River)	Majority of vulnerable people are engaged in traditional rainfed sector. There are limited source of incomes depending on sorghum production. The SMOAFI is to establish extension centers and provide services. A pilot project is needed to make the model of interventions in this area, including water harvesting techniques.	Supporting Subsistence-level Agriculture/ Strengthening livelihood development
Mechanized Rainfed Zone /Wad El Helew	Behind the presence of large-scale farmers, small-scale farmers tend to fail timely farming due to difficulty in renting tractors. Not many agricultural interventions have been made so far in this zone. And there is no system for government extension. The SMOAFI is to establish extension centers and provide services. Pilot projects are needed to make the model of interventions in this area. There are several refugee camps receiving international supports. Assistance to host communities is required for regional peace and sustainable development.	Supporting Subsistence-level Agriculture/ Strengthening livelihood development

Source: Elaborated by the JICA team based on the material prepared by the JICA Sudan Office as shown in Annex Agri-1.

## (2) Plan for the Implementation Phase

### 1) Project Design Matrix (PDM)

In line with the basic policy of taking the “learning-by-doing” approach, the following framework for the implementation phase was proposed and approved.

<sup>14</sup> This project prepared the first draft list of action plans to address issues in all agricultural zones in Kassala which includes 108 projects. It has then finalized the list containing 17 action plans through prioritization and grouping.

<sup>15</sup> On 4th January 2011, the SMOAFI and JICA Sudan Office held discussion to identify the four prioritized zone based on the 17 action plans prepared by the Capacity Building Project for the Implementation of the Executive Programme for the Agricultural Revival (See Annex Agri-1).

**Table 2.4.14: Project Design Matrix (PDM) for the Agriculture and Livelihood Cluster**

Output and Activities	Objectively Verifiable Indicators	Means of Verification
<i>Output 3: Kassala State Government's capacity to provide service for Agriculture and Livelihood is strengthened.</i>	3.1 No. of agricultural extension workers who recognized improvement of their extension skills (Target: 60% of TTEA).	3.1 Baseline/ End-line Survey (Questionnaires in Capacity Assessment Workshops)
3.1 Improve agricultural extension services	3.2 No. of agricultural extension workers who recognized improvement of quality of trainings (Target: 60% of extension workers who participate in training provided by the project).	3.2 Baseline/ End-line Survey (as part of Training Evaluation Report)
3.1.1 Formulate a 5-year action plan for extension service improvement, in which Technology Transfer and Extension Administration (TTEA) staff themselves will set the target indicators for their service improvement.	3.3 No of extension materials which are made, revised, and distributed by agricultural extension workers (Target: 20 kinds).	3.3 TTEA records (Material Registration Records)
3.1.2 Strengthen the linkages between extension services and other departments' activities (e.g., planning, land use, horticulture development and plant protection)	3.4 No. of farmers newly introduced planting & post-harvesting techniques by agricultural extension workers (Target: 790 farmers)	3.4 Project records (Monitoring Records)
3.1.3 Conduct core skill training (e.g., computer operation, record keeping and reporting)	3.5 No. of women newly introduced livelihood improvement activities/techniques by agricultural extension workers (Target: 150 women)	3.5 Project records (Monitoring Records)
3.1.4 Conduct technical training for agricultural extension officers (e.g., extension methods, water-harvesting, horticulture, agro-processing, marketing, etc.) in the pilot areas.		
3.1.5 Monitor the pilot activities in 3.2, share the experiences within TTEA and with other departments and feedback them into the action plan formulated in 3.1.1.		
3.2 Apply improved techniques to pilot areas for productivity and profitability enhancement		
3.2.1 Conduct field experiments on cultivation techniques (e.g., water-saving irrigation, water harvesting, contour farming, horticultural techniques, etc.) in the pilot areas.		
3.2.2 Carry out field extension activities (e.g., Farmers Field School (FFS) and demonstration farms) selected in the preparation phase.		
3.2.3 Introduce improved agro-processing techniques (e.g., grading and packaging of fresh fruits for export) on a trial basis in the pilot areas.		
3.2.4 Introduce livelihood activities (e.g., handicraft, poultry and pottery) in the pilot areas.		
	<b>Inputs</b>	<b>Important Assumptions</b>
	<b>Sudanese side:</b> 1. Counterpart personnel assignment 2. Necessary facilities and equipment 3. Local costs  <b>Japanese side:</b> 1. Experts 2. Equipment 3. Part of operation costs	Extension workers are assigned to the pilot sites. Markets for horticulture and other crops do not shrink. Severe drought and pest and diseases are not prevailing. Role and policies on TTEA are not changed.

Source: PDM attached in M/M signed on 13 March 2011.

## 2) Plan for Pilot Projects

The following are the outlines of the proposed pilot projects.

**Table 2.4.15: Plan for Pilot Activities in the Agriculture and Livelihood Cluster**

Project Name	Development of Horticultural Extension towards Profitable Agriculture
Objective	To improve extension packages to exploit the potential of horticulture for profitable agriculture (including post-harvest techniques).
Target Area	Pump Irrigated (Horticultural) Zone (Kassala City and Rural Kassala Locality)

Outputs	An extension package for profitable agriculture is developed. Awareness of farmers on post-harvest handling is raised. Coordination with related departments, such as horticulture, land use and desertification control, planning and plant protection, is improved. The capacity of TTEA extension officers to develop and implement an extension package (including post-harvest techniques) is improved.
Schedule	To start in the first year of the implementation phase, starting to establish from two to four sites.
Activities	1. Confirm target sites and conduct a supplementary survey to collect baseline data. 2. Improve the extension package for profitable agriculture in collaboration with technical administrations of SMOAFI. 3. Conduct training of extension officers on both aspects of techniques and core skill. 4. Implement model extension activities (OJT) for the targeted farmers. 5. Conduct stakeholder workshop with wholesalers and other business entities 6. Monitor and evaluate the activities and results. 7. Revise extension package for profitable agriculture.
Budget	SDG 261,559 (excluding equipment)

<b>Project Name</b>	<b>Revival of Cash Crop Production in Gash</b>
Objective	To improve extension package to increase income in flood irrigated area.
Target Area	Flood Irrigated Zone (Rural Aroma)
Outputs	Extension package in flood-irrigated zone is developed. The capacity of TTEA extension officers to deliver extension services in flood-irrigated zones is improved.
Schedule	1 <sup>st</sup> Year: to assist SMOAFI in introducing cash crops including cottons through market studies and on-demand support <sup>16</sup> . 2 <sup>nd</sup> Year: to fully start activities based on the first year experience
Activities	1. Select target areas and conduct supplementary survey for the baseline. 2. Analyze the profitability of existing practice in the target areas to identify the constraints and potential methods for improving extension package to increase profitability. These methods could be diversifying cropping patterns and new cash crops, i.e., cotton, sunflower and/or introducing improved techniques for sorghum. 3. Improve extension package in collaboration with technical departments of SMOAFI 4. Conduct training of extension officers. 5. Implement extension activities for the targeted farmers. 6. Monitor and evaluate the activities and results. 7. Revise the extension package in flood irrigation areas.
Budget	SDG 136,970 (excluding equipment)

<b>Project Name</b>	<b>Promotion of Water Harvesting Technology</b>
Objective	To improve water harvesting techniques.
Target Area	Traditional Rainfed Zone (Rural Aroma: Eastern side of the Atbara River)
Outputs	Extension package for water harvesting is developed. The capacity of TTEA officers to deliver extension services on water harvesting is improved.
Schedule	To start in the second year of the implementation phase
Activities	1. Select target areas and conduct supplementary survey for the baseline. 2. Selecting optimum techniques for water harvesting. 3. Implement extension services on water harvesting. 4. Monitor and evaluate the activities and results. 5. Revise extension package for water harvesting activities.
Budget	SDG 60,420 (excluding equipment)

<b>Project Name</b>	<b>Introduction of Mechanized Agriculture with Small-scale Farmers</b>
Objective	To introduce mechanized agriculture and to improve water harvesting techniques
Target Area	Mechanized rain-fed area (Wad El Helew)
Outputs	Crop production by mechanized agriculture is improved.

<sup>16</sup> For the Gash area where new cash crops are to be introduced, the first step is to conduct marketing studies and then provide technical support on production and harvesting.

	Extension package for mechanized agriculture and water harvesting is developed. The capacity of TTEA extension officers to deliver extension services on mechanized agriculture and water harvesting is improved.
Schedule	To start in the first year of the implementation phase
Activities	1. Conduct supplementary survey for the baseline. 2. Introduce machinery and to form farmer's group. 3. Conduct training to the extension officers and farmers on the use/maintenance of a tractor 4. Selecting optimum techniques for machineries and water harvesting. 5. Implement extension services on machineries and water harvesting. 6. Monitor and evaluate the activities and results. 7. Revise the extension package for machinery agriculture and water harvesting.
Budget	SDG 167,080 (excluding equipment)

<b>Project Name</b>	<b>Livelihood Development with Community Initiatives</b>
Objective	To develop rural development package according to communities with sustainable mechanism
Target Area	Areas with Pilot Projects above.
Outputs	Rural development package is improved. The capacity of rural development extension officers to deliver services is improved. Income or life standard of targeted household is increased.
Schedule	1 <sup>st</sup> Year: 2 sites in Mechanized Rainfed Zone and 1 site in Pump Irrigated (Horticulture) Zone 2 <sup>nd</sup> Year: 2 sites in Flood Irrigated Zone and 1 site in Traditional Rainfed Zone
Activities	1. Review and updating extension materials 2. TOT or study visit in collaboration with external expertise (e.g. participatory planning, the use of electronic sewing machines, advanced processing of food processing) 3. Provide training on monitoring and evaluation 4. Conduct participatory planning / Needs assessment 5. Carry out feasibility study and financial mechanism setting (e.g. setting user fees) 6. Carry out supplement Survey (Beneficiaries Specific Baseline Survey) 7. Procurement of necessary equipment and machines 8. Awareness Raising on women activities and health 9. Conduct environment assessment 10. Conduct community initiative activities e.g. cloth making and food processing 11. Revise extension packages for rural development
Budget	SDG 227,780 (excluding equipment)

### (3) Planned Inputs

#### 1) Experts

For effective and efficient implementation of the project, the JICA team proposes the dispatch of the following experts (See Annex 3.1 for the assignment schedule). Relatively long-term assignments are allocated to the three experts, namely the agricultural production, agricultural marketing, and rural development / farmers organization. Short-term experts include the mechanized agriculture, water harvesting, and cooperatives.

- a) Agricultural Production: to provide technical support on the production of crop, vegetables and fruits for pilot projects (including procurement); and to assist counterparts in conducting training, extension, monitoring and evaluation (including the implementation of core skill training and collaboration with stakeholders)
- b) Agricultural Marketing: to provide technical support on marketing (e.g. feasibility studies and stakeholder workshop) especially for Development of Horticultural Extension towards Profitable Agriculture and Revival of Cash Crop Production in Gash; and to assist counterparts in conducting training, extension, monitoring and evaluation (including the implementation of core skill training and collaboration with stakeholders)
- c) Rural Development / Farmers Organization: to provide technical support for Livelihood Development

with Community Initiatives; to assist counterparts in conducting training, extension, monitoring and evaluation (including the implementation of core skill training and collaboration with stakeholders); and to assist the expert of Mechanized Agriculture in forming the groups of small-scale farmers

- d) Mechanized Agriculture: to provide technical supports on machinery for Promotion of Water Harvesting Technology and Introduction of Mechanized Agriculture with Small-scale Farmers and on group formation with guidance on how to do operation and maintenance it; and to assist counterparts in conducting monitoring
- e) Water Harvesting: to provide technical support on water harvesting for Promotion of Water Harvesting Technology and Introduction of Mechanized Agriculture with Small-scale Farmers
- f) Cooperatives: to provide technical support on cooperatives especially for Revival of Cash Crop Production in Gash

## 2) Training in Japan and Other Countries

To enhance the effectiveness of the project, the following training is proposed (See Annex 3.2 also).

- c) Short-Term Training in Japan (1<sup>st</sup> Year: Agricultural Policies and Extension System)
  - Participants: Management of TTEA/SMoAFI (5 persons)
  - Timing: August to September 2011
  - Time Span: Around 2 weeks
  - Justification: It is of great significance for the management officers of the SMoAFI to learn policies and system in Japan that aim to increase food security and promote export. Of equal importance is to know the mechanism of extension system both public and private in rural areas in Japan, which gives clues to enhance the extension system in Kassala.
- d) Short-Term Training in Japan (2<sup>nd</sup> Year: Agriculture with focus on Horticulture)
  - Participants: TTEA extension officers (5 persons)
  - Timing: August to September 2012
  - Time Span: Around 2 weeks
  - Justification: It is crucial for TTEA officials to lean the latest techniques for agricultural production with particular focus on horticulture. This may deepen and widen their expertise, including vision for a long term.
- e) Short-Term Training in Syria (3<sup>rd</sup> Year: Water Harvesting and Horticulture)
  - Participants: TTEA extension officers (5 persons)
  - Timing: August to September 2013
  - Time Span: Around 2 weeks
  - Justification: In Syria where the environment is similar to Kassala, it is very important to gain the knowledge of water harvesting and its application. The country is also good at horticultural production in open filed. The techniques on it are also worth learning.

In addition to the above, a long-term training course on vegetable production in JICA Tsukuba International Center will also be considered, though the application is on a competitive basis.

## 3) Equipment

The list of equipment necessary for the project implementation is available in Annex 3.3.2. The equipment includes i) office facilities to enhance core skill of TTEA; ii) transportation means for creating enabling environment; and iii) technical machineries for both agriculture and livelihood activities. The equipment for livelihood activities is tentative and will be finalized through dialogues with communities in pilot sites and feasibility studies. In general, procurement needs some time to be completed; hence it is

necessary to start procedures during the early stage of the implementation phase (May-July 2011), at least for pilot activities in the 1<sup>st</sup> year. For a quick start of the pilot activities in the implementation phase, the following equipment was procured (For a detailed list, see Annex 3.3.1).

**Table 2.4.16: Equipment Procured in the Agriculture and Livelihood Cluster**

Equipment	Sub-sectors	Outlines
Tractors	Agriculture	The sets of tractors for the pilot communities in Wad El Helew. Tractors, Pneumatic Planters, Rodgers, Chisel Ploughs, and Sprayer Booms
Generators	Agriculture and Livelihood	Generators for backstopping extension offices in Wad El Helew and the eastern side of the Atbara river. Generators with portable setting (3-5 KVA)

#### 4) Budget (Japanese Side)

In order to implement the project with the inputs mentioned above, the Japanese side is to prepare the budget of around 286 million JPY (See Annex 3.5). The most of the budget is to be allocated to the assignment of the experts, which is equivalent to 68 person-months. This is a minimum requirement, however, to ensure the smooth implement of 5 pilot projects over the state.

#### 5) Budget (Sudanese Side)

The budget plan at the Sudanese side (i.e. local component) includes the allowance for counterparts and fuels and operation and maintenance cost of transportation means. The amount required is identified as approximately 535,000 SDG (See Annex 3.6)

### 2.4.3 Preparatory Work for the Implementation Phase

Preparatory work for the implementation phase includes i) detailed designs of umbrella activities for TTEA/SMoAFI, ii) pilot site selection, iii) detail designs of the pilot projects, iv) some project/pilot activities implemented, and v) technology transfer to the counterparts.

#### (1) Detailed Designs of Umbrella Activities for TTEA/ SMoAFI

The counterparts and JICA team prepared the plans for activities relating to TTEA/SMoAFI, which includes i) the formulation of a 5-year plan with the reflection of reviews; ii) core skill training; and iii) institutional setting-up for extension<sup>17</sup>.

#### 1) Formulation of a 5-year Plan with the Reflection of Reviews

At present, SMoAFI is to formulate a 5-year plan, targeting the period from 2012 to 2016. The Project will facilitate the formulation process with particular reference to agricultural and rural development extension. The following is the tentative schedule for the task.

<sup>17</sup> Activities in PDM relating to TTEA/SMoAFI include i) the formulation of a 5-year action plan, ii) collaboration with other departments, iii) core skill training, iv) technical training to extension officers, and v) monitoring of the pilot projects and feedback to action plan. Among them, activities of ii), iv) and part of v) will be undertaken through pilot projects.

**Table 2.4.17: Schedule of 5-year Plan Formulation and Review**

Activities	Methods	Responsible CP	Timing
<b>Review of Current Extension</b> Confirmation of Federal/State Agriculture Policy Identification of Issues in extension by Zone or area Mapping of Extension Coverage Mapping of Technologies applied to the area	Workshop	Task Team	May 2011
<b>Blueprint of Long-term and Mid-term Extension</b> Future of Extension and sharing it among officers Setting Targets for 5 years (prioritized area, activities and households to be covered)	Workshop	Task Team	May 2011
<b>Action Plan Formulation (Draft)</b> Implementation Schedule with responsible entities Selecting SMART Targets	Discussion and Desk Work	Task Team	June 2011
<b>Stakeholder Meeting</b> (Other Departments NGO, etc.)	Meeting	Director General	July 2011
<b>Finalization of Action Plan</b>	Meeting	Director General	July 2011
<b>Review of Action Plan (e.g. on technologies to be applied )</b>	Workshop	Director General	July 2012 July 2013

Note: Task team includes the directors of TTEA and other departments with assistants for formulating a 5-year plan for agriculture as a whole.

## 2) Plan for Core Capacity Training

Core capacity training deals with issues relating to the implementation of the Project. It will not only provide basic training, e.g., computer skills, but also create opportunities for the counterparts who work closely with the JICA team to share with other officers what they learn. To promote mutual learning, an attempt is to be made to utilize as much available human resources in SMOAFI as possible. The Project will offer the following training on a quarterly basis.

**Table 2.4.18: Training Plan for Core Capacity**

Subject	Contents	Trainers
Basic Computer Skill	Word document preparation Excel calculation	Officer who can use PC, Expert
Reporting System	Confirmation of Ministerial reporting system	Director General, Expert
Direct Beneficiary Baseline Survey	Survey methods Analysis with a computer	Direct Counterpart*, Expert
Data Management	Confirmation of basic files for offices Record keeping place	TTEA Director, Expert
Monitoring	Importance of monitoring Introduction of draft monitoring format	Direct Counterpart, Expert
Monitoring	Data analysis with a computer Writing/keeping data with a computer	Direct Counterpart, Expert
Planning	Needs assessment and justification Budgeting	Direct Counterpart, Expert
Planning	Implementation Schedule	Direct Counterpart, Expert
TTEA Section Report	Confirmation of the contents of TTEA section report and required information	TTEA Director, Expert
TTEA and Ministerial Annual Report	Understanding of higher level reports Feedback mechanism	Director General, Expert

Note: \* Direct counterparts are referred to as extension officers who work together with JICA experts to provide extension services to communities in pilot sites.

## 3) Plan for Extension Institutional Arrangements

In order for the JICA team to work with counterparts in pilot sites, it is prerequisite to make institutional arrangements for the provision of extension services on the government side. The JICA team through



discussions with the counterparts has prepared the following plan for institutional setting-up.

**Table 2.4.19: Plan for Extension System Establishment**

Locality/ Area	Office Establishment	Officers (to be) dispatched	Equipment Required	Budget	Comple te Date	Remark
<b>Wad El Helew</b>						
Wad El Helew	A building will be constructed by the end of July 2011.	Agri: 1 Selected Rural Dev: 2 to be selected by April	PC: 2 Generator: 2 Car: 2	Equipment: To be supported by the Project Personnel: SMoAFI	Aug 2011	Little service made so far regardless of importance of the area. Priority is put on Wad El Helew for smooth starting with JICA support.
Hamdait	A building will be constructed by the end of July.	Agri: 1 Rural Dev: 1 Both to be selected by August	PC: 2 Generator: 2 Motorbike: 1	SMoAFI	Aug 2011	
<b>Rural Aroma</b>						
Eastern Side of Atbara (Saweel)	A building was completed.	Agri: 1 selected Rural Dev: 1 to be selected by April	PC: 2 Generator: 1 Motorbike: 1 Car: 1	Equipment To be supported by the Project Personnel: SMoAFI	Oct 2011	Little service made so far: people are heavily depended on sorghum. The project provides support to Saweel to make the center function.
Eastern Side of Atbara (Northern Part)	Site is to be selected.	Agri: 1 Rural Dev: 1 Both to be selected by December	PC: 1 Generator: 1 Motorbike: 1	SMoAFI	Dec 2011	
<b>Telkuk</b>						
Twaiet	Construction has started and will be completed by early July	Agri: 1 selected Rural Dev: 1 to be selected by early July	PC: 1 Generator: 1 Motorbike: 1	SMoAFI	July 2011	The center is established to provide more services in Telkuk, affected by conflict. Other agencies support this locality e.g. ERDP
Others: There is plan for SMoAFI to recruit 10-15 new staff members for 2012 with emphasis on agricultural mechanization and rural development. This plan will be incorporated in a 5-year plan.						

## (2) Pilot Site Selection

Pilot sites are selected from the four prioritized agricultural zones, i.e. i) Pump Irrigated (Horticulture) Zone, ii) Flood Irrigated Zone, iii) Traditional Rainfed Zone (the eastern side of the Atbara River), and iv) Mechanized Rainfed Zone.

### 1) Site Selection from Pump Irrigated (Horticultural) Zone

In the Pump Irrigated (Horticulture) Zone, communities exist closely around Kassala Town. There are regional extension offices, covering north, south, east and west areas. Regarding the agricultural pilot project, interventions tend to be various, small-scale and short-term, dealing with several types of vegetables and fruits. With these conditions in mind, it is decided, through discussions with the counterpart, to scatter pilot activities to cover all extension areas with prioritization. In terms of livelihood development, the approach is to establish the core center for production and mobile training in order to enhance the existing activities of communities and the regional centers. Table 2.4.21 summarizes the features of each extension area with indications of the prioritized order for agricultural interventions and

of selection for the livelihood project.

**Table 2.4.20: Site Selection in the Pump Irrigated (Horticulture) Zone**

Extension Area/Centers	Features	Prioritized for Agri. or Selected for livelihood
North Sawagi	Easily accessed from the center of the city. The inhabitants are local people. Farming areas are near to the market.	Agri: From 1 <sup>st</sup> Year
South Sawagi and El Sabeel	Easily accessed from the center of the town. The inhabitants are local people. The farming areas has good environment for fruit production e.g. bananas and limes with quality water.	Agri: From 1 <sup>st</sup> Year Livelihood : From 1 <sup>st</sup> Year
East Takruf	Northeast from the center of Kassala city. Farmers are not many.	Agri: From 2 <sup>nd</sup> Year
Wad El Sherifi	A relatively far from the center of Kassala city The inhabitants are local people, refugees and IDPs. The area receive supports from several institutions e.g. UNHCR for refugees, Practical Action for non-refugees.	Agri: From 2 <sup>nd</sup> Year

## 2) Site Selection from Flood Irrigated Zone

The Flood Irrigated Zone is associated with the Gash flood irrigation scheme, which can be divided into six blocks (Kassala, Makali, Degain, Tendlay, Matatib and Hdaliya). In each block, there are several WUAs (13 – 24 WUAs) engaged in sorghum production. SMOAFI is attempting to introduce cotton to the zone through contract with Sudan Cotton Co. LTD. Taking into account the current situation, the Project will select WUAs that have expressed an interest in introducing cotton into their lands.

**Table 2.4.21: Possible Sites (WUAs) in the Flood Irrigated Zone**

Block	Promising WUAs	Remark
Kassala	WUAs No. 4, 6 and 7	Farmers live in Awadat. Easy to access
Tendlay	WUA No.18	Farmers live in Tendlay, Relatively far from Kassala city, Good leadership

## 3) Site Selection from Traditional Rainfed and Mechanized Rainfed Zones

For the Traditional Rainfed and Mechanized Rainfed Zones, selection criteria were developed based on the principle thinking that the pilot projects should be a model for others, have policy implications for assisting small-scale farmers and possess potentials of quick wins.

**Table 2.4.22: Selection Criteria for Traditional Rainfed and Mechanized Rainfed Zones**

Target Agricultural Zone	Basic Condition	Conditions for Policy	Conditions for Quick Win
Traditional Rainfed Zone (the eastern side of the Atbara River)	Easy to access Not isolated from neighboring villages	Having many small scale farmers for subsistence-level agriculture	Active farmers interested in new techniques
Mechanized Rainfed Zone	No other services/projects covering No conflict	Having many small-scale farmers for subsistence-level agriculture, with consideration to the relation with refugees	Good governance

Based on the criteria above, TTEA and related officers together with the JICA team selected possible sites and conducted field investigations in each possible site. After this, TTEA and the JICA team had a participatory discussion session in order to select pilot sites. Table 2.4.23 shows a summary of field findings in each possible site and the results of selection with justifications for them.

**Table 2.4.23: Selection of Pilot Sites in Traditional Rainfed and Mechanized Rainfed Zones**

Agri. Zone/ Possible Site	Summary of Field Findings	Justification for selection or prioritization
<b>Traditional Rainfed Area (Eastern side of the Atbara River)</b>		
El Zinary (212 HH)*	Relatively far from the main road. There are several ethnic groups who have conflicts on the use of terrace land. Some farmers have horticultural lands in the Atbara riverside. (No meeting with women)	<b>Um Yoy or El Sasrab is tentatively selected</b> because: 1) It is relatively near to the main road; and 2) There is no conflict or less risk of conflict among the community.
El Sasrab (184 HH)*	Relatively near to the main road. 3 villages recently merged into one entity of El Sasrab. Houses are scattered. Some farmers have horticultural lands in the Atbara riverside. Women are in closed environment and have no activities other than housekeeping.	
Um Yoy (33 HH)*	Relatively near to the main road. Farmers show strong interests Some farmers have horticultural lands in the Atbara riverside. Women live in a closed environment and have no activities other than housekeeping.	
<b>Mechanized Rainfed Zone</b>		
El Alim (450 HH)	Near the Shagrub Refugee Camp (10 km) There is a community order not to cut trees Women are engaged in handicraft and agriculture Widows are around 3% of the total households.	<b>Abuda Sudanese is selected</b> because: 1) The community has been affected by the refugee camp in terms of firewood and land; 2) All households are reported as small-scale farmers; 3) Relatively good governance is observed on the use of tractors; and 4) There is no women activity for income generation with relative high proportion of widows.  <b>El Karda is selected</b> because: 1) The community has many small-scale farmers; 2) There is coordination mechanism to rent tractors with operators; and 3) Community is relatively poor and women are lack of basic knowledge on health and family without any income generating activities.  * Zehana is also amongst the communities requiring supports. However, it is far from the Wad El Helew town, where the extension center is to be established. Care will be taken by another extension center, which is to be established in Hamdait.
Land cultivated by refugees near the Abuda Refugee Camp (800 HH of farmers)	Land is adjacent to the Abuda Refugee Camp. All of them are small-scale: they live in the camp. One tractor is provided by UNHCR. There is a committee to manage it. Microfinance is provided by ACORD.	
Abuda Sudanese (700 HH)	Near to the Abuda Refugee Camp (Adjacent) All of them are small-scale farmers No tractors owned There is coordination mechanism to rent tractors Relatively a large proportion of widows reported (7% reported) No women activities	
El Magarif (2300 HH)	Near to the Wad El Helew town Many small and landless farmers who are engaged in other works in addition to agriculture (less poor as compared as other villages) 23 tractors owned There are women activities initiated by the community volunteer.	
Zehana (320 HH)	Relatively far from the Wad El Helew town (1.5 hours driving) Relatively small population (IDPs and refugees) Enough water thus no water harvesting techniques applied Relatively higher costs for renting tractors than other villages Relatively a large number of widows (50shhs:1 5% reported)	
El Karda (1500 HH)	Near the Atbara River Almost all farmers are small-scale and relatively poor as compared to other villages visited No tractors but there are drivers (operators) Coordination mechanism to rent tractor No women activity Relatively lower education and health knowledge among women	

Source: \* 2008 population census: other parts are based on field findings.

### (3) Detailed Designs of the Pilot Projects

Through discussions with the counterparts, the JICA team prepared the detailed designs of the pilot projects and cost estimates (available in the electronic outputs supplementary to this report). Displaying activities in the demonstration farm are carried out together with training and model extension activities (through OJT). Extension materials will be produced as outputs through these activities (Figure 2.4.7).

#### 1) Development of Horticultural Extension towards Profitable Agriculture

Table 2.4.24 shows the target crops and on-farm technologies to be dealt with by this project. Target crops were selected among crops economically important in the state<sup>18</sup>.

Cultivation plan or cropping pattern in the demonstration farm is shown in Figure 2.4.8. Based on the cultivation plan of target crops and relevant technologies, training courses both in theory and practice are designed as shown in Table 2.4.25.

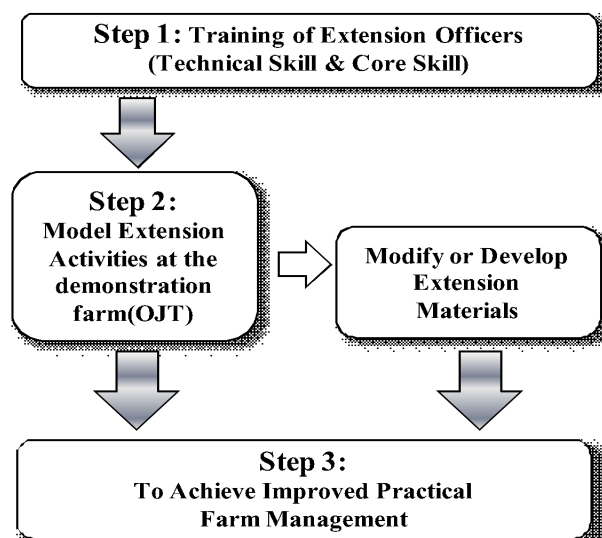


Figure 2.4.7 Concepts on Roles of the Pilot Projects

Table 2.4.24: Selection of Target Crops and On-farm Technologies in Horticulture Zone

Target crops	Target on-farm technologies	Training of Trainers			Extension activities			Existing extension materials
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	
Onion	Seedling management & transplanting		○			○		△
	Row planting (25cm × 15cm)	○			○			×
	Furrow irrigation	○			○			×
	IPM & Weeding		○			○		△
	Application of fertilizer (+PK)		○			○		△
	Harvesting	○			○			△
Tomato (off-season)	Seedling management & transplanting		○			○		△
	IPM & Weeding	○			○			×
Potato	Selection of proper cultivars	○			○			×
	Slicing tubers	○			○			×
	Land preparation	○			○			×
	Sowing	○			○			×
	Application of fertilizer	○			○			×
	Soil coverage	○			○			×
	IPM & Weeding	○			○			×
	Harvesting & Post Harvesting	○			○			×
Okra	Introduction of new varieties	○			○			×
	Extraction of seeds	○			○			△
Alfalfa	IPM & Weeding		○			○		×
	Harvesting		○			○		×
Citrus	Grafting (grapefruits and oranges)		○	○		○	○	△
Mango	Grafting		○	○		○	○	△
Banana	Sterilization of sucker	○			○			△

Note: △\* Existing but need to be reviewed.

<sup>18</sup> Potato was selected as promising crop due to high potentials for exporting and increment of farmer's keen interests.

Demonstration farm : 2 feddan= 20 haut (1 block)×10 blocks

Block	2011												2012											
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12			
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

**Figure 2.4.8: Cropping Pattern for Demonstration Farms in Horticulture Zone**

**Table 2.4.25: Training Courses on Target Crops in Horticulture Zone**

Target Crops	Training Courses (Theoretical and Practical)	Timing / Date
1. Onion	1-1 Row Planting (25cm×15cm) & Furrow irrigation 1-2 Seedling Management and Transplanting 1-3 Crop Management (IPM, Weeding etc.) 1-4 Harvesting and Post Harvesting	Dec. 2011 Sep. 2012 Dec. 2011 Jan. 2012
2. Tomato (off-season)	2-1 Seedling Management 2-2 Crop Management (IPM, Weeding etc.)	Jan. 2012 Feb. 2012
3. Okra	3-1 Crop Management (IPM, Weeding, Field Location etc.) 3-2 Seed Extraction	Aug. 2011 Oct. 2011
4. Potato	4-1 Preparation and Planting Tubers 4-2 Crop Management (IPM, Weeding, Soil Coverage etc.) 4-3 Harvesting & Post Harvesting	Oct. 2011 Nov.-Dec. 2011 Jan. 2012
5. Alfalfa	5-1 Crop Management (IPM, Weeding, Cutting Height etc.)	Feb.-March 2013
6. Citrus	6-1 Grafting for Grapefruits and Orange	Nov. 2012
7. Mango	7-1 Grafting for Mango	Nov. 2012
8. Banana	8-1 Sterilization of Sucker 8-2 Deep Planting of Sucker (50cm) 8-3 Crop Management (Weeding, Rotational Land Use)	Dec. 2012 Dec. 2012 Dec. 2012

As regards marketing, this pilot project introduces the off-season production of tomatoes, some simple techniques through harvesting and post harvesting courses and facilitates extension workers in information provision to farmers (e.g. activities of Ganine on banana marketing). It will also hold a workshop, inviting wholesalers, middlemen and quality-certificate companies to identify overall pictures for marketing improvement, which will formulate concrete actions for this project.

## 2) Revival of Cash Crop Production in Gash

With the government intention of cultivating cotton in this zone, the focus of this pilot project will tentatively put focus on cotton as a promising cash crop. Training courses for extension officers and model extension activities will be designed through market studies and on-demand follow-ups in the 1<sup>st</sup> year. The studies will examine the feasibility of introducing other cash crops than cottons. A demonstration plot will be fully established from the 2012 season.

1 demonstration farm :2 feddan= 1 feddan ×2 blocks

Block	2011												2012											
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12			
1																								
2																								

Figure 2.4.9: Cropping Pattern for Demonstration Farms in Flood Irrigated Zone

Table 2.4.26: Training courses targeting selected crop in the flood irrigation area

Target Crops	Training Courses (Theoretical and practical)	Timing / Date
Cotton	1-1 Crop Management (Land Preparation, Planting, IPM, Weeding etc.)	May & Oct. 2012
	1-2 Harvesting and Post Harvesting	Jan. 2013
	1-3 Marketing System and Information	Jan, 2013

### 3) Promotion of Water Harvesting Technology

Improved terrace construction technologies will be introduced. In addition, new legume crops such as cowpeas will be planted in the terrace in order to reduce the cost for community members to purchase fodder crops. A demonstration plot will be fully established from the season from the 2012 season.

1 demonstration farm :5 feddan= 1 feddan ×5blocks

Block	2011												2012											
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12			
1																								
2																								
3																								
4																								
5																								

Figure 2.4.10: Cropping Pattern for Demonstration Farms in Traditional Rainfed Zone

Table 2.4.27: Training Courses on Target Crop in the Traditional Rainfed Zone

Target Crops	Training courses (Theoretical and practical)	Timing / Date
Sorghum	1-1 Improved Terrace Construction for Water Harvesting	May & Oct. 2012
	1-2 Introduction of New Varieties	Jan. 2013
Legumes	2-1 Improved Terrace Construction for Water Harvesting	May & Oct. 2012
	2-2 Introduction of New Crops	July 2012
	2-3 Crop Management (Planting, Weeding, Harvesting, Post-harvesting)	Aug. 2012

### 4) Introduction of Mechanized Agriculture with Small-scale Farmers

The project will provide the communities with machinery (i.e., tractors) to enhance sorghum and sesame production. The focus will be put on technology transfer on operation and maintenance. The training courses and the extension activities will also include improved terrace construction. They will be offered not only to the target communities but also to refugees living in the Abuda Refugee Camp. A demonstration plot will be fully established from the 2012 season.

1 demonstration farm :5 feddan= 1 feddan ×5blocks

Block	2011												2012											
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12			
1																								
2																								
3																								
4																								
5																								

Figure 2.4.11: Cropping Pattern for Demonstration Farms in Mechanized Rainfed Zone

Table 2.4.28: Training courses targeting selected crops in the Mechanized Rainfed Zone

Target Crops	Training Courses (Theoretical and practical)	Timing / Date
1. Sorghum	1-1 Introduction of Machineries 1-2 Improved Terrace Construction for Water Harvesting with Machinery 1-3 Introduction of New Varieties 1-4 Crop Management (Planting, Weeding, Harvesting, Post-harvesting)	Jun. 2011 Jun. 2012 Jul. 2012 Jul-Sep. 2012
2. Sesame	2-1 Introduction of Machineries 2-2 Improved Terrace Construction for Water Harvesting with Machinery 2-3 Crop Management (Planting, Weeding, Harvesting, Post-harvesting)	Jun. 2011 Jun. 2012 Jul.-Aug. 2012

### 5) Livelihood Development with Community Initiatives

The pilot activities will be determined through dialogues with the respective communities on the pilot site. Following needs assessment, the feasibility of livelihood options should also be examined. The current design of the project is based on tentative ideas and, therefore, should be discussed with the communities. The project is expected to have the following approaches.

Table 2.4.29: Approaches and Focal Activities

Target Agricultural Zone	Current Situation	Development Approach and Focal
Pump Irrigated (Horticulture) Zone/ South Sawagi Extension Center	There are several regional extension centers that have provided basic training and awareness raising support to communities.	<b>More business oriented:</b> With the provision of more complex machines and equipment, the project is to establish the function of “production center,” where people, after getting training, can use the machines and equipment to produce goods for IGAs (e.g. with user fees). Extension service also includes the function of mobile training, as it is easy to get access to other extension centers.
Flood Irrigated Zone	There are several extension centers in Rural Aroma, which have experience of providing training and awareness rising to women. Market access is also good. Women activities are limited due to traditional culture.	<b>Complex approach of IGAs with Awareness Raising:</b> The first step will be to obtain understanding and consensus from the community leaders regarding the project intervention. The focal activities include: a) the enhancement of handicraft using local materials ( <i>zaf</i> ) or other materials which can be obtained from market; and b) sorghum unitization. IGAs will be combined with awareness raising on basic health and hygiene.
Traditional Rainfed Zone (El Sasrab or Um Yoy)	There is almost no service for rural development. The community seems to be poor, depending largely on sorghum production. Women’s activities are limited due to traditional culture.	<b>Basic Awareness Raising and Training:</b> The first step is to obtain understanding and consensus from the community leaders regarding the project intervention. Due to no intervention made so far, awareness raising workshops on women’s activities will be effective. Basic education programs on hygiene, health and nutrition will be provided. Basic training will be provided for IGAs.
Mechanized Rainfed Zone	There is almost no service for rural development. The	<b>Basic Awareness Raising and Training:</b> Awareness raising and education will be provided not only on

Target Agricultural Zone	Current Situation	Development Approach and Focal
(Abuda Sudanese and Al Karda)	communities face environment issues on the use of firewood. Living conditions are not good with limited knowledge on nutrition, health and environment.	health and nutrition but also on environment. The communities have riverside areas, where some households are engaged in horticulture and there are some potential areas for expansion. Home garden and food processing using the vegetables produced will be considered.

Participants will be selected based in consideration of the following.

**Table 2.4.30: Issues to be Considered for Selection of Participants**

Target Agriculture Zone	Target Number	Consideration to be taken into in selection of participants
Pump Irrigated (Horticulture) Zone/ (South Sawagi Extension Center)	25- 30 people	Having basic knowledge of activities or strong intention to learn it Better to be able to read, write and calculate Willingness to do business Can access to training sites
Flood Irrigated Zone / Traditional Rainfed Zone (El Sasrab or Um Yoy)	50-60 people (25-30 per site)/ 25-30 people	Obtaining consensus from the male members e.g. community leader and husband (the project will facilitate the process) Limited sources of incomes (e.g. the economic poor and widows) Active in being community extension workers Contribute to the project Can access to training sites
Mechanized Rainfed Zone (Abuda Sudanese and El Karda)	60 people (25-30 people /site)	Limited sources of incomes (e.g. the economic poor and widows) Active in being community extension workers Contribute to the project Concern with environment issues (e.g. feeling difficulty to fetch for the collection of firewood) Can access to training sites

As regard training and extension plan, the project will provide opportunities for rural development extension workers not only to upgrade technical skill, but also to make connection with other resourceful agencies and obtain useful information, e.g., on finance.

**Table 2.4.31: Possible Subjects of Training and for Rural Development Extension Workers**

Subject	Outlines	Coordination with
Planning	Participatory planning methods Feasibility Study	Project Expert
Monitoring & Evaluation	Format of Monitoring and Evaluation and how to use it	Project Expert
Food Processing	Cooking with juicer, gas-oven and so on	KVTC/Private
Cloth Making	The use of electronic sewing machines, embroidery machines	KVTC
Environment Needs Assessment	Identification of sources of energy, stakeholder analysis, examination of possible options (alternative sources or reduction of firewood use)	Energy Research Institute*
Gas introduction/ Improved Cooking stoves	The process and mechanism to introduce gas or improved coking stoves	Forestry National Corporation
Solar Energy Mobile battery charger	The process and mechanism to introduce solar energy mobile battery charger with maintenance and operation	PV unit**
Health and Hygiene	Family planning, health and hygiene, the information of village midwife training	SMoH
Finance	How to prepare a proposal for loan application Loan information of various banks and institutions	Project Expert

Note: \* Energy Research Institute is under the federal Ministry of Science and Technology. \*\* PV unit is a production unit of the Energy Research Institute.

For the communities, the project provides training and extension services according to needs and feasibility.



**Table 2.4.32: Possible Subjects of Training and Extension**

Subject	Pump Irrigated Zone (South Swage Center)	Flood Irrigated Zone	Traditional Rainfed Zone (El Sasrab or Um Yoy)	Mechanized Rainfed Zone (Abuda Sudanese & Al Karda)
<b>IGAs</b>				
Food Processing	Juice, Biscuit, Sweets	Sorghum milling and other simple food processing	Vegetable processing utilizing local horticulture Sorghum milling	Vegetable processing utilizing local horticulture Sorghum milling
Cloth making	Complex embroideries for Tarha and Toup School uniforms	(Basic Training)	(Basic Training)	(Basic Training)
Handicraft	Animal skin processing handicraft with <i>soksok</i>	Basket using <i>zaf</i> and handicraft with <i>soksok</i>	(Basic Training)	(Basic Training)
Home Garden	—	Can be considered	Can be considered	Can be considered
Finance	How to make proposal	How to make proposal		
<b>Livelihood Development</b>				
Health & Hygiene	—	Awareness Raising	Awareness Raising	Awareness Raising
Understanding on women activities	—	Individual Consultation	Awareness Raising	—
Environment	(Urban environment issues explanation)	—	—	Gas and/or improved cooking stoves

#### (4) Pilot Activities

During the preparation phase, the following activities were conducted.

##### 1) Capacity Assessment Workshop

As explained in 2.4.1 (4), the participatory workshop was conducted with the aim of identifying how the extension and other technical officers recognize their capacities. Suggestions and lessons obtained towards the implementation phase are as follows.

- At the workshop, discussion was held well. However, the participants merely commented on lack of capacity, facilities and equipment without careful analysis. Discussion could have been facilitated more on which issues or areas should be prioritized and what they can do to overcome the constraints.
- Majority of the participants is junior officers or under-section-heads. It could be more effective to involve higher-level officers and objective views to facilitate discussion and mutual understanding.
- Answers written in the questionnaire are too general to make an analysis (e.g., just put the sentence of “training not enough”). Writing should be also facilitated.
- There are a few counterparts participating in analysis. More officers could have been involved.
- This was the first time for almost all the participants to do capacity assessment. The JICA team facilitated the discussion. The SMoAFI side should take the initiative in the implementation phase.

##### 2) Training of Trainers on the Use of Tractors

The implementation phase is expected to start in May 2011, when the rainy season starts. In order to launch the Introduction of Mechanized Agriculture with Small-scale Farmers smoothly, there is a need for TOT on the use of tractors. In addition, i) some extension officers are not familiar with machinery but responsible for taking care of it with communities; ii) they have to learn some functions, e.g., seed

volume adjustment in a pneumatic planter; and iii) the target communities may not know how to operate and maintain it. The TOT was carried out in the following framework in 13-15 March 2011.

**Table 2.4.33: Outlines of the Tractor Training**

Item	Summary
Objectives	To know how to use the tractors and attachments To know how to do operation and maintenance
Methods	Lecture and on-farm training
Participants	8 extension officers including the officers from pilots sites
Contents	Driving skill, quick maintenance, lubricant and fueling and machinery operation

#### (5) Technology Transfer to the Counterparts

The activities of technology transfer to the counterparts can be summarized in Table 2.4.34. Substantial knowledge on local conditions was also transferred from the counterparts to the JICA team vice versa.

**Table 2.4.34: Summary of Technology Transfer in the Agriculture and Livelihood Cluster**

Period	Activity	Method	Results and Lessons
November to December 2010	Present Situation Analysis	Co-study	Facilitated by a JICA team member, counterparts conducted situation analysis and obtain basic data.
February 2011	Site Selection through field study	Co-study	Methodology of site selection is shared. Pilot sites are selected.
February 2011	Assist SMOAFI in introducing new cash crops	Meeting/ Document Preparation	Conditions for contract farming of cotton were clarified. A proposal for cotton farming was prepared. There are several officers who have knowledge but very few take the initiative and actions.
February 2011	Capacity Assessment	Workshop/ Teaching on how to make a analysis	Issues for capacity building are clarified. Core capacity training will provide opportunities of writing and analyzing the data with computers.
February 2011	Coordination Meeting between SMOAFI and UNHCR	Coordination/ Meeting	The situation of refugees living outside the camps was studied. It was confirmed between SMOAFI/JICA and UNHCR on how to collaborate between the Project and UNHCR activities. SMOAFI/JICA will provide assistance to local communities around the camps.
February 2011	Setting baselines and target values	Co-working/ Documentation Preparation	Issues on data availability and reliability were clarified. The importance of monitoring and evaluation through reporting was recognized.