

## 2.5 Health Cluster

### 2.5.1 Situation Analysis

Kassala State shows a relatively high Maternal Mortality Ratio (MMR), which is 1,414/100,000. It is the second worst in 15 states in the northern Sudan and the serious problem to tackle in the reproductive health (RH). The current situation of the RH services is described as follows.

#### (1) Present Situation of the Health in the State

##### 1) Allocation of Village Midwives (VMWs) and Health Visitors (HVs)

Table 2.5.1 shows the allocation of the health cadres related with reproductive health (RH) in 11 localities in the State.

**Table 2.5.1: Number of Health Personnel Related with Reproductive Health (RH)**

Locality	Population	HV*	AHV*	VMW*	NM*	MA*
Kassala	306,022	12	25	102	14	33
Rural Kassala	158,411	-	-	82	-	20
Western Kassala	81,368	-	-	37	-	5
New Halfa	306,022	2	12	142	14	33
River Atbara	217,182	-	15	46	15	23
North Delta	140,347	1	1	36	4	18
Rural Aroma	94,129	2	2	28	1	9
Girba	105,338	1	2	59	4	11
Wad El Helew	101,395	1	2	34	-	-
Telkuk	86,806	-	-	16	-	-
Hamshkorieb	281,880	-	-	26	-	-
<b>Total</b>	<b>1,834,675</b>	<b>19</b>	<b>59</b>	<b>608</b>	<b>43</b>	<b>141</b>

Note \*: HV: Health Visitor, AHV: Assistant Health Visitor, VMW: Village Midwife, NM: Nurse Midwife, MA: Medical Assistant  
Source: 2008 Census, SMOH.

##### 2) Basic Training of VMWs

According to the federal standard of the allocation of VMWs, 1 VMW of 2,000 populations is needed. The expecting number is 917 VMWs against the current number of 608, which is a shortage of 331 as shown in Table 2.5.2. The table also shows the big gaps among the localities, for example, 112% coverage rate in Girba and 18% in Hamshkorieb.

**Table 2.5.2: Number of VMWs and Coverage Rate by Locality**

Locality	Population	Necessary No.	Current No.	Shortage	Coverage Rate
Kassala	306,022	153	102	51	67%
Rural Kassala	158,411	79	82	(+) 3	104%
Western Kassala	81,368	41	37	4	91%
New Halfa	306,022	153	142	11	93%
River Atbara	217,182	109	46	63	42%
North Delta	140,347	70	36	34	51%
Rural Aroma	94,129	47	28	19	59%
Girba	105,338	53	59	(+) 6	112%
Wad El Helew	101,395	51	34	17	67%
Telkuk	86,806	43	16	27	37%
Hamshkorieb	281,880	141	26	115	18%
<b>Total</b>	<b>1,834,675</b>	<b>917</b>	<b>608</b>	<b>331</b>	<b>66%</b>

Source: Census 2008 and SMOH (as of Dec. 2010)

### 3) In-service Training of VMWs

In-service training for VMWs has been conducted by several partners in Kassala, but still more than 300 VMWs are in short as a gap between the target and existing number as shown in Table 2.5.3. Some figures in the table are not consistent due to inappropriate data management. A baseline survey will be implemented in the implementation phase to get more accurate information. It is also indispensable to promote accurate data management.

**Table 2.5.3: Gap in In-service Training of VMWs**

Locality	Existing No. of VMWs	No. of Trained/To-be-trained VMWs		Gap
		MDTF	UNFPA	
Kassala	106		25 (2011)	81
Rural Kassala	54	50	25 (2011)	0
Western Kassala	54			54
New Halfa	155		50 (2011)	105
River Atbara	45		25 (2011)	20
North Delta	11	29	25 (2009)	0
Rural Aroma	17	23	25 (2009)	0
Girba	67		25 (2010)	62
Wad El Helew	20			
Telkuk	15	13		2
Hamshkorieb	0	26		0
<b>Total</b>	<b>544</b>	<b>143</b>	<b>200</b>	<b>324</b>

Source: SMOH, MDTF, UNFPA.

### 4) Medical Facilities

Medical facilities are maintained with the limited budget in Kassala State. Large-scale rehabilitation, maintenance and repairing works are expected to be done with donations. Furthermore, local contractors' insufficient quality control also influences the quality of infrastructure. SMOH's civil engineers should coordinate all maintenance responsibility of the ministry's infrastructure. Table 2.5.4 and Table 2.5.5 show the current situation

**Table 2.5.4: Number of Health Facilities in Kassala State (2010)**

Locality	No. of Hospital	No. of Bed	Hospital with Consultant	Specialized Hospital	Health Center		Basic Health Unit
					Urban	Rural	
Kassala	3	445	3	2	36	-	24
Rural Kassala	1	-				10	25
Western Kassala	-	-				5	10
New Halfa	3	351	2		8	12	33
River Atbara	1	30				4	26
North Delta	1	60			1	5	23
Rural Aroma	1	57			1	6	2
Girba	1	74	1		2	6	11
Wad El Helew	1	16			1	5	16
Telkuk	2	80				4	14
Hamshkorieb	1	-			1	1	2
<b>Total</b>	<b>15</b>	<b>1,113</b>	<b>6</b>	<b>2</b>	<b>50</b>	<b>58</b>	<b>207</b>

Source: SMOH.

**Table 2.5.5: Target Hospitals (2010)**

Name	Staff	Total Bed	O/G Bed	Pediatric Bed	Normal Deliver (month)	CS (month)
Saudi Hospital	Specialist - 9 (OG/GY - 7, Pedi. - 2), GP - 8, Resident - 20, Ns. - 25, MW - 30	83	83	-	200	30
Kuwait Pediatric Teaching Hospital	Specialist - 2 (Pedi. - 2), GP - 8, Resident - 11, Ns. - 23, MW - 1, HV - 1	59	-	59	-	-
Girba Locality Hospital	Specialist - 1 (OG/GY - 1, Pedi. - 1), GP - 8, MA - 5, Ns. - 55, MW - 2	74	20	18	130	30
Wad El Helew Rural Hospital	GP - 3, MA - 1, Ns. - 7, MW - 2	16	4	4	30	5

Source: Elaborated by the JICA team based on information obtained from the hospitals.

### Tertiary Medical Facilities

#### A) Saudi Hospital

Saudi Hospital is a special hospital for obstetrics and gynecology. It is a teaching hospital of the faculty of medicine of Kassala University. The hospital also cares neonates born there. There are a fistula center (donated by UNFPA) and a vertical infection prevention center (donated by WB). There are three operation rooms, one labor room (with 3 delivery table) and two neonate rooms. They are under rehabilitation by UNFPA assistance. BOR is over 85% and one infant incubator is functioning.

All referral obstetrics and gynecology patients are received by the hospital and its function is important. Its infrastructure is supported by UNFPA. However, the majority of medical equipment has not been replaced since the beginning of establishment. Small donations were made by various donors, but the majority of medical equipment is not functioning. Such an environment impedes the provision of good services to patients.

In spite of limited facilities, demand of inpatients is very high. Sometimes unregistered additional beds are prepared and two patients share the same bed. Facilities are well maintained but almost all the medical equipment, except a laboratory, is not functioning.

#### B) Kuwait Pediatric Hospital

Kuwait Pediatric Hospital is a special hospital for pediatrics medical care. A NGO that operates various health centers and hospitals in Sudan operates the hospital. Medical staff allocation and their salaries are prepared by the Kassala State Government. Operation costs are covered by the NGO, but it is not adequate. One infant incubator is functioning, but all other equipment is in poor condition. All referral neonate patients are received and cared by the hospital. If surgical care is required, he or she will be transferred to Khartoum or the surgical department of the Kassala Teaching Hospital.

### Secondary Medical Facilities

#### C) Girba Locality Hospital

The Girba Locality Hospital is under the locality. Facilities of this hospital are well organized and well-trained staff is deployed. The pediatric ward, operation building and outpatient building were rehabilitated by the State Government, UN and UNICEF. The female and male wards are going to be rehabilitated by UNICEF in 2011.

The obstetric and neonate ward has not been rehabilitated except minor rehabilitation assisted by Italian

Cooperation. New construction will be required with an additional operation theater for the caesarian section. It is difficult to transfer caesarian patients because of the location of the existing building. Medical equipment for obstetrics and neonate care is obsolete and many of them are out of order. One of the three operation rooms is not used and some medical equipment is not used in these operation theaters.

#### D) Wad El Helew Rural Hospital

This is a rural hospital of Wad El Helew Locality. This hospital is categorized as a rural hospital and covers general people of the locality. An operation block was constructed by the State Government in 2008. A storm destroyed the water supply tank in 2009. Water to the operation room is brought by manually and stored in a container. Water for operations is all taken from this container. The situation should be improved, as it may causes infection.

A present three doctors can cover needs of medical care. However, an anesthesia technician is required to provide sufficient anesthesia for operations. The patient transfer method is a serious problem. It is not only in this locality but also all over in Sudan. It is an important issue for life saving of emergency patients, especially pregnant women. The delivery room can cover all the existing needs. However, the lack of infant incubators and pediatric specialists limits the provision of neonate care. Sterilization equipment and patient monitoring equipment are not well functioning in the operation room.

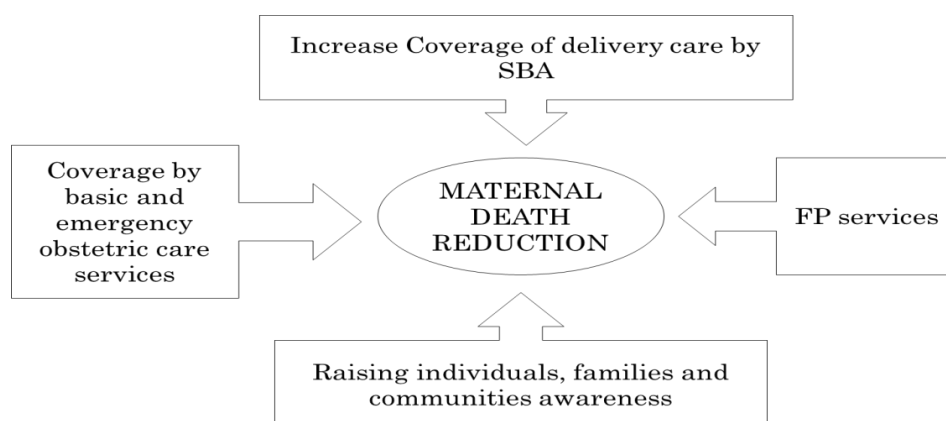
### 5) Medical Equipment

The medical equipment plan should conform to the existing operation and maintenance system. The operation and maintenance conditions in Kassala State are poor. Only repair work is implemented for maintenance. Seven medical equipment engineers are allocated to the state. Six of them are female engineers and three of them are deployed at hospitals. A medical equipment engineer is highly expected to strengthen the operation and maintenance of medical equipment. However, medical equipment engineering has a short history in Sudan. Training in the field has not been fulfilled and the limited capability of the existing engineers impedes creating a preventive maintenance environment. Their maintenance activity is concentrated on repairing work. Furthermore, operators' limited knowledge on medical equipment operation and limited support from medical equipment suppliers are also constraints on the operation and maintenance environment. The majority of medical equipment is old and has not been replaced for a long time because of inadequate budget.

#### (2) Government Policy and Priorities

Improvement of Maternal and Child Health (MCH) status has been one of the most important health issues in Sudan. MCH is selected as one of the priority areas by the Federal Ministry of Health (FMoH) in the Five-year Health Sector Strategy (2007-2011). In the Strategic Plan, provision of a continuum of care (COC) and increase of delivery by skilled birth attendants (SBA) are presented as the core intervention, and the following activities are deemed to reduce maternal mortality.

- Upgrade the skills of midwives
- Quality midwifery care at Primary Health Care (PHC) level
- Training of one skilled midwife for each village with a population over 1,000
- Provide refresher courses to low performers to build their technical capacity
- Supportive supervision for midwives should be established.
- Registration system of birth and maternal deaths through midwives should be developed.



**Figure 2.5.1: National Strategy of Maternal Death Reduction**

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

In Kassala State, more than thirty partners support the health sector and some of them implement reproductive health (RH) projects by combining village midwives (VMW) training, emergency obstetrics care (EmOC) and health education, selecting specific localities as target sites (Table 2.5.6)

**Table 2.5.6: Health Partners in Kassala State**

UN/Bilateral agency	International NGO	Sudanese NGO	Others
WHO	Plan Sudan	SRC	CDF (Community Development Fund Project)
UNICEF	Kuwait patient care fund	Charitable North Org.	WES
UNFPA	Islamic Relief Agency	HIV control network	DHSDP (MDTF)
UNHCR	GOAL	Raira	IFAD
WFP	ACORD	JASMAR	Initiative of friendly communities
UNDP	British Muslim Aid	Ana Al Sudan	
Italian Cooperation	Samarten Purse	Delta org.	
(CIDA)*	Qatar organization	SLWHA	

\*CIDA has already withdrawn from Kassala State.

Major partners who have programs in the RH field are as shown in Table 2.5.7.

**Table 2.5.7: Main Reproductive Health (RH) Activities by Major Health Partners in Kassala**

Target and activities		MDTF	UNFPA	UNICEF	Italian Coop.
VMW	In-service training	●	●	●	○
	Basic training	●	●		
	Supervision	●			
	School rehabilitation	●			
EmOC	Training		●	●	●
Hospital	Rehabilitation		●	●	●
	Equipment provision	●	●	●	●
Community	Health education		●	●	

○: only for funding.

#### 1) Multi-Donor Trust Funds (MDTF)

Multi-Donor Trust Funds (MDTF) started the Decentralized Health System Development Project (DHSDP) in 2006 aiming at improving the access to basic health services in four states, i.e. South

Kordofan, Blue Nile, Red Sea and Kassala. Main activities regarding RH are basic and in-service training for VMWs, supervision for VMWs, rehabilitation of midwifery school, provision of medical equipment and training of EmOC at the secondary hospital, and the maternal death review system.

In Kassala State, five localities, Rural Kassala, Telkuk, Hamshkorieb, North Delta and Rural Aroma, are selected as project sites. Table 2.5.8 shows the increase of VMWs by the basic training conducted by MDTF in five localities.

**Table 2.5.8: Increase of VMWs through Basic Training and Incentives by MDTF**

	Rural Kassala	Rural Aroma	North Delta	Hamshkorieb	Telkuk	Total
Population	162,490	107,982	96,492	268,265	288,952	924,181
Target No. of VMWs*	81	54	48	134	144	462
No. of VMWs before the project (2007)	49	17	7	0	14	88
No. of VMWs graduated from training (2009)	-	5	23	26	0	54
No. of VMWs participating in training in 2010	-	5	25	40	65	135
No. of VMWs moved from other localities	12	1	-	-	2	15
Expected No. of VMWs in 2011	61	28	55	66	81	281
Coverage Rate	75%	52%	115%	49%	56%	61%

Note \*: SMOH Target: 1 VMW per 2,000 population

As for the in-service training of VMWs, MDTF conducts supervision training for health visitors (HVs) and assistant health visitors (AHVs), and implements activities similar to the JICA-assisted “Village Midwife Empowerment Model<sup>19</sup>” such as making a list of VMWs, allocating each VMW to HV/AHV for follow-up and regular monitoring by HV/AHV.

MDTF started to introduce performance-based incentives in 2010. VMWs receive SDG 10 each when pregnant women in charge come to ANC three times, receive SDG 10 each when assisting a normal delivery, and receive SDG 10 each for conducting one prenatal care. SDG 350 is paid for HV/AHV every month to support their supervision activity to visit each VMW’s house in charge to monitor their activities. Also cash incentives are given to rural hospitals for supporting their operational costs such as SDG 100 for one caesarian section. Cash incentives seem to contribute for improvement of RH services because VMWs do not hesitate to refer pregnant women any more if they can get incentives. It is reported that fifteen VMWs have moved to localities where MDTF is paying cash incentives in order to increase their incomes.

## 2) UNFPA

UNFPA has started support for the health sector in Kassala State since the 1990s and now implements the Reproductive Health Project. The goal of the project is to provide equitable access to and increased utilization of strengthened and quality basic health services. Activities cover almost all areas of RH including basic and in-service training for VMWs, training on EmOC for hospital staff with equipment provision, community awareness raising through advocacy and drama. Two localities are selected every year as the targeted localities and all localities in Kassala State will be covered in a few years.

## 3) UNICEF

The Strengthening Maternal and Child Health Project by UNICEF aims at improving maternal and child health indicators in three selected localities such as Girba, Rural Aroma and North Delta. UNICEF used to support basic training for VMWs for more than ten years but now focuses on in-service training together with training on EmOC for hospital staff with renovation of facilities, social mobilization and

<sup>19</sup> The in-service training model was developed and conducted in JICA’s Frontline Maternal and Child Health Empowerment Project (Mother Nile Project).

## Integrated Management of Childhood Illness.

**Table 2.5.9: Situation of Training for VMWs and Support to Hospitals by Partner and Locality**

Locality	In-service Training for VMWs			Basic Training for VMWs	Support for Hospitals
Kassala	UNFPA 2011			UNFPA (2-year course)	
Rural Kassala	UNFPA 2011		MDTF		
Western Kassala					
New Halfa	(UNFPA 2011)			UNFPA	
River Atbara	(UNFPA 2011)				
North Delta	UNFPA	UNICEF	MDTF	MDTF (1 year)	
Rural Aroma	UNFPA	UNICEF	MDTF		UNICEF
Girba	UNFPA 2010	UNICEF			UNICEF
Wad El Helew	UNFPA 2010				
Telkuk			MDTF	MDTF (1 year) 2 schools	MDTF
Hamshkorieb	UNFPA		MDTF	MDTF (1 year)	

**4) Italian Cooperation**

The Italian Cooperation selected Kassala State as only project site in northern Sudan and started several health programs in 2008. In-service training for VMWs to be executed by UNFPA and UNICEF in 2011 will be partly funded by the Italian Cooperation. In addition to support to health academies and construction of health centers, support to rural hospitals including EmOC training, renovation and equipment provision will start in 2011.

**5) Frontline Maternal and Child Health Empowerment Project (Mother Nile Project)**

JICA currently is implementing the technical cooperation project named Frontline Maternal and Child Health Empowerment Project (Mother Nile Project) in Sinnar State. This project developed “Village Midwife Empowerment Model” for in-service training of VMWs, which is recommended by FMoH to roll out the whole country. Comparisons between the JICA-assisted Village Midwife Empowerment Model and in-service training by other donors in Kassala State are presented in Table 2.5.10 and Table 2.5.11.

**Table 2.5.10: Comparison between Village Midwife Empowerment Model and In-service Training in Kassala State**

Village Midwife Empowerment Model	In-service Training in Kassala		
	JICA	MDTF	UNFPA
Standard obstetric care		• (with incentives to hospitals)	•
Health information system		•	•
Health education for community			•
VMW allocation to health facility for supervision		• (with incentives to VMWs)	
Replacement of VMW kits		•	•

**Table 2.5.11: Comparison of training schedule between Village Midwife Empowerment Model and In-service Training in Kassala State**

	In-service Training in Kassala	Village Midwife Empowerment Model
Day 1	- Outline of primary care : 30 mins. - Anatomy of reproductive organ and menstruation : 1 hr. - Pregnancy care / sings of disorder and	- Pregnancy care (Lecture & demonstration) : 1.5 hrs. - Sings of disorder and complication during pregnancy : 1.5 hrs.

	<b>In-service Training in Kassala</b>	<b>Village Midwife Empowerment Model</b>
	complication during pregnancy (Referral cases) : 1.5 hrs.	- Pre-pregnancy care (New topic) : 30 mins. - Delivery plan (New topic) : 30 mins.
Day 2	- Referral standard of during delivery, pre-delivery (Lecture) : 1 hr. - Delivery Care (Practice) : 2 hrs - Community health education on RH : 1.5 hrs.	- Delivery, Referral standard during delivery (Lecture & demonstration) : 2 hrs. - Delivery Care (Practice) : 6.5 hrs. - Approach with community health education (Practice) : 2 hrs.
Day 3	- Practice in the health center (Practice) : 3.5 hrs. - Safety delivery : 1 hr.	- ANC (Practice) : 5 hrs. (Measurement of blood pressure, basic examination, Urine test, history taking) - Family Planning: 1.5 hrs.
Day 4	- Basic newborn care / Newborn resuscitation and referral case : 1 hr. - Newborn resuscitation (Practice) : 2.5 hrs. - STI, HIV/AIDS, Counseling : 1 hr.	- Basic newborn care and examination : 1 hr. - Newborn resuscitation (Practice) : 1 hr. - STI, HIV/AIDS : 1 hr.
Day 5	- Cleaning / Equipment processing (Lecture) : 2 hrs. - Above practice : 3 hrs.	- Cleaning /Equipment processing (Lecture) : 1 hr. - Same as above (Demonstration & practice) : 6.5 hrs.
Day 5	- Breast feeding/ nutrition of pregnant women : 1 hr. - Harmful traditional practice : 1 hr. - HIS and reporting (Lecture) : 3 hrs.	- Topic lecturing in the delivery care and the pre-pregnancy health - Harmful traditional practice : 1 hr. - HIS and reporting (Lecture) : 30 mins. - HIS and reporting (Role play & practice) : 2 hrs. - Care during post natal and complications (referral cases) : 1.5 hrs.
Day 7	- Reviewing : 2 hrs. - Discussion : 30 mins. * Training conducted by MDTF includes measurement of blood pressure and IV insert.	- Review in the recap every morning - Measurement of blood pressure (Practice evaluation) : 1 hr.

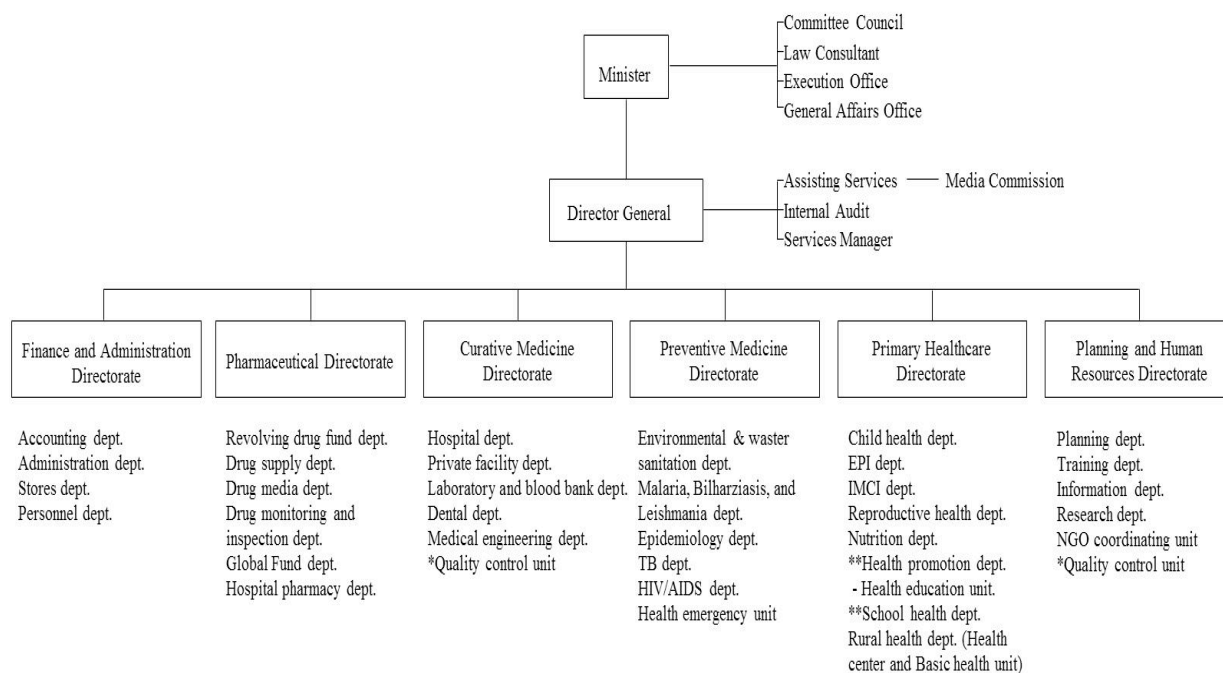
#### (4) Current Situation and Problem Analysis

##### 1) Capacity Assessment

###### A) Organization of SMOH

Figure 2.5.2 shows the organization of the Ministry of Health of Kassala State. Counterparts are staff of the Primary Health Care (PHC) Directorate and the Curative Medicine Directorate. The main department in charge of the activities of reduction of maternal deaths and neonatal deaths is the Reproductive Health (RH) Department of the PHC Directorate. The undertakings and staff arrangement of RH are shown in Table 2.5.12.





**Figure 2.5.2: Organization Chart of Ministry of Health of Kassala State**

**Table 2.5.12: Outline of Reproductive Health (RH) Department**

Item	Outlines
Mission	<ul style="list-style-type: none"> <li>Improve mother &amp; child health in Kassala State</li> <li>Decrease the high maternal &amp; neonatal mortality rates</li> <li>Eradicate Deeply rooted harmful traditional practices, e.g., Female Genital Mutilation</li> </ul>
Service	<ul style="list-style-type: none"> <li>Increase coverage by midwifery services.</li> <li>Increase state Antenatal Care (ANC) and Family Planning service coverage.</li> <li>Increase the coverage by EmOC services.</li> <li>Improve the political commitment and resources for Maternal and Neonatal Health (MNH).</li> <li>Ensure strong partnership and synergy toward maternal and newborn mortality reduction.</li> <li>Community mobilization towards MNH services.</li> </ul>
Staff	<ul style="list-style-type: none"> <li>RH Coordinator (Male, MD)</li> <li>RH Deputy Coordinator (Female, MD)</li> <li>Focal person of Maternal Death Review (Male, BA)</li> <li>State HV (Female, Sister)</li> <li>Statistical Coordinator (Female, Higher secondary school)</li> <li>Assistant Statistical Coordinator (Female, Higher secondary school)</li> <li>IT and logistics (Male, BA)</li> </ul>
Scope work of Coordinator and deputy	<p><u>RH Coordinator:</u></p> <ol style="list-style-type: none"> <li>Management of RH in Kassala State (11 localities) with the national guidelines</li> <li>Planning, implementation, supervision, monitoring and evaluation</li> <li>Coordination between different RH partners</li> <li>Contribution in RH related activities nationally and locally</li> <li>Allocation of resource distribution of RH cadre according to needs</li> </ol> <p><u>RH Deputy Coordinator:</u></p> <ol style="list-style-type: none"> <li>Midwifery schools – coordinator</li> <li>RH- director assistant</li> </ol>

**B) Evaluation of RH Department (by the RH Coordinator)**

Table 2.5.13 shows the self-evaluation made by RH coordinator on their capacity.

**Table 2.5.13: Capacity Evaluation by RH**

Element of capacity	Evaluation*					Reason
1. Core capacity						
Long-term (5-year) strategic planning	1	2	3	4	5	Ended in 2011
Annual planning	1	2	3	4	5	
Leadership	1	2	3	4	5	No capacity building training in leadership
2. Communication						
with management	1	2	3	4	5	No capacity building training
with colleagues	1	2	3	4	5	
with health personnel	1	2	3	4	5	
with communities	1	2	3	4	5	
Public relations	1	2	3	4	5	
Teamwork	1	2	3	4	5	
3. Motivation for staff						
Monetary	1	2	3	4	5	
Non-monetary	1	2	3	4	5	
4. Relationship with Ministries						
Federal	1	2	3	4	5	
SMOF	1	2	3	4	5	
Record keeping	1	2	3	4	5	Deficiency in qualified staff particularly at locality level
Experience: Accumulation system	1	2	3	4	5	

Note: \* 1: very poor, 2: poor, 3: medium, 4: good, 5: very good

## 2) Present Situation and Problem Analysis

Interviews, secondary data and a workshop conducted by the JICA team have identified the following as main health problems of the reproductive health to tackle.

- Reluctance to see medical doctors and low school enrollment of girls due to cultural background, FGM (female genital mutilation)
- Widespread poverty and malnutrition, inability to pay medical services
- A limited number of health facilities in large areas, insufficient access to services, lack of transportation and lack of human resources to run facilities as shown in Table 2.5.7
- Lack of health personnel and severe brain drain to abroad as shown in Table 2.5.8
- Generally poor infrastructure and medical equipment at all levels of facilities
- Lack of essential drugs, basic medical kits, equipment and consumables at all levels of care
- Under-utilization of peripheral health care facilities by the population due to demand barriers
- Poor health management
- Poor motivation of health staff due to low salaries, inadequate facilities, staff houses and generally lack of a work-conducive environment
- Lack of means of transportation in the referral system and supervisory activities at locality level

### 2.5.2 Plan for the Implementation Phase

#### (1) Basic Policy

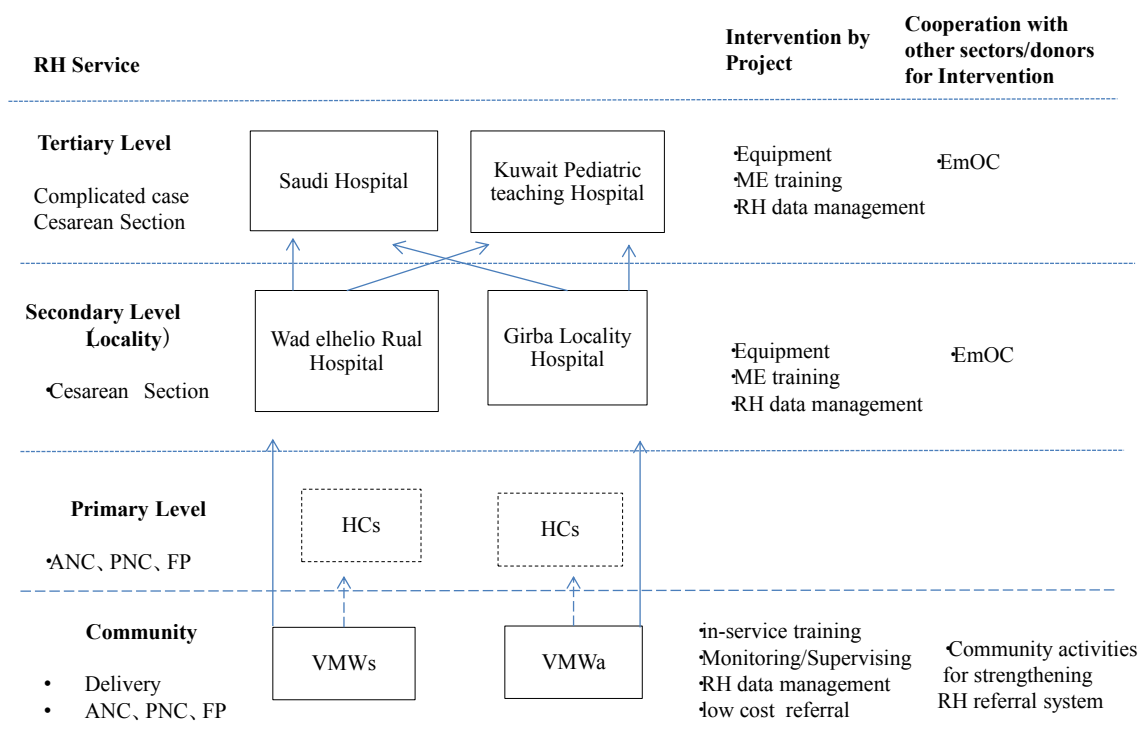
##### 1) Priority and Strategy Setting for the Implementation Phase

There are many donor-assisted projects in the RH department, the Ministry of Health. However, there are still big gaps to be intervened and activities will contribute to these priorities. The proposed action is to respond to the following urgent issues through strengthening the State Government's capacity and service

provision for reproductive health.

- 1) EmOC (Emergency Obstetrics Care),
- 2) Referral system
- 3) Supervision of Village Midwives (VMWs)
- 4) Community awareness

Upgrading of the operational capacity of the health structures of first, second and tertiary level through strengthen the government’s capacity shown in Figure 2.5.3.



**Figure 2.5.3 Strategic Image of Strengthening the Operational Capacity**

## 2) Pilot Site Selection and Preparation

In the meeting with SMOH, MDTF and UNFPA, the pilot project sites of the implementation phase were requested by SMOH. The selection criteria were localities received less support from donors and NGO. Kassala and New Halfa were excluded due to their higher RH service-covering rates. Five of the nine localities are supported by MDTF and two localities are UNFPA project sites.

Girba and Wad El Helew were one locality until 4 years ago and most inhabitants make a living by farming and grazing. There are four refugee camps in Wad El Helew, which is isolated during the raining season due to poor road conditions.

**Table 2.5.14: RH Related Indicators of Girba and Wad El Helew Localities**

Locality	Population	Reproductive age	No. of village	No. of Hospital	No. of HC	No. BHU	No. of VMW	Village covered by RH services
Girba	101,395	24.8%	85	1 (74 beds)	8	11	67	45%
Wad El Helew	86,806	24.8%	69	1 (16 beds)	6	16	20	30%

Source: 2008 Census and information from SMOH.

**(2) Plan for the Implementation Phase****1) Project Design Matrix (PDM)**

Based on the M/M signed on 13 March 2011, the output, activities and indicators for technical cooperation are identified as follows.

**Table 2.5.15: Project Design Matrix (PDM) for the Health Cluster**

<b>Output and Activities</b>	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>
<u>Output 4 : Kassala State Government's capacity to provide service for <b>Maternal and Child Health</b> is strengthened.</u>	4.1 Percentage of VMWs who passed post-test among VMWs taking in-service training (from N/A to 70%)	4.1 Training record
4.1 Improve maternal and child health (MCH) service in the pilot areas	4.2 Percentage of hospital staff who passed post-test among hospital staff taking training on EmOC (from N/A to 75%)	4.2 Training record
4.1.1 Conduct a supplementary survey and an endline survey on maternal and child health care services.	4.3 Percentage of medical equipment engineers who passed post-test among medical engineers taking training on equipment management and maintenance (from N/A to 70%)	4.3 Training record
4.1.2 Make an annual implementation schedule in the pilot localities (Girba and Wad El Helew).	4.4 Percentage of HVs and AHVs who regularly supervise VMWs in all HVs and AHVs in the pilot areas (from N/A to 80%)	4.4 Supervision reports by HV/AHV
4.1.3 Coordinate donors' activities on reproductive health (RH).	4.5 Percentage of referral cases among all expectant women and nursing mothers in the pilot areas (from 25% (2011) to 85%)	4.5 Activity reports on RH referral system
4.1.4 Conduct in-service training for VMWs.	4.6 Percentage of localities which submit monitoring reports on reproductive health (RH) to the State Ministry of Health among all 11 localities (from 65% (2011) to 90%)	4.6 Monitoring reports on RH
4.1.5 Promote supportive supervision and coordination between HV/AHV and VMW at the locality level		
4.1.6 Coordinate emergency obstetrics care (EmOC) training and neonatal care training for staff in target hospitals.		
4.1.7 Conduct training of medical equipment engineers.		
4.1.8 Introduce medical equipment management activities (including 5S method) in target hospitals.		
4.1.9 Provide necessary equipment for target hospitals (Saudi Maternal Hospital, Kuwait Pediatric Teaching Hospital and locality hospitals in the pilot areas).		
4.1.10 Promote the State Ministry of Health to conduct the monitoring and supervision of RH activity indicators monthly in the pilot areas.		
4.1.11 Conduct trial for low-cost referral system in collaboration with communities.		
4.1.12 Make recommendations based on the experiences in 4.1.1 – 4.1.11		
4.2 Strengthen capacity of frontline staff for maternal and child health.		
4.2.1 Formulate in-service training plans for VMWs for all localities in close coordination with development partners.		
4.2.1 Conduct in-service training for VMWs in selected area based on training plans.		
4.2.3 Promote supportive supervision and coordination between HV/AHV and VMW at the locality level.		
	<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 (MCH and Supervision, Training Management, and Medical Equipment) 2) Equipment	The State Government provides necessary funds for the activities.

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

## 2) Plan for the Pilot Activity

In the Health Cluster, the following pilot activity is planned for the implementation phase.

**Table 2.5.16: Pilot Activity in the Health Cluster**

<b>Project Name</b>	<b>Improvement of reproductive health services in pilot area</b>
Objective	to strengthen reproductive health services from community level to tertiary health service in pilot localities (Girba, Wad El Helew)
Target	All health staff in the pilot localities
Outputs	- Higher quality services of Standard Obstetric Care (SOC) by VMWs who finished in-service training, and HV/AHV who finished TOT - Better quality of EmOC by hospitals which had training and adequate equipment
Schedule	This pilot project will be implemented mainly in the first year and the second year and then follow-up activities will be continued with rolling out of in-service training to other localities in the second year and the third year <u>Pilot Phase (in Girba and Wad El Helew Localities)</u> Year 1: May 2011 – March 2012 Year 2: May 2012 – August 2012 <u>Follow-up Phase (Rolling-out to other localities)</u> Year 2: September 2012 – March 2013 Year 3: May 2013 – March 2014
Activities	1) Formulate plan of in-service training for VMWs in pilot area 2) Conduct TOT for HV/AHV to increase their skill and knowledge 3) Conduct in-service training for 62 VMWs (3 batches/year x 3 years) 4) Assign each VMW to HV/AHV who will supervise SOC activity by VMWs 5) Promote supervision and coordination between VMW and HV/AHV 6) Coordinate EmOC training for hospital staff 7) Procure equipment and provide training for medical engineers at hospitals 8) Promote RH health indicators collection and management 9) Conduct trial low cost referral system.
Budget	Year 1: SDG 68,000 (for in-service training) Year 2: SDG 136,000 (for in-service training) Year 3: SDG 136,000 (for in-service training)

### (3) Planned Inputs

#### 1) Experts

It is proposed that three experts in charge of “Maternal and Child Health Program”, “Health Training Management”, “Medical Equipment Management” respectively, will be deployed to carry out the activities delineated in “(2) Plan for the Implementation Phase”. However, discussions on revising this plan are still going on with the counterparts, so it may be changed based on the result of discussions. Tasks expected for each expert are as follows (see Annex 3.1 for proposed assignment schedule for each expert). The experts are to collaborate and complement each other to accomplish the project purpose.

- a) Maternal and Child Health Program: Coordination of experts in the Health Cluster, supplementary surveys on RH services including baseline and endline surveys, formulation of the annual plan in pilot areas, support for supportive supervision, support for capacity development of data collection and management, and donor coordination.
- b) Health Training Management: Study of current situation on health training, and support for health training improvement.
- c) Medical Equipment Management: Formulation of procurement plans for equipment, support to the procurement and installation, and provide end-user training and training for medical engineers, etc.

## 2) Training in Japan and Other Countries

Manager training is to be provided in Japan to stimulate their motivation to strengthen the capacity of RH service in the first year. Hospital management and medical equipment management are to be provided in the second year. Training related with in-service training and supportive supervision is to be provided in the other countries which are similar with Sudan in some ways. Reasons for training in other countries are that HVs can find ideas and hints to apply to their work, that their motivation and competitiveness will improve in similar working environment, that HVs can receive training with these merits at lower costs. Islamic background countries are candidates. (See Annex 3.2 for the overall plan).

## 3) Equipment

Equipment procurement is planned based on following priorities.

- Select equipment for mother and child health.
- Select facilities in the area to strengthening referral system.
- Plan minimum required equipment whose operation and maintenance are affordable by the state.
- Include equipment for EmOC.

Training will be conducted for users and staff as well as medical engineers of SMOH in order to operate and maintain them effectively and efficiently at the time of the equipment procurement and installation. Seven medical engineers are allocated at medical facilities in Kassala. During the project period, they will receive training every year for their empowerment. The equipment procured in the preparatory phase is as shown in Table 2.5.17. (See Annex 3.3.1 for details). The equipment to be procured in the implementation phase is listed in Annex 3.3.2.

**Table 2.5.17 Equipment Procured in the Preparation Phase**

Equipment	Application	Q'ty
Computer	Computer for RH coordination and management	7
Printer	Printer for statistics of hospital	5
Air conditioner	Temperature and environmental control of statistics room and blood bank	4
Photocopy machine	Use for copying patient management format	1
Midwifery practice model, 3 functions	For vaginal examination, obstetric assistance, and perineal-suture practice.	1
Midwifery practice model, 1 function	Delivery practice model.	1
Weighing scale	Training use for measuring weights of pregnant women	1
VMW kit	Antenatal, delivery, and post natal care to patient by VMW	180

## 4) Budget (Japanese Side)

The budget on the Japanese side is proposed based on the above-mentioned plans for inputs, which is about 220 million JPY in total for the 3-year period (see Annex 3.5 for details).

## 5) Budget (Sudanese Side)

The Sudanese side plans to appropriate SDG 694,440 in total for the 3-year period of implementation phase, for the venue cost for training, travel allowance for supportive supervision, running costs (electricity, water charges, etc.) of the project office, and so on (see Annex 3.6 for details).

### 2.5.3 Preparatory Work for the Implementation Phase

#### (1) Pilot Activities in the Preparatory Phase

The following activities were carried out from January 2011 to March 2011 in preparation for the implementation phase.

##### 1) Study Tour to Sinnar State

Time: 1-4 February 2011

Participants: RH Coordinator, Deputy RH Coordinator, State Supervisor, Dean of Kassala MW School

Objectives: To reflect the lessons learned from the observation of MNP activities and the exchange of their experiences of in-service training into activities in the implementation phase.

Study Program:

Day	Contents
Day 1	Departure of Kassala and Arrival in Singa, Sinnar State
Day 2	<ul style="list-style-type: none"> <li>• Orientation of the tour at MNP office</li> <li>• Observation of in-service training of VMWs</li> <li>• Visit Algalga HC               <ul style="list-style-type: none"> <li>- Interview to VMWs who completed in-service training</li> <li>- Introduction of facility based supervisory system</li> </ul> </li> <li>• Visit Sabonabi Village (one of a model village)               <ul style="list-style-type: none"> <li>- Introduction of activities by VMW and CHPs</li> </ul> </li> </ul>
Day 3	<ul style="list-style-type: none"> <li>• Visit Sinnar VMW School               <ul style="list-style-type: none"> <li>- Observation of basic service training, interview to the dean</li> </ul> </li> <li>• Visit Almurafa Village               <ul style="list-style-type: none"> <li>- Introduction of activities by VMWs and CHPs</li> </ul> </li> <li>• Wrap-up of the study tour</li> </ul>
Day 4	Departure from Singa and Arrival in Kassala

##### 2) TOT of In-service Training by “Village Midwife Empowerment Model” and Facilitator Training

Time: 6-17 February 2011

Participants: HVs and training coordinators

Training contents: Develop facilitators of “Village Midwife Empowerment Model” for the implementation phase through the following process.

- In the first session, all HVs at Kassala State learn knowledge of the “Village Midwife Empowerment Model”
- In the second session, all HVs learn facilitator skills on “Village Midwife Empowerment Model”
- Some HVs are certified as a facilitator and some as assistant facilitator.

TOT Program:

Day	Contents
<b>First Session: Lecture and practice of in-service training (5 days)</b>	
Day 1	Pre-pregnancy care and delivery plan, ANC and minor disorders and complication during pregnancy, Family planning, STD, HIV/AIDS
Day 2	Care during pregnancy; ANC, harmful traditional practice
Day 3	Basic newborn care, newborn resuscitation, labor and complication during labor, care during postnatal and complications; PNC
Day 4	Infection prevention,
Day 5	Delivery
Day 6	Break
<b>Second Session: Lecture and practice of facilitating (6 days)</b>	
Day 7	Discussion on images of Ideal VMW, facilitation techniques, communication skills, training methods and materials (1), training methods and materials (2) in “Village Midwife Empowerment Model”

Day	Contents
Day 8	Evaluation methods of trainees in “Village Midwife Empowerment Model”, Replacement of kit and supervision system in “Village Midwife Empowerment Model”, community activities in Sinnar, lecture presentation by participants
Day 9	Lecture presentation by participants
Day 10	Practical by participants on ANC, practical by participants on infectious prevention
Day 11	Practical by participants on delivery, practical by participants on basic newborn care and resuscitation unit
Day 12	Course evaluation and open discussion for reviewing the training

There are 19 HVs in Kassala State. Two HVs were out of Kassala at that time, attending at Academia in Khartoum. One HV was sick off. So the remaining 16 HVs attended this TOT.

In the first session, the pre-test and post-test of in-service training were conducted. HVs who gained over 50 score were defined “passed”, as shown in Table 2.5.18. Five HVs passed the pre-test and 14 HVs passed the post-test. The ratio of the passer was 31.25 % for the pre-test and 87.25% for the post-test. It increased over 50%. The highest score was 59 in the pre-test and 79 in the post-test. The lowest score was 26 in the pre-test and 46 in the post-test. The distribution of the scores in the pre-test and the post-test are shown in Table 2.5.18. The majority is the scores of 49-40 in the pre-test, but rose to 69-60 in the post-test.

**Table 2.5.18: Results of First Session of TOT of in-service training**

	Pre-test	Post-test	Score	Pre-test	Post-test
Passed	5	14	100 - 90	0	0
Ratio of the Passed	31.25	87.5	89 - 80	0	0
Highest score	59	79	79 - 70	0	3
Lowest score	26	46	69 - 60	0	7
Average	44.63	62.3	59 - 50	5	4
			49 - 40	7	2
			Under 40	4	0

Note: Over 50% of the total score is defined as “passed”.

### 3) Feedback Meeting on Study Tour and TOT of In-service Training

Time: 2 March 2011

Presenters: RH Coordinator and RH Deputy RH Coordinator, SMoH

Participants: (SMOH) PHC Director, RH Coordinator, RH Deputy Coordinator  
(JICA) Project Leader, Health Expert, Research Assistant

Objectives:

- To share experiences of Study tour and TOT presented by two participants with project members.
- To discuss lessons and learned in order to reflect how the activities could be conducted.

Conclusions:

- The consensus of all participants is that TOT was a fruitful and good experience for them.
- Kassala State has the existing in-service training system of VMWs, which has the national origin.
- The components of the Village Midwife Empowerment Model are the same as the existing system in Kassala, but the systems such as supervising, monitoring and statistics are not properly active in Kassala.
- In-service training of VMWs has no big differences between Sinnar and Kassala. New knowledge and technology learned from TOT of the “Village Midwife Empowerment Model” will be introduced in to the future in-service training in Kassala.
- The community awareness introduced in Mother Nile Project (MNP) is necessary to support RH activities.
- There are differences on culture, tribes, tradition, and geological environment between Kassala and



Sinnar, and these differences are the constraints against improvement of MCH in Kassala. So the Kassala needs to overcome them based on our own experiences.

- RH Section in Kassala needs some recommendations and advices from TOT facilitators of the Federal level for effective implementation/management of the training.

#### 4) In-service training of VMWs

Time: March 17 – 24, 2011 (8 days including 1 day-off)

Participants: 19 VMWs in Wad El Helew

In-service Training Program:

Day	Contents
Day 1	Pre-test, pre-pregnancy care, Normal pregnancy and complication during pregnancy, STD, HIV/AIDS, delivery plan
Day 2	(Break)
Day 3	Care during pregnancy: ANC
Day 4	Newborn care and examination, newborn resuscitation, normal delivery and complication during delivery, family planning, infection control
Day 5	Infection control
Day 6	Delivery
Day 7	Care during postnatal and complications, HIS, HIS used by VMWs, post-test
Day 8	Health education for community people, how to check blood pressure, replacement of VMW kit, course evaluation and allocation of VMWs to health facilities

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

Table 2.5.19 summarizes the results and lessons on technology transfer to the counterparts in the Health Cluster during the preparation phase.

**Table 2.5.19: Summary of Technology Transfer in the Health Cluster**

Period	Activity	Method	Results and Lessons
December 2010	Situation analysis and planning in Action Plan Workshop	Workshop	<ul style="list-style-type: none"> <li>• Ownership was enhanced through the situation analysis and discussions planning. For example, the counterpart offered to be a presenter in the workshop.</li> </ul>
February 2011	Study Tour to Sinnar	Study tour	<ul style="list-style-type: none"> <li>• The counterparts learned from the observation of others' activities and exchange of their experiences/opinions. They could obtain images how to conduct appropriate activities in Kassala.</li> </ul>
January to February 2011	Preparation and management of TOT for in-service training of VMWs	Preparation of training	<ul style="list-style-type: none"> <li>• Since the communication on how Mother Nile Project and the Kassala counterparts need to cooperate to conduct TOT is not sufficient, TOT became a big burden on the counterparts. The roles of the counterparts in TOT should have been made clear beforehand.</li> <li>• There was no session on training management for the counterparts. Apart from TOT, the lecture of the training management was needed.</li> <li>• The session on the federal facilitators' feedback from TOT and recommendations for future in-service training of VMWs in Kassala should have been included in TOT.</li> <li>• Due to the Mother Nile Project's visit to Kassala during TOT, the counterparts could not concentrate on TOT. It would be better if the visit was arranged in another time.</li> </ul>

Period	Activity	Method	Results and Lessons
February 2011	TOT of HVs for in-service training of VMWs	Training	<ul style="list-style-type: none"> <li>• Sixteen HVs out of 19 were attended TOT. Six HVs were certified as facilitators and three HVs as assistant facilitators for the implementation phase.</li> </ul>
February 2011	Discussion on PDM and indicators on the Project	Discussion	<ul style="list-style-type: none"> <li>• The whole project design and indicators were discussed. They learned what was PDM and how to select indicators. They have recognized what they have to do for the activities.</li> </ul>
March 2011	Report writing and presentation on the study tour and TOT	Report writing and presentation	<ul style="list-style-type: none"> <li>• There is a need for substantial improvement in reporting and recording, which are indispensable for proper management. The counterparts were encouraged to carry out these tasks as part of their routine work. Reporting and recording by the counterparts should be continued in the implementation phase.</li> </ul>
March 2011	In-service training of VMWs	Training	<ul style="list-style-type: none"> <li>• Training management is one of responsibilities of the counterparts: training coordinators prepare and facilitators implement it. Unfortunately there was no time to discuss the quality of training with training coordinators and facilitators so far.</li> <li>• Both RH coordinator and a training coordinator have no idea of PDCA (Plan-Do-Check-Act) cycle, but have conducted training without consideration of quality of training and training results.</li> <li>• The training management report was made for recording the training this time. However, the challenging is for the counterparts themselves to learn the idea that the lessons learned should be reflected into the next training management.</li> <li>• The counterparts started the data management of VMWs to conduct supportive supervision in future. The field activities which will be conducted by the participants (VMWs) need to be followed up in the implementation phase.</li> <li>• The challenge for the facilitators is the same as the training coordinators, that the lessons learned should be reflected into the contents and quality of the next training.</li> </ul>

## 2.6 Vocation Training Cluster

### 2.6.1 Situation Analysis

#### (1) Present Situation of the Labor Market of the State

##### 1) Overview of the State Economy<sup>20</sup>

The state economy is largely based on traditional, natural resource related activities, e.g., agriculture and livestock production. The ability to use natural pastures, as well as the pursuit of other agricultural and livestock-based activities, has been severely curtailed by armed conflict in the region. In the 1990s many farmers and herders abandoned their homelands and moved to urban areas. In recent years, in addition to threat posed by land mines, drought has further reduced the size of grazing land and rain-fed agriculture, particularly in the eastern part of the state. Environmental factors have, therefore, compounded the effects of violence and caused several conflicts over access to land and water.

Among the IDP and refugee populations, activities rooted in the informal sector predominate. Migrants frequently find work in food processing, handicrafts, tea and coffee vending and household servant positions. Lacking specific skills and facing severe competition for employment, the level of poverty and food insecurity has risen sharply among IDPs in recent years.

##### 2) Population, Labor Force and Employment

According to the 2008 population census, the total population of Kassala State is approximately 1.77 million, nearly three quarters of which live in non-urban areas and 45% are women (Table 2.6.1)<sup>21</sup>. Some 54% of the total population or 950,000 people are the productive (“economically active”) age group as defined by the Central Bank of Sudan (15-59 years of age) making up the labor force.

**Table 2.6.1: Kassala State - Population by Age group, Mode of Living and Sex**

Category	Total			Urban			Rural			Nomad		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>Total Pop (1,000)</b>	1,770	970	800	462	234	228	1,112	617	495	196	119	77
<b>Mode (%)</b>	100.0	--	--	26.1	--	--	62.8	--	--	11.1	--	--
<b>Sex (%)</b>	100.0	54.8	45.2	100.0	50.6	49.4	100.0	55.5	44.5	100.0	60.7	39.3
<b>Age group</b>												
00-14 (%)	40.6	41.1	40.0	37.5	38.0	36.9	41.9	42.3	41.3	41.1	41.3	40.9
<b>15-59 (%)</b>	<b>53.9</b>	<b>52.5</b>	<b>55.6</b>	<b>56.6</b>	<b>55.3</b>	<b>57.9</b>	<b>52.7</b>	<b>51.2</b>	<b>54.5</b>	<b>54.9</b>	<b>54.0</b>	<b>56.4</b>
60 + (%)	5.4	6.3	4.4	6.0	6.7	5.2	5.5	6.5	4.3	4.0	4.8	2.7
<b>Total (%)</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Bureau of Statistics, 2008 Population Census (CBS's website <http://www.cbs.gov.sd/> accessed on 3 January 2011).

Total economically active population (including age-groups of 10-14 years old and 60 years old and above) is about 470,000, of which 79% and 5% are employed and unemployed, respectively (Table 2.6.2). Although the unemployment rate is relatively low, the remaining 16% (unknown employment status) could be virtually unemployed or semi-employed. The employment rate of the 15-59 age group (80%) is even lower than that of the 60 + age group (89%).

<sup>20</sup> This section is based largely on UNDP, Kassala State, Situation Analysis, April 2009, pp. 7-8.

<sup>21</sup> The percentage of female population is small, particularly among rural and nomad people. This is conceivably because they do not count female family members for enumeration or they may hide female family members from enumerators.

**Table 2.6.2: Kassala State - Economically Active, Employed and Unemployed Population**

	Total Economically Active	Employed	Unemployed	Unknown
<b>Total</b>	469,507	369,042	23,470	76,995
<b>10 – 14</b>	35,133	16,771	1,293	17,069
<b>15 – 59</b>	393,265	315,768	20,094	57,402
<b>60 and over</b>	41,108	36,503	2,082	2,523
<b>Total (%)</b>	100.0	78.6	5.0	16.4
<b>10 - 14 (%)</b>	100.0	47.7	3.7	48.6
<b>15 - 59 (%)</b>	100.0	80.3	5.1	14.6
<b>60 and over (%)</b>	100.0	88.8	5.1	6.1

Source: Central Bureau of Statistics, 2008 Population Census (CBS's website <http://www.cbs.gov.sd/> accessed on 3 January 2011).

Among the employed, the percentages of “own account workers” are higher than “paid employees” in all age groups (Table 2.6.3). It is also notable that the percentages of unpaid workers working for families and others are high. A similar feature is observed for the unemployed<sup>22</sup>.

**Table 2.6.3: Kassala State - Employment Status of Employed Population**

	Total	Paid Employee	Employer	Own Account Worker	Unpaid Family Worker	Unpaid Working for Others	Not stated
<b>Total</b>	369,042	105,815	38,014	123,315	44,023	1,266	56,609
<b>10 - 14</b>	16,771	2,991	663	3,905	4,559	162	4,490
<b>15 - 59</b>	315,768	94,977	31,878	106,776	35,090	997	46,051
<b>60 and over</b>	36,503	7,846	5,473	12,635	4,374	108	6,068
<b>Total (%)</b>	100.0	28.7	10.3	33.4	11.9	0.3	15.3
<b>10 - 14 (%)</b>	100.0	17.8	4.0	23.3	27.2	1.0	26.8
<b>15 - 59 (%)</b>	100.0	30.1	10.1	33.8	11.1	0.3	14.6
<b>60 and over (%)</b>	100.0	21.5	15.0	34.6	12.0	0.3	16.6

Source: Central Bureau of Statistics, 2008 Population Census (CBS's website <http://www.cbs.gov.sd/> accessed on 3 January 2011).

Some 17,000 are employees of the State Government and localities in 2008<sup>23</sup>, that is, about 16% of the paid employees are in the public sector. Data on employment by industry is not available, but from the above accounts, a large number of the working population of the state is presumably engaged in agriculture and agro-pastoral activities, as well as in the informal sector. It is significant to examine needs for vocational training of those people for better job and income opportunities.

### 3) Needs for Vocational Training

Although training needs have yet to be assessed, it is pointed out there are diverse needs for vocational training by people from different background, e.g., refugees, IDP, ex-combatants and other residents in urban and rural communities. For example, there are about 51,000 refugees in refugee camps operated by UNHCR in Kassala State (Table 2.6.4). Except the Abuda camp, all the camps are wage based, i.e., refugees can obtain employment as agricultural or other paid workers. According to the State Government, there are an estimated 95,000 refugees in the state, i.e., more than 40,000 refugees are living outside the camps. They may also need vocational training for higher incomes.

There are about 2,200 registered ex-combatants in the state, of which 243 are child ex-combatants below 19 years of age (Table 2.6.5). The Northern Sudan D.D.R. Commission suggests that training should focuses on the child ex-combatants for their higher potential to learn and future prospects and is examining the possibility of establishing a training center for them. However, many of them are located in located localities outside Kassala Town, such as West Kassala, Telkuk, Rural Kassala and, therefore,

<sup>22</sup> Central Bureau of Statistics, 2008 Population Census (CBS's website <http://www.cbs.gov.sd/> accessed on 3 January 2011).

<sup>23</sup> Kassala State Ministry of Finance, Economy and Labor Force, Statistical Encyclopedia, p. 16.

training of them would require boarding facilities, in addition to training facilities.

**Table 2.6.4: Number of Refugee Camps and Refugees in Kassala State (2009)**

S/N	Camp	Number of Refugees		
		Female	Male	Total
1	Wad Sherife	8,557	6,492	15,049
2	Shagarab I	5,128	4,751	9,879
3	Shagarab II	2,985	2,762	5,747
4	Shagarab III	2,673	2,245	4,918
5	Abuda	1,430	1,332	2,762
6	Girba	2,866	2,500	5,366
7	Kilo 26	3,851	3,502	7,353
Kassala Total		27,490	23,584	51,074

Source: UNHCR April 2009 verification statistics.

**Table 2.6.5: Ex-combatants and War-affected Communities in Kassala State (2010)**

Classification	Ex-combatants	Child ex-combatants
Eastern Front (EF)	1,390	243
Popular Defense Force (PDF) and Sudan Alliance Forces (SAF)	841	--
<b>Registered ex-combatants total</b>	<b>2,231</b>	<b>243</b>
Popular Defense Force (PDF)	3,000	
Sudan Alliance Forces (SAF)	1,251	
<b>Unregistered ex-combatants total</b>	<b>4,251</b>	
<b>War-affected communities</b>	<b>6,000</b>	

Source: Northern Sudan D.D.R. Commission, Kassala Sector (interview conducted on 30 December 2010).

School dropouts are also a group that may need vocational training for employability, as the state is characterized by a lower primary net enrolment rate and a higher school dropout rate as compared with the national average (Table 2.6.6).

**Table 2.6.6: Kassala State - Education Indicators (2005)**

Indicator	Kassala State	Sudan
Net primary enrolment rate	34.6%	43%
School dropout rate	23.8%	21% (2004)

Sources: UNST and UN Resident Coordinator Office in Sudan, "East Sudan Analysis and Priorities", 2007; and UNDP, "Human Development Report 2007-2008".

Refugees, IDP and ex-combatants may require short-term training to make them employable, while local residents training on traditional skills such as agricultural machinery repair, pump repair, woodwork, carpentry, automobile maintenance, etc. and on skills such as repair of computers and cellular phones to meet newly emerging demands in the labor market. There is also a need for vocational training for women on particular subjects such as food processing and dressmaking.

#### 4) Existing Technical Education and Vocational Training

In Kassala State, formal technical education and vocational training are only available in Kassala Town, New Halfa and Girba (Table 2.6.7). All the institutions are under the State Government, except the Girba Vocational Training Center, which belongs to UNHCR and conducts short courses mainly for refugees. The technical schools are mainly under of the State Ministry of Education, while the Kassala Vocational Training Center (KVTC) is under the State Ministry of Finance, Economy and Labor Force. These institutions are typically faced by shortages of funding and equipment necessary for training. There are technical schools in localities other than Kassala and New Halfa, but they are not currently operating due

to lack of funding<sup>24</sup>. There are some mobile training programs assisted by development partners such as EU, Plan Sudan, SRC and GOAL, primarily conducted by KVTC.

**Table 2.6.7: Kassala State - Technical Education and Vocational Training Institutions (2007/2008)**

Institution	Location	Duration	Course/Subject	No. of Students	Responsible
Kassala Technical College	Kassala	3 years	Auto mechanics, general electricity, computers, repair electricity, engines, refrigerators, accounting	400 (2010)	SMoHE
Business School for Boys	Kassala	3 years		277	SMoE
Business School for Girls	Kassala	3 years		334	SMoE
Industrial School for Boys	Kassala	3 years	Electricity, mechanics, vehicles, construction, carpentry, canal building	278	SMoE
Artisan School for Boys	Kassala	2 years	Electricity, vehicles, carpentry	76	SMoE
Artisan School for Girls	Kassala	2 years	Electricity, vehicles	64	SMoE
Technical School for Boys	New Halfa	3 years	Electricity, mechanics, vehicles	118	SMoE
Agricultural School for Boys	New Halfa	3 years		176	SMoE
Artisan School for Boys	New Halfa	1 year	Electricity, vehicles, welding, carpentry	70	SMoE
Artisan School for Girls	New Halfa	1 year	Electricity, vehicles, welding	37	SMoE
Vocational Training Center	Kassala	3 years	Basics, auto mechanics, diesel mechanics, machine shop	352 (2009/10)	SMoF
Vocational Training Center	Girba	3 months (2 months for car driving)	Car mechanics, auto electricity, metal works, construction, car driving, carpentry, computer, tailoring, handicrafts, food processing	--	UNHCR
Children's Model Village	Kassala	3 years (?)	Auto mechanics, general electricity, welding and fitting	20	SMoSCA

Note: SMoHE = State Ministry of Higher Education and Scientific Research; SMoE = State Ministry of Education; SMoF = State Ministry of Finance, Economy and Labor Force; SMoSCA = State Ministry of Social and Cultural Affairs.

Sources: Kassala State Ministry of Education, Education Planning Department, Year 2008/2009; and respective institutions.

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

### 1) Government Policy and Development Strategies

The SMoF is primarily responsible for the provision of vocational training in the state. According to the policy paper presented by SMoF at a workshop organized by UNDP in December 2010<sup>25</sup>, the main policy for vocational training is to address human resources development and contribute to the alleviation of poverty and unemployment in the state. Vocational training should be linked to a future vision to meet growing needs and keep up with the overall strategy of the state and the market economy. The objectives of the vision are to:

- Define the goals of vocational training;
- Establish the State Supreme Council for Vocational Training and Apprenticeship;
- Review the admission requirements to make vocational training more flexible and able to respond to social and economic needs, taking into account geographical distribution and sex balance;
- Activate mobile training according to supply and demand;
- Measure and evaluate outcomes in relation to goals and indicative plans; and
- Focus on a system of social mobilization and priorities emerging from local communities.

In the admission, the following points should be taken into consideration.

- Provision of training opportunities for handicaps, the poor and women-headed households.

<sup>24</sup> Information obtained through an interview with Ms. Fathia Darwish, Department of Educational Planning, State Ministry of Education, on 2 December 2010.

<sup>25</sup> Musa Osheik, Director General, SMoF, et al., "General Policies and Directives for the Vocational Training Center: Vision and Organization of Training inside and outside of the Center", paper presented at the Workshop on the Future Vision for the Kassala Vocational Training Center, organized by UNDP Kassala Sub-Office on 12 December 2010.

- b) Qualitative balance within the admission policies.
- c) Allocation of seats for children of rural and remote areas and equal opportunities to localities.
- d) Adoption of accelerated training and mobile training through courses targeted at technical improvement according to the economical feasibility standards.

SMoF's above-mentioned policy paper suggests that the management of vocational training be characterized by effective creativity, flexibility and transparency and involve community leaders, NGOs and technical unions in the State Supreme Council for Vocational Training and Apprenticeship.

## 2) Institutional Framework

The SMoF has the primary responsibility for the provision of vocational training in the state, shifted from the Ministry of Local Government and Administration in 2010. There are supposed to be individual vocational training centers under the supervision of the unit in charge of vocational training within the Ministry. At present, however, the head of the unit, i.e., the Director of Vocational Training, is concurrently the Director of KVTC and no regular staff has been deployed in the department. GVTC is still under the jurisdiction of UNHCR and a plan for its transfer to the State Government has not been defined.

## 3) Work Plan and Budget

The work plan and budget is not available for SMoF's Department of Vocational Training, but the annual work plan of KVTC for 2010 is as shown in the box below<sup>26</sup>. The rehabilitation of existing workshops and construction of new buildings were completed by UNDP's assistance in October 2010.

**Goals:**

- 1. Establish training standards to create job opportunities.
- 2. Restore knowledge and skills that will affect positively the level of per capita income and GNP.
- 3. Rehabilitate cadres to participate in the on-going development of their mandate.

**Means:**

- 1. Rehabilitation of existing workshops and construction of three workshops, offices, toilets and a separate hall (classroom) for women activities
- 2. Provision of assistance to beneficiaries
- 3. Acquisition of external assistance from NGOs and the private sector

**Planned projects:**

- A. Basic (morning and afternoon) training courses
  - 1. Welding and fitting
  - 2. Diesel mechanics
  - 3. Auto mechanics
- B. Accelerated courses
- C. Upgrading courses

The total budget for 2010 was SDG 434,000, of which SDG 354,000 for basic training courses was to be provided by the State Government and raised by self-help (e.g., income from production and auto repair) (Table 2.6.8). However, funds actually obtained from the government were SDG 36,000, i.e., SDG 3,000 per month. The budget allocated for an upgrading course was not disbursed, either. It was the only course that was planned but did not take place in 2010. Other short courses were financed by NGOs, the Canadian Government (through Plan Sudan) and UNDP.

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<sup>26</sup> Kassala State Ministry of Local Government and Administration, Vocational Training Center Plan for the Year 2010.

**Table 2.6.8: Kassala Vocational Training Center – Budget for 2010**

Category	Budget (SDG)	Funding Source	Beneficiaries
Basic courses	354,000	Government and self-help	Young school dropouts
Accelerated courses	60,000	Plan Sudan/Canada and UNDP	Young school dropouts, refugees
Upgrading courses	20,000	GOAL, Plan Sudan/Canada, UNDP and Government	Supervisors, people's committee, SWC staff, government drivers, etc.
	434,000		

Source: Kassala State Ministry of Local Government and Administration, Vocational Training Center Plan for the Year 2010.

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

#### **1) Recovery of Livelihoods and Sustainable Natural Resource Management Project (UNDP)<sup>27</sup>**

The project is being implemented for the period from March 2009 to April 2011. Its overall objective is to facilitate the development and application of innovative approaches to diversify and improve community livelihoods in Kassala in a sustainable manner. To achieve this objective, the project focus on six outputs with respect to: a) sustainable natural resource management; b) vocational and skills training; c) income enhancement of farmers and pastoralists; d) expansion of microfinance; e) private sector and small and medium enterprises development; and f) capacity strengthening of NGOs and CBOs (including economic cooperatives).

A major activity of the vocational training component is the provision of support to KVTC. A series of discussions with the Minister of Local Government and Administration and KVTC in October 2008 resulted in the renovation of the two existing buildings and construction of a new building with three workshops, an office building with a computer lab, a building for women activities such as food processing and tailoring and toilets. Equipment has been procured for the old workshops. The total assistance was estimated at \$477,000 for renovation and construction and \$423,000 for equipment. The project also plans to review training materials, course length, criteria for selecting students and potential for small income generation projects. Other activities may include the provision of workshops for construction, brick-laying and carpentry, as well as for newer technologies such as repair of mobile phones, the development of stationary VTC in other parts of the state and mobile training to address rural vocational training needs, especially of women.

#### **2) Eastern Recovery and Development Programme (EU)<sup>28</sup>**

The program is being implemented for the period from July 2009 to May 2011, including a six-month inception phase. The overall objective ERDP is to enhance the productive capacity of rural poor and vulnerable households and equip women with a capacity to compete in the local job market in order to reduce vulnerability. Encompassing the three states of Kassala, Gedaref and Red Sea, ERDP focuses its activities on: a) agriculture; b) income generating activities (IGAs); c) livestock/animal resources; d) vocational training; e) drinking water; and f) capacity building.

In the vocational training component, the program provides furniture, equipment and tools to 16 Women Development Centers (WDCs), build two centers and offer training on food processing, handicrafts and IGA to 5,000 women. ERDP also conducts mobile vocational training on village water committee development, fitter pumps, pottery, saddles, generator sets for water station and women home economics in four localities, i.e., Telkuk, Hamshkoreib, North Delta and Rural Kassala.

<sup>27</sup> UNDP, Recovery of Livelihoods and Sustainable Natural Resource Management Project: Project Document, May 2009; and UNDP, Kassala Vocational Training Centre Current Situation and Future Needs, 23rd June 2010.

<sup>28</sup> Eastern Recovery and Development Programme (ERDP), Provision of Technical Assistance for the Implementation and Management of the ERDP, Inception Report/Progress Report, No. 1, July 2009 – December 2009, March 2010; and an interview with Mr. Willy van Kempen conducted by JICA Sudan Office on 22 June 2010.



### **3) Self-Reliance Strategy for Refugees in East Sudan (UNHCR)<sup>29</sup>**

UNHCR has been implementing the strategy in two phases, i.e., Phase I for March – December 2009 (as a transition period) and Phase II for January 2010 – December 2012. The strategy aims at handing over responsibility for social services to appropriate line ministries and incorporating refugees into UNDP's economic recovery and livelihood program in the three-year timeframe. Its overall objective is to induce sustainable improvement in income of refugees and relevant hosting communities in eastern Sudan through: a) capacity building of self-reliance groups; b) microfinance; c) facilitation of access to diversified means of production (agriculture, livestock, forest and skills/vocational training); d) reduction in household expenses; and e) addressing legal and procedural impediments. The total budget for the two phases is approximately US\$10 million.

To facilitate refugees' access to job opportunities, UNHCR provides vocational and skills training in partnership with SRC. Skills training is conducted on food processing (for women), basic tailoring (ditto), handicrafts (ditto) and auto mechanics (for men) at WDCs within camps. Computer training is provided to men and women in all camps via a mobile clinic. Vocational training is provided at GVTC, including professional-level tailoring for women and computer courses for men and women.

### **4) Project for Strengthening Vocational Training in the Republic of Sudan**

The JICA-assisted technical cooperation project is being implemented for the three-year period from January 2011 to December 2013 for the purpose of strengthening SCVTA's supervising capacity for vocational training based on the needs of the labor market. The project is based on Khartoum but expected to support capacity development of all the vocational training centers under SCVTA and other vocational training providers in North Sudan including vocational training centers in Kassala State. Therefore, it is necessary to discuss with the project the contents and methods of collaboration at an early stage of the implementation phase.

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

##### **1) Department of Vocational Training, Ministry of Finance, Economy and Labor Force**

The responsibility for vocational training was transferred to the State Ministry of Finance, Economy and Labor Force from the Ministry of Local Government and Administration in 2010. The Department of Vocational Training is a unit in charge of vocational training. The head of the unit, i.e., the Director of Vocational Training, is concurrently the Director of KVTC and no regular staff has been deployed in the Department. There is a need to strengthen the Department in the long run so that it would be able to formulate a long-term strategic plan and budget, monitor the implementation, feedback the findings into the next planning cycle for improvement and, finally, evaluate the outcomes and impacts.

##### **2) Kassala Vocational Training Center (KVTC)**

The first vocational training center in Sudan was founded in Khartoum in 1957 with the assistance of UN and ILO. KVTC was established by GTZ as the Kassala Craftsman Training Center in 1992. After GTZ's cooperation completed in 1997, it was renamed KVTC in 2000. As of January 2011, KVTC has 24 staff members, of which 20 are technical staff (18 instructors and 2 technicians). Regular training courses offered in 2010/2011 are: basics (for all the first-year students), diesel mechanics, auto mechanics and machine shop (including metalwork and machine tool operation) training. KVTC also provides short courses of two kinds; accelerated courses (for technicians who want to improve their skills and knowledge) and upgrading courses (for managers, committee leaders, government staff, etc.). KVTC's infrastructure (e.g., workshops, classrooms, offices and toilets) and equipment have been substantially improved with the assistance of UNDP since 2009, as mentioned above.

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<sup>29</sup> UNHCR, Self-Reliance Strategy for Refugees in East Sudan, Final Report, February 2009.

KVTC is scheduled to start new courses in September 2011 and currently in the process of recruiting additional instructors and procuring equipment and tools for the new courses with JICA's assistance. The technical staff (instructors and technicians) will be increased by 17, from 20 in 2010 to 37 upon the completion of recruitment in 2012 (Table 2.6.9).

**Table 2.6.9: Kassala Vocational Training Center - Staff Deployment and Student Enrolment Plan**

	Course	Number of Instructors to be recruited			Number of Students
		2011	2012	Total	
New	Women Activities	3	1	4	150 <sup>1)</sup>
	General Electricity	2	1	3	40
	Car Electricity	2	1	3	40
	Welding	2	1	3	30
Existing	Diesel Mechanics	0	0	0	40
	Auto Mechanics	0	0	0	40
	Machine Shop	1	0	1	10 <sup>2)</sup>
	Basic	1	0	1	200 <sup>3)</sup>
	Theoretical	1	1	2	--
	Total	12	5	17	--

Notes: 1) Short courses only (25 each for dressmaking and food processing courses and three batches a year for respective courses).  
2) Morning class students only. Other numbers are the sum of morning and afternoon class students.  
3) First-year students only. They are divided to specific courses in the second and third years.

Major problems facing KVTC are: a) limited budgets vis-à-vis expensiveness of vocational training; b) training contents and methods not keeping up with innovations in industry and modern technology; c) limited opportunities for technical and managerial training of the staff; d) curricula and training programs that need to be updated and developed; e) lack of some sections and programs relevant to training; and f) no follow-up for the graduates and limited employment opportunities. The budget deficit is particularly critical, the deficit levels of 60-70% in 2003-2010 (Table 2.6.10), which has led to deterioration of institutional, physical and technical capacity of KVTC.

**Table 2.6.10: Kassala Vocational Training Center – Budget Deficits in 2003-2010**

(Unit: Dinar up to 2006 and SDG afterwards)

Year	Approved budget	Actual funds	Revenues (Student Fees)	Other revenues	Deficit	Deficit (%)
2003	5,101,000	1,120,000	1,120,000		3,981,000	60
2004	5,600,000	1,657,058	1,353,500		3,942,942	70
2005	5,200,000	3,120,563	1,472,000		2,079,437	40
2006	8,104,000	3,795,724	1,495,000		4,408,276	54
2007	100,000	37,472	22,600		62,528	63
2008	108,000	35,469	23,050		72,531	67
2009	77,750	30,000	30,000	10,000	47,750	61
2010	81,650	36,000	--	--	45,650	56

Source: Mubarak Abdel Rahman, Director General, KVTC, et al. "Training Center in the State – Mobility and Experience", paper presented at the Workshop on the Future Vision for the Kassala Vocational Training Center, organized by UNDP Kassala Sub-Office on 12 December 2010.

### Capacity Assessment of KVTC

The JICA team has conducted a one-day participatory workshop for capacity assessment of KVTC on 6 December 2010<sup>30</sup>. Its objectives are: a) To have common understanding of the mission and desired services of KVTC; b) To conduct participatory capacity assessment of KVTC; and c) To make a 3-year

<sup>30</sup> For details, see State Government of Kassala and JICA, Capacity Development Project for the Provision of Services for Basic Human Needs (CD-BHN) in Kassala, the Republic of Sudan (Preparation Phase), "Participatory Workshop for Capacity Assessment of Kassala Vocational Training Center (VTC) Summary Report", December 2010.

action plan to improve the capacity of KVTC. Although a 3-year action plan was not formulated due to time constraints, KVTC's mission and desired services were discussed and capacity assessed in a participatory manner. The most critical capacity that requires strengthening is planning, or PDCA, capacity in core capacity, technical knowledge and skills in technical capacity and policy and budget in enabling environment (Table 2.6.11).

**Table 2.6.11: Results of Capacity Assessment of Kassala Vocational Training Center (Summary)**

	Elements of capacity	Score	Reasons
1. Core Capacity	- Long term (5-year) strategic planning	0	• No strategic plan
	- Annual planning	1	• No staff participation
	- Leadership	1, 3	• Weak performance; failed targets • Cannot provide needed services • No participation in decision-making, sometimes no transparency • Despite the poor environment, the Director does his best.
	- Communication with	4	
	1) management	5	• Annual and informal meetings
	2) colleagues	5	• No regular meetings, but often meet committees, unions, NGOs and workshop owners
	3) trainees	5	
	4) communities	5	
	5) the private sector	1	• Very few
	- Public relations	0	• No public relations department in VTC; no pamphlet on VTC
	- Teamwork	5	
	- Motivation of staff	5	• Willingness to work for VTC is high.
	- Relationship with	3	• Official courses are not good; TOT is not good. • Supervision, inspection and evaluation are OK. • Curricula are OK.
1) Federal (SCVTA)			
2) SMoF	1	• Budget approved: SDG 100,000/year, expected: SDG 72,000/year, and actual: SDG 36,000/year • When VTC was under the Ministry of Local Government, the relation was good. SMoF does not see VTC as a special dept.	
- Record keeping	1	• Only number of trainees, but no follow-up	
- Experience accumulation	0	• No experience sharing	
- Plan – Training – Reflect – (feedback) – Plan	0	• No plan-do-see cycle	
2. Technical Capacity	- Computer technology	0	• No PC at VTC
	- Skill to use fine tools	4	• According to budget, the instructors can do their jobs.
	- Computerized tools	1	• The number of tools is not enough for increased trainees.
	- Technical knowledge, general knowledge for good workers	3	• Individual improvement (self efforts)
	- Technical English	0	• Absence of TOT • Pool of technical and academic knowledge (50 --> 0) • No improvement since 1997 (when GTZ left)
	- Technical skills	3	• Instructors have a background of GTZ courses.
		1	• Beginners (newly recruited instructors) have poor skills.
	- Teaching techniques including Plan-Do-Check	3	• Techniques are good, but mediators and guidance are not available.
	- Curriculum as a plan	5	• Demand for training is high, so VT is accepted.
- Teachers - theory	5		
- Instructors - practice			
3. Enabling environment	- Policy	1	• Not much awareness of importance of VT among federal leaders. • Good infrastructure, good federal policy and awareness have attracted UNDP and JICA.
		4	
	- Regulations/legal issues/laws	5	• No problem • Trainee fees are decided by the Assembly; appropriate level.
	- Budget	1	• VT is very expensive (a trainee costs SDG 1,500/year, while he pays fees of SDG 150/year). The government cannot provide all

	Elements of capacity	Score	Reasons
			budgets; needs donor support. • In Europe, private companies pay for VT, but not in Sudan.
	- Cultural behavior/factors	2	• Training mainly for males • VTC trainees are considered school failures/dropouts. • It is accepted that women come to VTC only in cities.

Source: Elaborated from the results of the Participatory Workshop for Capacity Assessment of Kassala Vocational Training Center (VTC) conducted jointly by the JICA CD-BHN Kassala Team on 6 December 2010.

Priority actions based on the capacity assessment are as follows.

- |   |
|---|
| <p>Action 1: Technical English knowledge for all staff<br/> Action 2: Computer + software training + record keeping<br/> Action 3: Updating instructors' knowledge (TOT)<br/> Action 4: Improving skills of beginner instructors<br/> Action 5: Procurement of enough tools<br/> Action 6: Participatory planning<br/> Action 7: Plan-Do-Check-Act (PDCA) cycle<br/> Action 8: Communication with the private sector<br/> Action 9: Improvement of public relations<br/> Action 10: Budget increase</p> |
|---|

### 3) Girba Vocational Training Center (GVTC)

SRC began training refugees in 2002 on welding and construction with their own funds<sup>31</sup>. UNHCR started funding in late 2008. Construction, welding and electricity were chosen because they are quick, feasible and linked to use in people's homes. The training courses conducted by GVTC are all short courses for three months, except the car driving course for two months. The total participants in GVTC's courses were 472 in 2009 (Table 2.6.12), from refugee camps in eastern Sudan. The participants are provided with accommodation, meals, training materials, tools and allowances (SDG 100/month for transport and personal use) during the courses and SMOE's technical education certificates and additional materials and tools for starting up IGAs upon completion. UNHCR also provides post-graduation services, e.g., provision of microfinance and placement of practical training.

**Table 2.6.12: Girba Vocational Training Center - Training Courses conducted in 2009**

Courses	No. of participants		Total	Location
	Male	Female		
Car Mechanics	42	0	40	Girba VTC
Auto Electricity	42	-	40	Girba VTC
Metal Works	40	-	40	Girba VTC
Construction	40	-	40	Girba VTC
Car Driving	38	2	40	Girba VTC
Furniture Making (Carpentry)	40	-	40	Girba VTC
Advance Tailoring	-	40	40	Girba VTC
Computer Literacy	150	150	300	Women Development Centers
Sewing (Primary Tailoring)	-	120	120	Women Development Centers
Handicrafts	-	40	40	Women Development Centers
Food Processing		120	120	Women Development Centers
<b>Total</b>	<b>388</b>	<b>472*</b>	<b>860</b>	

Note\*): The total shown in SRC's report is "392".

<sup>31</sup> UNHCR, op. cit., pp. 20-21.

Two instructors are deployed in each course, one with a degree and another with practical experience in the field. The total number of instructors is estimated to be 20 or more. They are appointed by the General Administration of Vocational Training of SCR in Khartoum and, if no suitable instructor is found, SRC will recruit someone from Kassala town or elsewhere.

Issues for further development include: a) expansion of the capacity (training facilities, equipment, dormitories and instructors) to meet the growing demand from refugee camps and host communities; b) need for workshops where the graduates can undergo practical training; and c) increase of WDCs and provision of access to the Internet to WDCs so that they can function as information centers.

#### **4) Mobile Vocational Training**

Mobile vocational training has been implemented by the Department of Mobile Training, KVTC, in almost all the localities of the state with the assistance of various development partners as mentioned above. The total number of courses was 37 on 7 subjects, i.e., food processing, village water committees, generator sets, pottery, brick laying, fitter pumps and household electricity, between mid-2006 and mid-2010<sup>32</sup>. Mobile training is ideal in that it can provide services to the people and areas with limited access to the technical and vocational training available in Kassala, New Halfa and Girba. One of the issues concerning mobile training is to secure sustainable means of transport (including vehicles and fuels). Another is to strengthen the technical capacity of the training providers (instructors).

#### **2.6.2 Plan for the Implementation Phase**

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

There is a need to strengthen the Department of Vocational Training in the State Ministry of Finance, Economy and Labor Force, shifted from the Ministry of Local Government and Administration in 2010. However, the Director is concurrently the Director of KVTC and no regular staff has been deployed in the department. There is a more urgent need to reinforce KVTC's institutional, physical and technical capacity, which has been deteriorated since the completion of GTZ's technical cooperation in 1997.

The focus on the capacity development of KVTC is deemed to contribute to improved provision of vocational training in the state as a whole. The proposed formulation of a statewide 5-year strategic plan for vocational training is also desirable and timely, since the establishment of the State Council for Vocational Training and Apprenticeship is underway<sup>33</sup>. GVTC is still under the jurisdiction of UNHCR and a plan for its transfer to the State Government has not been defined. For the meantime, KVTC could support GVTC's training activities through TOT and other means. An action plan for GVTC's capacity development may be included in the strategic plan for vocational training in the state, if necessary.

##### **(2) Plan for the Implementation Phase**

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

The PDM shown in Table 2.6.13 is proposed as a framework of cooperation in the vocational training cluster, based on the above-mentioned strategy for improving vocational training in the state, while focusing on the capacity development of KVTC.

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<sup>32</sup> Information obtained from Kassala Vocational Training Center in July 2010.

<sup>33</sup> Ministry of Finance, Economy and Labor Force, Kassala Vocational Training Center, in collaboration with UNDP, "State Council for Vocational Training and Apprenticeship", January 2011.

**Table 2.6.13: Project Design Matrix (PDM) for the Vocational Training Cluster**

<b>Output and Activities</b>	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>
<i>Output 5. Service provision for Vocational Training is improved</i>		
5.1 Strengthen capacity of Kassala Vocational Training Center (KVTC)	1) Number of students of regular courses (352→600) 2) Number of participants in short course (300→400) 3) Score of self-evaluation on capacity of trainers of KVTC (2.5/5→4/5)	1) KVTC and Project records 2) KVTC and Project records 3) KVTC and Project records
5.1.1 Conduct a supplementary survey on the labor market and supplementary needs assessment for vocational training.		
5.1.2 Formulate a 5-year strategic plan for vocational training in Kassala State, including budgets for its implementation and KVTC's roles in improving vocational training services.		
5.1.3 Conduct TOT for KVTC and related training/technical institutes.		
5.1.4 Support new regular (3-year) training courses of KVTC.		
5.1.5 Conduct short courses based on the needs assessment.		
5.1.6 Conduct follow-up surveys and activities for the graduates (including short-course trainees).		
5.1.7 Monitor and support the progress of the strategic plan formulated in 5.1.2.		
	<b>Inputs</b>	<b>Important Assumptions</b>
	<b>Sudan side:</b> 1) Counterpart personnel assignment 2) Necessary facilities and equipment 3) Local costs <b>Japanese side:</b> 1) Experts (Strategic Planning, Curriculum Development / Teaching Materials, and Facilities & Equipment) 2) Equipment	The State Government provides necessary funds for the activities.

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

## 2) Plan for the Pilot Activities

Pilot activities to be carried out in the implementation phase are categorized into: I) Strengthening of 3-year regular courses; and II) Planning and implementation of short courses based on training needs in the state. For both categories, TOT is essential and coordination with the JICA-assisted Project for Strengthening Vocational Training in the Republic of Sudan (January 2011 – December 2013) is highly necessary. The JICA team proposes the following as possible activities, but implementation should be decided based on the needs assessment and through discussions with KVTC and other stakeholders.

### I. Improvement of 3-year Regular Courses

#### A) Improvement of training plans based on the curricula

Training that meets SCVTA's standards is required, but at present KVTC is unable to provide such training due to inadequate equipment and capacity of the instructors. It is necessary to analyze the current situation and formulate a training plan (weekly, monthly and annual) that can overcome the existing weaknesses by identifying their causes. Well-defined plans will also visualize the utilization of facilities and instructors and facilitate the planning of training programs for various target groups.

#### B) Training of Trainers (TOT)

TOT has two categories. One is to improve technical knowledge and skills of the instructors in their specialized fields. Another is to enhance teaching techniques and morals. For example, the introduction of PCs and presentation software enables them to conduct more effective and efficient training. Equally important is to improve communication skills and trainee-centered teaching methods.

### **C) Development of training materials to implement curricula effectively**

- a) Preparation of job sheets for practical exercises (to be carried out in February – March 2011)  
Practical training using a job sheet is new to the instructors. They could not master the method due to time constraints and difficulty operating PCs in the 5-day TOT conducted in early January 2011. It is desirable to learn more about the method and improve their skills in the time between classes.
- b) Development of effective assignments and score sheets for skills test  
It is necessary to prepare as many score sheets as possible based on the job sheets. In addition to subjective grading by observation, the instructors should develop a score sheet that enables them to grade students' performance more objectively, e.g., "whether a student can complete an assignment within the standard time required."
- c) Introduction of textbooks for lectures  
It is necessary to give lectures by using the textbooks developed by SCVTA. The textbooks should be something that can be repeatedly used by the students before and after graduation.
- d) Development of final assignments prior to graduation  
The final assignment prior to graduation should be designed so that a student can utilize all the skills and knowledge he has acquired through the three-year training (e.g., making a wheelbarrow for a student in fitting and welding). The final assignment could be carried out by a group of 5-6 students to reduce the costs of production. The products may be sold to the agricultural component of the Project at a certain price, which would encourage the instructors and students.

### **D) Maintenance and management of equipment to implement curricula effectively**

#### **E) Job placement support**

Job placement support, which is part of the mandate of a vocational training center in Japan, could be partially, if not totally, institutionalized in Sudan (e.g., to organize job fairs). An alumni association could provide job opportunity information to KVTC. Replacement support may require the following.

- a) Prepare a database of establishments
- b) Strengthen partnership with the private sector (e.g., through the accelerated courses)
- c) Prepare a database of graduates
- d) Organize study tours to KVTC and job fairs
- e) Assign placement tasks to a person and establish an information sharing system for the staff

## **II. Planning and Implementation of Short Courses**

Curricula for the following short courses are to be developed based on the needs assessment. It is desirable that courses would bring about incomes to KVTC.

### **A) Accelerated courses (in-service training) for professionals and technicians**

The accelerated courses are conducted for professionals and technicians in service by making the most of KVTC's facilities, equipment and human resources. The courses should be planned so as to contribute to the development of local industries, as well as for convenience of those who feel it difficult to take a leave for training (e.g., 18 hours in total but 1-2 hours per lesson on different days). KVTC is to collect fees to cover the costs of training and provide part of the revenue to the instructors as a reward, which would become an incentive to improve their training skills. The courses would also strengthen KVTC's partnership with the private sector and thus benefit the graduates in the placement. Preparation for the courses should begin with advertisement with a pamphlet or handbill. In preparing short courses, KVTC should take into account: a) Work load of instructors; b) Competition with private training institutions; and c) Arrangements for facilitates and equipment with regular courses.

**B) Employment support courses for ex-combatants and other job seekers**

Each employment support course is conducted for a period of 2-3 months, as it targets at those who are not necessarily ready for immediate employment. Some examples of such courses are welding, plumbing, house wiring, agricultural machinery repair, building, farming implement making plastering, carpentry, brick making and well digging.

**C) Employment support courses for women**

The basic policy for planning the employment support courses for women is the same as that for the courses for job-seeking men proposed in B) above, but it should be designed particularly for women to find jobs or start small businesses upon the completion of training, that is, placement would be part of the course. A possible example is to open a canteen for KVTC students and instructors where women who have obtained training on cooking can work and provide OJT to other women who follow them.

**D) Income generation support courses for refugees**

The courses for refugees are conducted in collaboration with UNHCR by taking advantage of KVTC's strengths. The design could be similar to the courses proposed in B) and C) above in terms of duration, contents, training methods and placement.

**E) Entrepreneur development courses**

The entrepreneur development courses are conducted mainly for the students and graduates of the regular courses but may be combined with other short courses to equip the participants with basic knowledge and skills related to management, such as accounting.

**(3) Planned Inputs****1) Experts**

It is proposed that three experts in charge of "Strategic Planning", "Curriculum Development/Teaching Materials" and "Facilities and Equipment", respectively, be deployed to carry out the activities delineated in "(2) Plan for the implementation Phase" above. Tasks expected for each expert are as follows (See Annex 3.1. for the time and period of assignment). The experts are to collaborate and complement each other to accomplish the project purpose.

- a) Strategic Planning: Supplementary survey on the labor market and supplementary needs assessment for vocational training, formulation of a 5-year strategic plan for vocational training in Kassala State, monitoring of and support to the implementation of the strategic plan, follow-up surveys and activities for the graduates, and stakeholder/donor coordination
- b) Curriculum Development/Teaching Materials: Planning and implementation of TOT for KVTC and related training/technical institutes, support to new regular (3-year) training courses of KVTC, and support to planning and implementation of short courses based on the needs assessment
- c) Facilities and Equipment: Formulation of procurement plans for facilities and equipment, support to the procurement, and support to the effective utilization of facilities and equipment procured

**2) Training in Japan and Other Countries**

Training in Japan and Malaysia is to be provided to the instructors assigned to the regular (3-year) courses on general electricity, car electricity and welding. These courses are scheduled to start in September 2011 and such training is deemed useful for improving the courses. In addition, manager training is to be provided in Japan to strengthen the capacity of KVTC as the center of vocational training



centers in the state. Reasons for proposing instructor training in the Centre for Instructor and Advanced Skill Training, Malaysia, are that the instructors can receive relatively high quality training on necessary subjects at lower costs, that the center is adequately equipped and that the country shares the Islamic background with Sudan. The outlines of the training are as follows (See Annex 3.2 for the overall plan).

- a) Manager Training (JICA's Vocational Training Management Program)  
Targets: Managers (one person/year x 3 years = 3 persons)  
Time of training: October – November  
Duration of training: 5 weeks  
Training institution: JICA Yokohama International Center and Overseas Vocational Training Association (OVTA) in Japan
- b) Instructor Training on Auto Mechanics  
Targets: Instructors (2 persons/year)  
Time of training: October – November 2011  
Duration of training: 2 months  
Training institution: Chiba Automobile Technical School in Japan, or Centre for Instructor and Advanced Skill Training (CIAST) in Malaysia
- c) Instructor Training on Welding and Machining  
Targets: Instructors (2 persons/year)  
Time of training: October – November 2012  
Duration of training: 2 months  
Training institution: Centre for Instructor and Advanced Skill Training (CIAST) in Malaysia
- d) Instructor Training on General Electricity  
Targets: Instructors (2 persons/year)  
Time of training: October – November 2013  
Duration of training: 2 months  
Training institution: Centre for Instructor and Advanced Skill Training (CIAST) in Malaysia

### **3) Equipment**

Equipment and tools necessary for the pilot activities will be procured by taking the following steps.

- A) Take an inventory (number and condition) of the existing equipment and tools for the regular courses.
- B) Add necessary equipment and tools to the procurement list.
- C) For short courses, examine the need for equipment that would meet emerging demand.
- D) Procure equipment immediately necessary for the selected pilot activities in the preparation phase and the first year of the implementation phase and plan for the procurement of more innovative equipment in the second and third years. Therefore, the inventory mentioned in A) above should be taken immediately.

In the process of procurement planning, the following should be taken into account.

- a) Make a complete list of existing equipment that identifies “of use”, “requires repair” and “should be disposed”.
- b) Prepare a list of equipment to be requested, prioritized according to SCVTA's training standards.
- c) Determine the number of equipment to be requested based on local market needs.
- d) Share equipment and tools among the regular courses (6 courses in total in 2011/12) as much as possible.
- e) Examine the costs of accessories, attachments and consumables and availability of spare parts.

In the preparation phase, the JICA team facilitated the procurement of equipment and facilities as shown in Table 2.6.14 (See Annex 3.3.1 for details). Equipment to be procured in the implementation phase is listed in Annex 3.3.2.

**Table 2.6.14: Equipment procured in the Vocational Training Cluster in the Preparation Phase**

Category	Items
<b>Office Furniture</b>	Desks, chairs, wooden cupboards, steel cabinets, TV set, refrigerator, curtains, etc.
<b>IT Equipment</b>	Laptop computers, printers, photocopying machine, projector, digital camera, digital video camera, etc.
<b>Vocational Training Equipment</b>	Equipment for regular courses (general electricity, car electricity and welding) and short courses of women's activities to be started at KVTC in 2011: Electrical motors and equipment, electrical internal connection equipment and tools, electrical winding motors and equipment, engines and spare parts, scanning machine for EFI, welding equipment and tools, sewing machines and tools, ovens, refrigerators, freezers, juice extractors and other cooking tools, tables ad chairs, training media (white boards, flipchart stands, etc.)
<b>Generator</b>	Generator (Output Power: 135 kVA 108 kW)
<b>Pavement</b>	Construction of interlocks and finishing of KVTC's yard

#### 4) Facilities

The policy for facility construction is basically the same as that for equipment procurement. That is, the JICA team, in collaboration with KATC, will take an inventory of the existing facilities, support the construction of facilities immediately necessary for the selected pilot activities in the preparation phase and the first year of the implementation phase, and plan for the construction of more innovative facilities in the second and third years. Facilities to be constructed are listed in Annex 3.4.

#### 5) Budget (Japanese Side)

The budget on the Japanese side is proposed based on the above-mentioned plans for inputs, which is about ¥157 million (US\$1.92 million) in total for the 3-year period (See Annex 3.5 for details). Costs for deploying JICA experts account for nearly 70% of the total budget. This is because they are expected to assist SMoF and KVTC in formulating and implementing the 5-year state strategic plan for vocational training in addition to strengthening KVTC's managerial and technical capacity.

#### 6) Budget (Sudanese Side)

The Sudanese side plans to appropriate SDG 1.75 million (US\$0.66 million) in total for the 3-year period of implementation phase, including allowances for training, travels and workshops, payments for TOT instructors and running costs such as electricity and water charges (See Annex 3.6 for details). SMoF is also supposed to provide KVTC with budgets necessary for the recruitment of 12 instructors in 2011 and 5 instructors in 2012. KVTC has estimated the running costs for a boarding house (including meals) for trainees at SDG 0.4 million per annum and is requesting the funds from SMoF.

### 2.6.3 Preparatory Work for the Implementation Phase

#### (1) Pilot Activities

The JICA team assisted training of the trainers (TOT) of KVTC for the one-week period of 2 - 6 January 2011 as a pilot activity towards the implementation phase (Table 2.6.15)<sup>34</sup>. The objective of the TOT is to

<sup>34</sup> For details, see State Government of Kassala and JICA, Capacity Development Project for the Provision of Services for Basic Human Needs (CD-BHN) in Kassala, the Republic of Sudan (Preparation Phase), "Training of Trainers (TOT) of the Kassala Vocational Training Center: Outline", December 2010.

learn: a) the role of an instructor in vocational training and the importance of teaching material preparation; b) how to prepare a job sheet for practical exercises; and c) how to conduct training based on the job sheet. All the 18 instructors, including the Director, of KVTC participated in the TOT, though one of them only partially attended due to sickness. The instructor was the Director of Curriculum and Technical Guidance, SCVTA, invited from Khartoum. The training activity was effectively facilitated by laptop computers and other IT equipment provided by JICA.

**Table 2.6.15: Major Activities of TOT of Kassala Vocational Training Center**

Date	Activity
2nd January	<ul style="list-style-type: none"> <li>- Introduction and objectives and principles of practical skill training</li> <li>- Role of an instructor in vocational training</li> <li>- Preparation of practical training materials (job sheets)</li> </ul>
3rd January	<ul style="list-style-type: none"> <li>- Preparation of practical training materials (job sheets)</li> <li>- Creation a score sheet for skill tests based on the job sheet</li> </ul>
4th January	<ul style="list-style-type: none"> <li>- Development of a job sheet to be used in own daily instruction</li> <li>- Role-play exercise of practical skill instruction by using the job sheet</li> </ul>
5th – 6th January	<ul style="list-style-type: none"> <li>- Recording of the jobs by a video camera</li> <li>- Preparation of job sheets and score sheets required for instruction</li> <li>- Presentation and discussion of the job sheets and score sheets</li> <li>- Evaluation and summary</li> </ul>

### 1) Reasons for Conducting TOT as a Pilot Activity

Whether vocational training can bring about diverse human resources depends largely on instructors' ability. The present TOT was conducted as a pilot activity mainly because an assessment of the current teaching capacity of KVTC's instructors was essential for strengthening the capacity of KVTC effectively and efficiently in the implementation phase. It is also because there was a request from KVTC, where TOT had not been conducted since a long time ago.

General requirements of a vocational training instructor are: a) ample knowledge and skills in the field; b) appropriate teaching techniques; and c) preferable attitude as an instructor. The improvement of teaching techniques is deemed to be the most effective measure to capacitate training institutions inadequately equipped with tools and facilities like KVTC. If instructors could provide high-quality training by using limited tools and materials, they would effectively improve their training when the institution is fully equipped. In contrast, trainees of an instructor without appropriate teaching techniques would wait for instructions for a longer time. In other words, the provision of equipment would not bring about a significant impact on the quality of training, if the capacity of the instructors were insufficient.

The selection of job sheet preparation as a main theme for the TOT is because KVTC has not established a teaching method using effective teaching materials. Simple jobs such as filing require many important skills like how to hold a file properly. The preparation of job sheets requires an analysis of proper steps and thus leads to the standardization of skills. The instructors would recognize the points of instruction in the process of analyzing the jobs, which would enable them to give exercises more meticulously. They could learn from each other by sharing the prepared job sheets and transfer their skills and knowledge to junior, or newly recruited, instructors.

### 2) Methods of TOT

First, the instructors prepared a job sheet in pairs by watching videotape of changing a tire (5 minutes). They depicted the right steps in the sheet but did not describe the point(s) of each step. The job sheet should include some instructions such as "before jacking up" or "half rotate before jacking up" for the job "remove the nuts". This illustrates their limited experience in using and preparing teaching materials.

Second, the instructors prepared a job sheet after learning the importance of a job sheet and how to

prepare it through the manual provided. They made a rough draft by hand and then completed the job sheet by using a PC. They also prepared a score sheet to evaluate how much each trainee has learned in relation to the steps and points described in the job sheet.

Third, the instructors prepared a job sheet for the theme they had selected by videotaping the job, playing it back repeatedly and following the manual. Themes they selected for the job sheet preparation include steel plate cutting by a hacksaw, plug change, clutch plate dismantling and assembling, electric wiring for lighting and usage of an electric tester.

Finally, the instructors learned how to take a still image from a video camera into a job sheet on a PC.

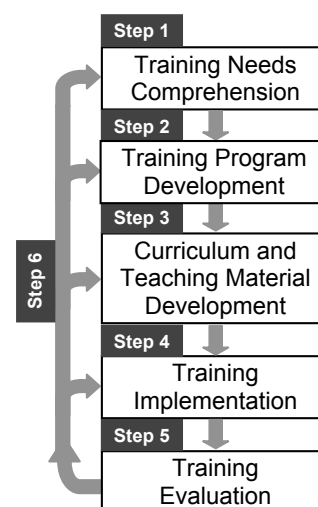
### 3) Evaluation of TOT

While the TOT was highly appreciated, it has revealed the need for continuous training of the instructors. In a questionnaire survey conducted in the evaluation session, 15 out of the 17 respondents answered “very much satisfied” about the TOT overall and “Understood 100%” or “Understood 80%” about the contents. Concerning the teaching materials and the need for a job sheet in the daily training, 16 out of the 17 respondents said “intelligible” or “suitable” and “very necessary” or “necessary”, respectively. Furthermore, 9 instructors indicated that they would like to start preparing a job sheet for their classes immediately. In the following week, the instructor of the machine shop training course was drawing a job sheet for screw cutting on the blackboard. A job sheet prepared by a PC can be saved, shared with other instructors and modified repeatedly and efficiently. Further TOT would be required in order for the KVTC instructors to become more proficient in job sheet preparation by using a PC.

### 4) A Proposal for the Implementation Phase

The above-mentioned three requirements for vocational training instructors can also be seen as the capacity to improve the training environment, to prepare teaching materials and to enhance trainees’ motivation by employment consultation and information provision. An instructor must have patience, ideas and vitality, that is, he/she is expected to have high hopes for his/her trainees’ future, continue to guide them, understand the importance of trainee-centered training and practice it. It is important to supply quality workmen brought up by such instructors to the labor market.

It is proposed that the Training Management Cycle (TMC) as illustrated in Figure 2.6.1 be practiced in the management of KVTC. The cycle consists of: a) need assessment (Step 1); b) planning according to needs of the labor market (Step 2), c) preparation and implementation based on the plan (Steps 3 and 4), d) evaluation (Step 5), and e) improvement of training and the environment based on the evaluation results (Step 6). TMC is a concept and, therefore, one could put it into practice in various forms. TOT would support the management based on TMC. It is necessary for KVTC to establish its own TMC with a view of developing and providing human resources demanded by the private sector. Table 2.6.16 describes the possible management of KVTC by TMC.



**Figure 2.6.1:**  
**Concept Diagram of Training Management Cycle (TMC)**

**Table 2.6.16: Management of Kassala Vocational Training Center by TMC (Proposed)**

Step	Activity
<b>Step 1: Training Needs Comprehension</b>	Identify vocational training needs in accordance with the industrial development plan and strategy of the State Government, as well as the needs of refugees, women, ex-combatants and the unemployed.

Step	Activity
<b>Step 2: Training Program Development</b>	Design training programs based on the needs identified in Step 1, specifying training targets (beneficiaries), goals, implementation periods, the number of trainees to be admitted, venues and budget estimates.
<b>Step 3: Curriculum and Teaching Material Development</b>	Prepare curricula and teaching materials (e.g., job sheets and textbooks) for the training programs. Each curriculum consists of a certain number of subjects, for which the number of hours and goals are defined. Teaching materials are developed or purchased. Assignments of practical training should be designed so that the final products can be sold. Higher sustainability can be expected if the training brings about some revenues to cover the costs of production, since it is unlikely that KVTC's financial situation will improve substantially in the near future.
<b>Step 4: Training Implementation</b>	Implement the training programs. It is necessary to enhance the expertise and teaching skills to provide quality training that would meet various kinds of demand. It is also important to improve the training environment (e.g., workshops, tools and materials, etc.) and the instructors' understanding of the importance of trainees' initiative and motivation.
<b>Step 5: Training Evaluation</b>	Evaluate the training programs. Measure the degree to which the trainees understand the contents through written and oral examinations. For the evaluation of practical training, examine whether the trainees can carry out the assignment, taking proper steps, within the designated time period and safely by using score sheets based on the job sheets. It should also be evaluated from the point of view of the trainees in terms of management, teaching materials, teaching methods and skills, and the time allocated to the training course. Finally evaluate the achievement of the training program against the goals specified in Step 2.
<b>Step 6: Improvement Activity</b>	Carry out activities necessary for improvement based on the evaluation results. Review the subjects, time allocation, teaching materials and teaching methods and modify the training program for future implementation.

It would be possible to supply quality workmen to the labor market through improving the quality of vocational training making use of the TMC concept. It would be the most encouraging to the instructors that many trainees find jobs because of the good reputation of training at KVTC among the employers. Partnership with the private sector is vital to the expansion of employment opportunities for the trainees. It is desirable that KVTC establish an employment support system that can effectively connect trainees with potential employers. Possible activities of employment support include the preparation of a database of establishments in the state, upgrading courses for the private sector, study tours to KVTC and so forth.

## (2) Technology Transfer to the Counterparts

Other technology transfer activities and technical facilitation carried out for KVTC during the preparation phase are as shown in Table 2.6.17.

**Table 2.6.17: Summary of Technology Transfer in the Vocational Training Cluster**

Period	Activity	Method	Results and Lessons
December 2010	Capacity assessment of KVTC	Participatory workshop	All the participants enthusiastically discussed until the end, since this kind of capacity assessment of their own organization was a first-time experience for most of the staff members.
December 2010	Preparation of an outline of the plan for new training courses to be started at KVTC in 2011	Discussion and documentation	Although three regular (3-year) courses and short courses for women had been planned in mid-2010, an implementation plan was not documented. The Director has recognized its usefulness as a result of the assistance for documentation.
December 2010 – February 2011	Assistance to procurement of equipment and tools for the above-mentioned new training courses	Discussion and documentation	The Director led the preparation of specifications and inspection of the equipment and tools procured by JICA. While it has demonstrated his technical capacity, the need to strengthen the capacity of his successors has also become evident.

Period	Activity	Method	Results and Lessons
December 2010	PC training of all the staff of KVTC	Individual training	The majority of the KVTC staff had not received any PC training and some of them had no or little knowledge on computer basics and MS Word. Continuous PC training is necessary.
January 2011	TOT for KVTC instructors on practical training using job sheets (see (2) above)	TOT pilot activity	KVTC has yet to establish a practical training system effectively utilizing teaching materials. It is necessary to define an appropriate workflow and standardize skills by preparing job sheets.
December 2010 – March 2011	Training of KVTC instructors for PC skills (including access and utilization of the Internet)	Individual guidance	The JICA team carried out day-to-day follow-ups of the PC training and TOT conducted in December 2010 and January 2011, respectively. Continuous guidance and training are necessary to improve the instructors' PC skills.
February 2011	Setting of indicators, baseline and target values for the PDM	Discussion and documentation	The task was primarily for formulating the PDM of the implementation phase of the Project. It is significant for the KVTC staff to learn how to set useful indicators and collect data to measure the performance of a long-term strategic plan.
November 2010 – March 2011	Coordination with UNDP in providing and planning support to KVTC	Discussion, coordination and documentation	The introduction of PCs and Internet access has enabled KVTC to communicate with stakeholders more efficiently. IT is an essential tool for KVTC to function as the center of training centers.

## Chapter 3 Recommendations for the Implementation Phase

Since the cluster-specific experiences and lessons learned during the preparation phase and recommendations for the implementation phase have been described in Chapter 2, this chapter discusses general and overall recommendations for the implementation phase of the Project from technical and administrative aspects.

### 3.1 Recommendations on Technical Aspects

In order to make the Project successful, the key elements of the Project shown in Figure 3.1.1 are essential, so it is recommended for Japanese experts and counterparts to keep these elements always in mind when implementing the Project. Each element is explained in detail below.

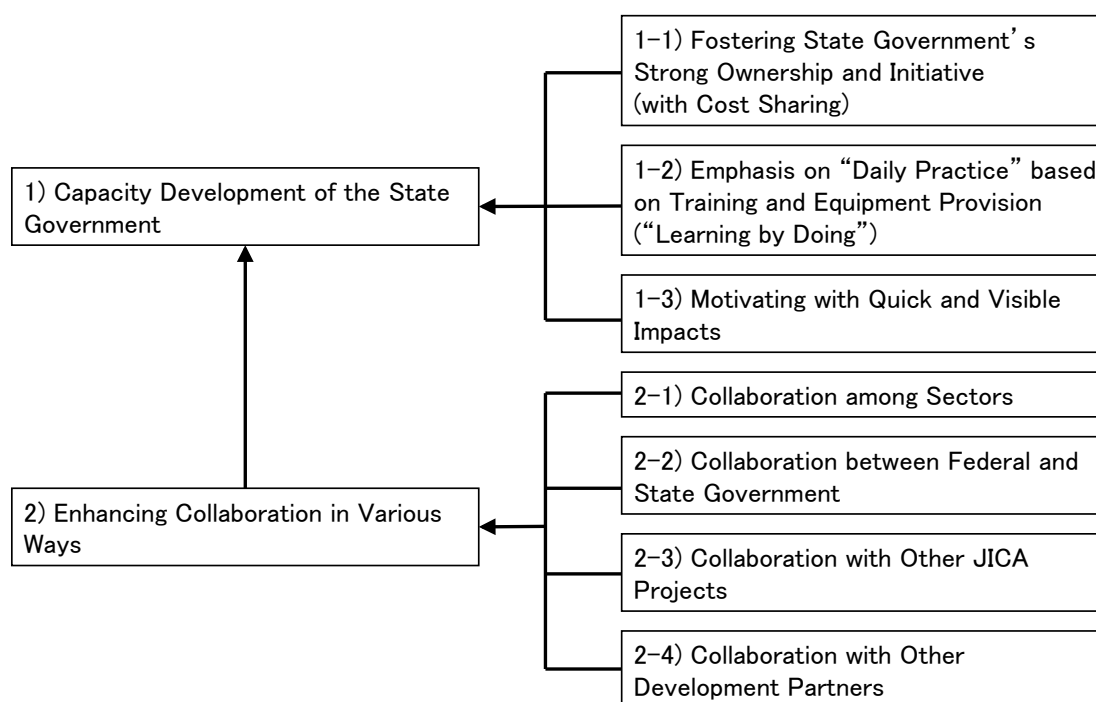


Figure 3.1.1: Key Elements to Make the Project Successful

#### 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, Japanese team has 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. Without their willing participation and strong commitment in the Project, the Project cannot be successful and the capacity development in the government will never happen.

One good indicator for the State Government's strong commitment in the Project is the fact that they have already secured the Local Component budget for the preparation phase of the Project. The State Government has already paid the venue cost for the in-service training of village midwives (VMWs) as

well as the cost for coordination meetings such as JCC meetings. Since the State Government (State Ministry of Finance, in particular) has already committed to secure the Local Component budget for the implementation phase of the Project, it is important to remind them of the importance of cost sharing in the Project, time by time, and keep their promise 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. As Japanese proverb says “If you practice how to swim only on the *tatami* (straw mat), you will never be able to swim in the water”, Japanese technical assistance will be most effective if all Japanese experts focus on helping Sudanese counterparts to utilize the skills and knowledge learned in the training and the equipment provided through their day-to-day work in their workplace or in the field. 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. For example, the tractor provided to the farmers group in the agriculture sector can be arranged to use as an ambulance car for villagers during the rainy season when the road is not easily accessible by ordinary cars. While community awareness activities for rural women are considered as important in the health sector, it will be difficult to continue without proper incentives for the villagers, but if they will be combined with the agriculture and livelihood improvement activities, the villagers may become more willing to work on health issues. If safe water becomes available to the villagers through the activities of the water supply sector, it will also improve the local population’s hygiene, sanitation and health condition, as well as make the health facilities work well with proper water supply.

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 3.1.2. 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).



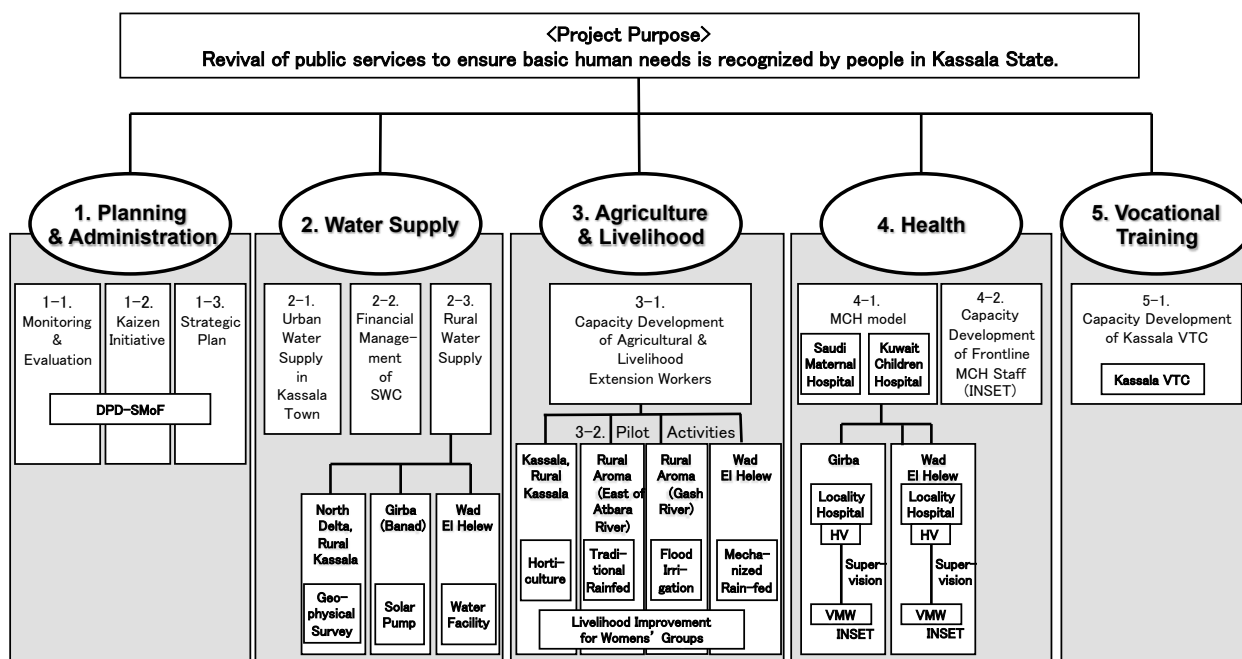


Figure 3.1.2: Pilot Sites for Five Clusters in the Project

### 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.

### 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 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 in 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 DPD is in charge of aid management in the state, it will be useful to help DPD to reactivate the state-level donor coordination mechanism.

In the implementation phase, the Project plans to continue to organize the Joint Coordinating Committee

(JCC) meetings regularly in order to coordinate activities among five clusters, but 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.

### **3.2 Recommendations on Administrative Aspects**

The implementation phase of the Project turns to be a very large-scale project, so it would require extra care for effective and efficient administration and management. During the implementation phase, it is expected that around 20 Japanese experts and around 20 national staff (including a secretary, research assistants and drivers) will work for this Project, divided into five project offices in 1) General Directorate of Economic Planning and Development (DPD) of the State Ministry of Finance, Economic and Labor Force (SMoF), 2) State Water Corporation (SWC), 3) Reproductive Health Unit of the State Ministry of Health (SMoH), 4) Technology Transfer, Extension and Administration (TTEA) of the State Ministry of Agriculture, Forestry and Irrigation (SMoAFI), and 5) Kassala Vocational Training Center (KVTC). Therefore it is important to facilitate smooth communication and coordination between the five offices and to establish a simple (not time-consuming) but effective administration and coordination mechanism to support all members' work in the five clusters.

The following are the lessons learned from the preparation phase and recommendations for the implementation phase on how to ensure effective and efficient administration of the Project.

- It is important to assign an experienced project leader and possibly two project coordinators to manage this kind of large-scale project.
- It is important to develop the capacity of national staff so that they can assist the project coordinators and other members more effectively in implementing the Project.
- Since all of the current project offices are not so spacious with a capacity of 4-6 persons, it is recommended to construct a meeting room with a capacity of 20-30 persons (with some space for storage) in DPD compound, in order to accommodate the weekly meetings of all the project members and staff.
- To facilitate communication and data sharing among the project members and staff working separately in five offices, it is recommended to install ADSL Internet connection in all offices.
- Since Wad El Helew is selected as the common pilot sites for water, agriculture and health sectors, and it takes 2.5 to 4 hours to move from Kassala town to Wad El Helew town, it is important to secure a good office and accommodation in Wad El Helew to work efficiently there. The current guesthouse offered by the locality office is a little bit shabby, and needs much rehabilitation for a longer use.

# Annexes

# List of 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)
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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

**Annex 1:**

**Project Design Matrix (PDM)**

**(attached to the Minutes of Meeting (M/M)**

**signed on March 13, 2011)**

## Project Design Matrix (PDM)

Name of the Project: Capacity Development Project for the Provision of Services for Basic Human Needs (CD-BHN) in Kassala, the Republic of Sudan

Project Period: May 2011 – April 2014 (3 years)

PDM Ver.0.2 (Date: March 13, 2011)

Narrative Summary	Objectively Verifiable Indicators (Baseline Value in 2010 and Target Value in 2013)	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 (from 39% to 50%)</li> <li>2. No. of households who have direct (face-to-face) access to extension services of agriculture and livelihoods (TTEA, Horticulture and Land Use Departments) in Kassala State (from 25,000/year to 50,000/year)</li> <li>3. Reported maternal death rate in Kassala State (from 1,414/100,000 (2006) to 980/100,000 (2013))</li> <li>4. Reported neonatal mortality rate in Kassala State (from 31/1,000 live births (2006) to 21/1,000 live births (2013))</li> <li>5. Percentage of people who obtained jobs within six months after receiving training in Kassala State (from N/A to 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 (from 541claims/month to 100 claims/month)</li> <li>2. Percentage of breakdown among rural water yards (from 25% to 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 (from N/A to 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 (from N/A to 80%)</li> <li>5. Level of satisfaction of employers of the graduates of KVTC with their skill levels at the time of recruitment (from 3/5 to 4/5)</li> <li>6. Level of satisfaction of participants in KVTC's vocational training courses with the contents &amp; quality of the courses (from 3.5/5 to 4.5/5)</li> <li>7. No of practices in Wad El Helew and Girba localities,</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>

	which realize synergy effects by collaboration among sectors of water supply, agriculture & livelihoods, maternal & child health (from 0 to 3)		
<b>Outputs:</b> 1. Kassala State Government's capacity on <b>Development Planning and Management</b> is strengthened.	1.1 Score of self-assessment of organizational capacity (using spider diagram) of DPD and SPC (from 3.4/ to 4.0/5) 1.2 Cases where the situation has been improved through DPD's supportive monitoring (from 0 to 5) 1.3 Cases where the productivity of office work or government service has been improved through <i>Kaizen</i> Initiative (from 0 to 3) 1.4 Evaluation of "The Kassala State Strategic Plan 2012-2016" by external learned persons e.g. universities and research institutions (from N/A (2.6/5 by DPD & SPC staff) to 3.0/5)	1.1 Capacity Assessment Workshop for DPD and SPC staff 1.2 Project record 1.3 Project record 1.4 External Evaluation of "The Kassala State Strategic Plan 2012-2016"	Socio-economic and political situation in Kassala State is not worsened.
2. Kassala State Government's capacity to provide service for <b>Water Supply</b> is strengthened.	2.1 No. of SWC staff who learned the technical manual on operation and maintenance of water distribution network (from 0 to 7) 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) 2.3 No. of SWC staff who learned the manual of management of water fee data (from 0 to 7) 2.4 No. of water users who are registered and properly managed in the water fee data system (from 0 to 35,095) 2.5 Increase in SWC income by reduction of cases of uncollected water fees 2.6 No of rehabilitation works 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)) 2.7 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)) 2.8 No of SWC staff who learned the method of geophysical survey (from 0 to 4) 2.9 No of alternative water resources found by SWC (from 0 to 4) 2.10 SWC's Annual Work Plan for urban & rural water supply	2.1 Training manual, Participants list of the training, Training Record 2.2 Working record 2.3 Management Manual of water fee data, Participants list of the training, Training record 2.4 Database of customers 2.5 Financial statement 2.6 Working record 2.7 Participants list of the training, Training Record 2.8 Survey report, Participants list of the training, Training record 2.9 Survey report 2.10 Annual work plan	

<p>3. Kassala State Government's capacity to provide service for <b>Agriculture and Livelihood</b> is strengthened.</p>	<p>3.1 Percentage of agricultural extension workers in TTEA who recognized improvement of their extension skills (from N/A to 60%)</p> <p>3.2 Percentage of agricultural extension workers in TTEA who recognized improvement of quality of trainings (from N/A to 60% of extension workers who participate in training provided by the Project)</p> <p>3.3 No. of extension materials which are made, revised, and distributed by agricultural extension workers (from 0 to 20 kinds)</p> <p>3.4 No. of farmers newly introduced planting &amp; post-harvesting techniques by agricultural extension workers (from N/A to 790)</p> <p>3.5 No. of women newly introduced livelihood improvement activities/techniques by agricultural extension workers (from N/A to 150 women)</p>	<p>3.1 Baseline and Endline Surveys and Questionnaires in Capacity assessment Workshops)</p> <p>3.2 Baseline and Endline Surveys (as part of Training Evaluation Report)</p> <p>3.3 TTEA records (Material Registration Records)</p> <p>3.4 Project records (Monitoring records)</p> <p>3.5 Project records (Monitoring records)</p>	
<p>4. Kassala State Government's capacity to provide service for <b>Maternal and Child Health</b> is strengthened.</p>	<p>4.1 Percentage of VMWs who passed post-test among VMWs taking in-service training (from N/A to 70%)</p> <p>4.2 Percentage of hospital staff who passed post-test among hospital staff taking training on EmOC (from N/A to 75%)</p> <p>4.3 Percentage of medical equipment engineers who passed post-test among medical engineers taking training on equipment management and maintenance (from N/A to 70%)</p> <p>4.4 Percentage of HVs and AHVs who regularly supervise VMWs in all HVs and AHVs in the pilot areas (from N/A to 80%)</p> <p>4.5 Percentage of referral cases among necessary expectant women and nursing mothers in the pilot areas (from 25% (2011) to 85%)</p> <p>4.6 Percentage of localities which submit monitoring reports on reproductive health (RH) to the State Ministry of Health among all 11 localities (from 65% (2011) to 90%)</p>	<p>4.1 Training record</p> <p>4.2 Training record</p> <p>4.3 Training record</p> <p>4.4 Supervision reports by HV/AHV</p> <p>4.5 Activity report on RH referral system</p> <p>4.6 Monitoring reports on RH</p>	
<p>5. Kassala State Government's capacity to provide service for <b>Vocational Training</b> is strengthened.</p>	<p>5.1 No. of students of regular courses (from 352 to 600)</p> <p>5.2 No. of participants in short courses (from 300 to 400)</p> <p>5.3 Score of self-evaluation on capacity of trainers of KVTC (from 2.5/5 to 4/5)</p>	<p>5.1 KVTC and Project record</p> <p>5.2 KVTC and Project record</p> <p>5.3 KVTC and Project record</p>	



<p><b>Activities:</b> <u>Planning and Administration</u></p> <p>1.1 Strengthen supportive monitoring and feedback functions for the project by General Directorate of Economic Planning and Development (DPD) in State Ministry of Finance, Economics and Labor Force</p> <p>1.2 Strengthen capacity of DPD through participatory bottom-up Kaizen approach</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><b>Inputs from Sudanese side</b></p> <ul style="list-style-type: none"> <li>- Assigning counterpart personnel</li> <li>- Provision of office space for JICA experts</li> <li>- Bearing local costs (Local Component) (for example, salaries and other allowances of government personnel involved; costs for electricity, water and telecommunication relevant to the Project activities)</li> <li>- Provision of part of necessary inputs and equipments for the project activities</li> </ul>	<p><b>Inputs from Japanese side</b></p> <p>【Dispatch of Japanese Experts】</p> <p><u>Planning and Administration</u></p> <p>1) Project Leader / Development Planning and Management 2) Project Coordinator / Administration 3) Expert for Procurement 4) Expert for Construction</p>	<p>Sudanese counterparts of the Project are not shifted frequently.</p> <p>Participants of the trainings provided by the Project continue taking charge of the present work</p>
<p><u>Water Supply</u></p> <p>2.1 Strengthen capacity of operation and maintenance of water supply in Kassala Town</p> <p>2.1.1 Update the inventory of water distribution network in Kassala Town on GIS system.</p> <p>2.1.2 Compile manuals on operation and maintenance of water distribution network in Kassala Town.</p> <p>2.1.3 Coordinate training of SWC staff in collaboration with PWCT on operation and maintenance of water distribution network.</p> <p>2.1.4 Propose an annual work plan for maintaining and renovating water distribution network in Kassala Town.</p> <p>2.1.5 Make policy recommendations on operation and maintenance of urban water supply facilities in Kassala State.</p> <p>2.2 Strengthen capacity of financial management in State Water Corporation (SWC) office</p> <p>2.2.1 Design and build the database of customers in Kassala Town.</p> <p>2.2.2 Compile a manual and train SWC staff on database management on PC.</p> <p>2.2.3 Make policy recommendations on financial management of SWC based on database of customers.</p> <p>2.3 Strengthen capacity of operation and maintenance of rural water supply facilities in Kassala State</p> <p>2.3.1 Collect information on good practices and manuals of operation and maintenance of rural water supply system in Sudan.</p> <p>2.3.2 Compile a manual for appropriate techniques for operation and maintenance of rural water supply facilities in Kassala State.</p> <p>2.3.3 Train SWC staff and establish the maintenance team and system for rural</p>		<p><u>Water Supply</u></p> <p>5) Expert for Urban Water Supply (Pipe Network Management/ Construction Management) 6) Expert for Urban Water Supply (Financial Management) 7) Expert for Rural Water Supply (Operation and Maintenance) 8) Expert for Rural Water Supply (Geophysical Survey)</p> <p><u>Agriculture and Livelihood</u></p> <p>9) Expert for Agricultural Production 10) Expert for Agricultural Marketing 11) Expert for Rural Development / Farmers' organization 12) Expert for Mechanized Agriculture 13) Expert for Water Harvesting 14) Expert for Cooperative</p> <p><u>Health</u></p> <p>15) Expert for Maternal and Child Health 16) Expert for Training / Supervising management 17) Expert for Medical Equipment management</p> <p><u>Vocational Training</u></p> <p>18) Expert for Vocational Training</p>	<p>Deliveries of the Equipments planned to be procured by the Project do not delay largely</p>

<p>water supply facilities based on the division of works set by State Government.</p> <p>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.</p> <p>2.3.5 Conduct the geophysical survey for the poor areas with ground water resources in northern Kassala State.</p> <p>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.</p> <p>2.3.7 Rehabilitate rural water supply facilities in pilot 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>(Strategic Planning) 19) Experts for Vocational Training (Curriculum Development / Teaching materials) 20) Experts for Vocational Training (Facilities &amp; Equipment)</p> <p>Other short-term experts may be dispatched when the needs arise.</p> <p><b>【Provision of Short-term Training outside Sudan】</b></p>	
<p><b>&lt; Proposed pilot sites: &gt;</b></p> <p><b>&lt;Rehabilitation of rural water facility making synergy effect with health sector&gt;</b></p> <p><b>&lt;A model of operation &amp; maintenance of rural water facility&gt;</b></p> <p><b>Wad El Helew locality / Girba locality</b></p>		<p>Short-term Training of Sudanese counterparts in Japan and/or 3<sup>rd</sup> country</p> <p><b>【Provision of Equipment】</b></p>	
<p><u>Agriculture and Livelihood</u></p> <p>3.1 Improve agricultural extension services</p> <p>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.</p> <p>3.1.2 Strengthen the linkages between extension services and other departments' activities (e.g., planning, land use, horticulture development and plant protection)</p> <p>3.1.3 Conduct core skill training (e.g., computer operation, record keeping and reporting)</p> <p>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.</p> <p>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.</p> <p>3.2 Apply improved techniques to pilot areas for productivity and profitability enhancement</p> <p>3.2.1 Conduct field experiments on cultivation techniques (e.g., water-saving irrigation, water</p>		<p>Provision of equipment necessary for the implementation of the project activities</p>	

<p>harvesting, contour farming, horticultural techniques, etc.) in the pilot areas.</p> <p>3.2.2 Carry out field extension activities (e.g., Farmers Field School (FFS) and demonstration farms) selected in the Preparation Phase.</p> <p>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.</p> <p>3.2.4 Introduce livelihood activities (e.g., handicraft, poultry and pottery) in the pilot areas.</p>			
<p><b>&lt; Proposed pilot sites: &gt;</b></p> <ol style="list-style-type: none"> <li><b>1. &lt; Horticultural zone &gt; Kassala</b> Establishment of comprehensive technical package to increase productivity of horticultural crops &amp; Dissemination and training of post-harvesting techniques</li> <li><b>2. &lt; Traditional Rain-fed &gt; Rural Aroma (Eastern side of Atbara River)</b> Dissemination of appropriate water harvesting techniques</li> <li><b>3. &lt; Flood irrigation &gt; Rural Aroma</b> Establishment of comprehensive technical package to increase productivity of several crops</li> <li><b>4. &lt; Mechanized Rain-fed &gt; Wad El Helew</b> Dissemination of appropriate water harvesting techniques</li> </ol>			
<p><u>Health</u></p> <p>4.1 Improve maternal and child health (MCH) service in the pilot areas</p> <p>4.1.1 Conduct a supplementary survey and an endline survey on maternal and child health care services.</p> <p>4.1.2 Make an annual implementation schedule in the pilot localities (Girba and Wad El Helew).</p> <p>4.1.3 Coordinate donors' activities on reproductive health (RH).</p> <p>4.1.4 Conduct in-service training for VMWs.</p> <p>4.1.5 Promote supportive supervision and coordination between HV/AHV and VMW at the locality level.</p> <p>4.1.6 Coordinate emergency obstetrics care (EmOC) training and neonatal care training for staff in target hospitals.</p> <p>4.1.7 Conduct training of medical equipment engineers.</p> <p>4.1.8 Introduce medical equipment management activities (including 5S method) in target hospitals.</p> <p>4.1.9 Provide necessary equipment for target hospitals (Saudi Maternal Hospital, Kuwait Pediatric Teaching Hospital and locality hospitals in the pilot areas).</p> <p>4.1.10 Promote State Ministry of Health to conduct the monitoring and supervision of RH activity indicators monthly in the pilot areas.</p> <p>4.1.11 Conduct trial for low-cost referral system in collaboration with communities.</p> <p>4.1.12 Make recommendations based on the</p>			

<p>experiences in 4.1.1 – 4.1.11</p> <p>4.2 Strengthen capacity of frontline staff for maternal and child health.</p> <p>4.2.1 Formulate in-service training plans for VMWs for all localities in close coordination with development partners.</p> <p>4.2.1 Conduct in-service training for VMWs in selected areas based on training plans.</p> <p>4.2.3 Promote supportive supervision and coordination between HV/AHV and VMW at the locality level.</p>			
<p><b>Vocational Training</b></p> <p>5.1 Strengthen capacity of Kassala Vocational Training Center (KVTC)</p> <p>5.1.1 Conduct a supplementary survey on the labor market and supplementary needs assessment for vocational training.</p> <p>5.1.2 Formulate a 5-year strategic plan for vocational training in Kassala State, including budgets for its implementation and KVTC's roles in improving vocational training services.</p> <p>5.1.3 Conduct TOT for KVTC and related training/technical institutes.</p> <p>5.1.4 Support new regular (3-year) training courses of KVTC.</p> <p>5.1.5 Conduct short courses based on the needs assessment.</p> <p>5.1.6 Conduct follow-up surveys and activities for the graduates (including short-course trainees).</p> <p>5.1.7 Monitor and support the progress of the strategic plan proposed in 5.1.2.</p>			<p><b>Pre-conditions</b></p> <p>Security conditions in Kassala State and North Sudan are not worsened</p> <p>Federal Government supports Kassala State Government, especially in terms of Local Component budget.</p>

**Annex 2:**

**Plan of Operation (PO)**

**(attached to the Minutes of Meeting (M/M)**

**signed on March 13, 2011)**



Activity	Year 1												Year 2												Year 3												
	2011						2012						2013						2014																		
	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	11	12	1	2	3	4
<b>Output 1: Kassala State Government's capacity on Development Planning and Management is strengthened.</b>																																					
<b>1.1 Strengthen supportive monitoring and feedback functions for the whole project by General Directorate of Economic Planning and Development (DPD) in State Ministry of Finance, Economy and Labor Force (SMoF)</b>																																					
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).																																				
1.1.2	Monitor and support the progress of the whole project regularly, and organize the regular meetings (for example, bimonthly) to discuss the progress and problems of the whole project among all counterparts.																																				
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.																																				
<b>1.2 Strengthen capacity of DPD through participatory bottom-up Kaizen approach</b>																																					
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 disseminate their positive results to all staff of DPD for their replication.																																				
1.2.5	If the first year's experiences are found positive, repeat <i>Kaizen</i> Initiative for the coming years, with increasing cost sharing by the State Government.																																				
1.2.6	Evaluate <i>Kaizen</i> Initiative and disseminate it to other State Government organizations.																																				
1.2.7	Conduct necessary training and field visits for DPD staff and other counterparts, if they are not provided by other donors.																																				
<b>1.3 Strengthen capacity of State Government to plan, monitor and evaluate the Kassala State Strategic Plan 2012-2016 in collaboration with UNDP</b>																																					
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.																																				
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.																																				
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.																																				
1.3.4	Evaluate the quality of the Strategic Plan 2012-2016 with external learned persons.																																				

Activity	Year 1				Year 2				Year 3																	
	2011				2012				2013					2014												
	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
<b>Output 2: Kassala State Government's capacity to provide service for Water Supply is strengthened.</b>																										
<b>2.1 Strengthen capacity of operation and maintenance of water supply in Kassala Town</b>																										
2.1.1	Update the inventory of water distribution network in Kassala Town on GIS system.																									
2.1.2	Compile manuals on operation and maintenance of water distribution network in Kassala Town and related equipments.																									
2.1.3	Arrange training in PWCT for SWC staff on operation and maintenance of water distribution network and related equipments.																									
2.1.4	Propose an annual work plan for maintaining and renovating water distribution network in Kassala Town.																									
2.1.5	Make policy recommendations on operation and maintenance of urban water supply facilities in Kassala State.																									
<b>2.2 Strengthen capacity of financial management in State Water Corporation (SWC) office</b>																										
2.2.1	Design and build the database of customers in Kassala Town .																									
2.2.2	Compile a manual and train SWC staff on database management on PC.																									
2.2.3	Make policy recommendations on financial management of SWC based on database of customers.																									
<b>2.3 Strengthen capacity of operation and maintenance of rural water supply facilities in Kassala State</b>																										
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 searching alternative ground water resources in northern part of Kassala State, and conduct trainings for SWC staff on the method of geophysical survey.																									
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 sites based on the division of works set by State Government.																									
2.3.8	Establish a model of operation & maintenance of rural water supply facilities in pilot areas.																									
2.3.9	Make policy recommendations on operation and maintenance of rural water supply facilities in Kassala State.																									

Activity		Year 1					Year 2					Year 3																		
		2011					2012					2013					2014													
		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			
<b>Output 3: Kassala State Government's capacity to provide service for Agriculture and Livelihood is strengthened.</b>																														
<b>3.1 Improve agricultural extension services</b>																														
	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.																												
	3.1.2	Strengthen the linkages between extension services and other departments' activities (e.g., planning, land use, horticulture development and plant protection)																												
	3.1.3	Conduct core skill training (e.g., computer operation, record keeping and reporting)																												
	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.																												
<b>3.2 Apply improved techniques to pilot areas for productivity and profitability enhancement</b>																														
	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., handcraft, poultry and pottery) in the pilot areas.																												
	3.2.4	Monitor pilot activities in 3.2.1 - 3.2.3, share the experiences within TTEA and with other departments and feedback them into the strategic plan formulated in 3.1.1.																												
(Detailed plans of operation for the pilot projects will be developed in the preparatory																														



Activity	Year 1												Year 2												Year 3												
	2011						2012						2013						2014																		
	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	11	12	1	2	3	4
<b>Output 4: Kassala State Government's capacity to provide service for Maternal and Child Health is strengthened.</b>																																					
<b>4.1 Establish a maternal and child health care model in the pilot areas.</b>																																					
4.1.1	Conduct a supplementary survey and an end-line survey on maternal and child health care services.																																				
4.1.2	Make an annual implementation schedules in the pilot localities (Girba and Wad Elhelew).																																				
4.1.3	Coordinate donors' activities on reproductive health (RH).																																				
4.1.4	Conduct in-service trainings for VMWs.																																				
4.1.5	Promote supportive supervision and coordination between HV/AHV and VMW at locality level.																																				
4.1.6	Coordinate emergency obstetrics care (EmOC) training and neonatal care training for staff in target hospitals.																																				
4.1.7	Conduct training of medical equipment engineers.																																				
4.1.8	Introduce medical equipment management activities (including SS method) in target hospitals.																																				
4.1.9	Provide necessary equipment for target hospitals (Saudi Maternal Hospital and Kuwait Pediatric Teaching Hospital and locality hospitals in the pilot areas).																																				
4.1.10	Promote State Ministry of Health to conduct the monitoring and supervision of RH activity																																				
4.1.11	Conduct trial for low-cost referral system in collaboration with communities.																																				
4.1.12	Make recommendations based on the experiences in 4.1.1 - 4.1.11.																																				
<b>4.2 Strengthen capacity of frontline staff for maternal and child health</b>																																					
4.2.1	Formulate in-service training plans for VMWs for all localities in close coordination with development																																				
4.2.1	Conduct in-service trainings for VMWs in selected area based on training plans.																																				
4.2.3	Promote supportive supervision and coordination between HV/AHV and VMW at the locality level.																																				
<b>Output 5: Kassala State Government's capacity to provide service for Vocational Training is strengthened.</b>																																					
<b>5.1 Strengthen capacity of Kassala Vocational Training Center (KVTC)</b>																																					
5.1.1	Conduct a supplementary survey on the labor market and supplementary needs assessment for vocational training.																																				
5.1.2	Formulate a 5-year strategic plan for vocational training in Kassala State, including budgets for its implementation and KVTC's roles in improving vocational training services.																																				
5.1.3	Conduct TOT for KVTC and related training/technical institutes.																																				
5.1.4	Support new regular (3-year) training courses of KVTC.																																				
5.1.5	Conduct short courses based on the needs																																				
5.1.6	Conduct follow-up surveys and activities for the graduates (including short-course trainees).																																				
5.1.7	Monitor and support the progress of the strategic																																				

 To complete project activities within the solid line.  
 To continuously conduct project activities during the dotted line.

## **Annex 3:**

### **Planned Inputs**

**Annex 3.1**    **Assignment Schedule (as of 31 January, 2011)**

**Annex 3.2**    **Training in Japan and Other Countries**

**Annex 3.3**    **Equipment Procurement**

**Annex 3.3.1**    **List of Equipment Procured in the Preparatory Phase**

**Annex 3.3.2**    **List of Equipment to be Procured in the Implementation Phase**

**Annex 3.4**    **Facilities**


**Annex 3.5**    **Budget (Japanese Side)**

**Annex 3.6**    **Budget (Sudanese Side)**

**Annex 3.1 Assignment Schedule (as of 31 January, 2011)**

Human Input	Year 1												Year 2												Year 3												Man-Months																
	2011						2012						2013						2014						Year 1		Year 2		Year 3		Total																						
	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	11	12	1	2	3	4	5	Japanese	Local	Japanese	Local	Japanese	Local	Japanese	Local							
<b>1. Planning and Administration</b>																																																					
1 Japanese Expert																																																					
1.1.1	Project Leader / Development Planning and Management		■						■						■						■						9.00		9.00		11.00		29.00																				
1.1.2	Project Coordinator / Administration		■						■						■						■						9.00		9.00		11.00		29.00																				
1.1.3	Procurement		■						■						■						■						3.00		3.00		0.00		6.00																				
1.1.4	Construction		■						■						■						■						4.00		0.00		0.00		4.00																				
1 Local Consultant and NGO																																																					
1.2.1	Local Consultant for Baseline and Endline Surveys		■						■						■						■								20.00				20.00		40.00																		
Sub-total (Planning and Administration)																																						25.00		20.00		21.00		0.00		22.00		20.00		68.00		40.00	
<b>2. Water Supply</b>																																																					
2 Japanese Expert																																																					
2.1.1	Urban Water Supply (Pipe Network Management/ Database Management)		■						■						■						■						4.00		4.00		4.00		12.00																				
2.1.2	Urban Water Supply (Financial)		■						■						■						■						0.00		0.00		2.00		2.00																				
2.1.3	Rural Water Supply (Operation and Maintenance)		■						■						■						■						7.00		7.00		7.00		21.00																				
2.1.4	Rural Water Supply (Geophysical Survey)		■						■						■						■						3.00		3.00		3.00		9.00																				
2 Local Consultant and NGO																																																					
2.2.1	Urban Water		■						■						■						■						6.00				6.00		18.00																				
2.2.2	Rural Water		■						■						■						■						6.00				0.00		12.00																				
Sub-total (Water Supply)																																						14.00		12.00		14.00		12.00		16.00		6.00		44.00		30.00	
<b>3. Agriculture and Livelihood</b>																																																					
3 Japanese Expert																																																					
3.1.1	Agricultural Production		■						■						■						■						5.00		6.00		5.00		16.00																				
3.1.2	Agricultural Marketing		■						■						■						■						6.00		6.00		5.00		17.00																				
3.1.3	Rural Development/ Farmers' organization		■						■						■						■						6.00		7.00		2.00		15.00																				
3.1.4	Mechanized Agriculture		■						■						■						■						4.00		4.00		1.00		9.00																				
3.1.5	Water Harvesting		■						■						■						■						2.00		3.00		1.00		6.00																				
3.1.6	Cooperative		■						■						■						■						1.00		2.00		2.00		5.00																				
3 Local Consultant and NGO																																																					
3.2.1	Cooperative / Agricultural Marketing		■						■						■						■						2.00				2.00		6.00																				
3.2.2	Water Harvesting		■						■						■						■						2.00				2.00		6.00																				
Sub-total (Agriculture and Livelihood)																																						24.00		4.00		28.00		4.00		16.00		4.00		68.00		12.00	

Human Input	Year 1												Year 2												Year 3												Man-Months																																																					
	2011						2012						2013						2014						Year 1		Year 2		Year 3		Total																																																											
	4	5	6	7	9	10	11	12	1	2	3	4	5	6	7	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	Japanese	Local	Japanese	Local	Japanese	Local	Japanese	Local																																														
<b>4. Health</b>																																																																																										
4 Japanese Expert																																																																																										
4.1.1 Maternal and Child Health Care System																																																																																										
4.1.2 Training/ Supervising Management																																																																																										
4.1.3 Medical Equipment Management																																																																																										
4 Local Consultant and NGO																																																																																										
4.2.1 Training Management																																																																																										
4.2.2 Community Survey (baseline and end survey)																																																																																										
Sub-total (Health)																																																																																										
5. Vocational Training																																																																																										
5 Japanese Expert																																																																																										
5.1.1 Vocational Training (Strategic Planning)																																																																																										
5.1.2 Vocational Training (Curriculum Development / Teaching Materials)																																																																																										
5.1.3 Vocational Training (Facilities and Equipment)																																																																																										
5 Local Consultant and NGO																																																																																										
5.2.1 Labor Market Survey and Needs Assessment																																																																																										
Sub-total (Vocational Training)																																																																																										
<b>Grand Total</b>																																																																																										

 Ramadan

### Annex 3.2 Training in Japan and Other Countries

Cluster	Theme	Site	Time Span	No. of Participants
<b>Year 1</b>				
1) Planning	KAIZEN Approach	Japan	15 days	6
2) Water Supply	Urban Water Supply	Morocco	15 days	6
3) Agriculture / Livelihood	Agricultural Policy and Extension System	Japan	15 days	5
4) Health	Maternal and Child Health	Japan	15 days	4
5) Vocational Training	Auto Mechanics	Japan or Malaysia	2 months	2
<b>Year 2</b>				
1) Planning	Monitoring and Evaluation	Nepal	15 days	6
2) Water Supply	Rural Water Supply	Zambia	15 days	6
3) Agriculture / Livelihood	Agriculture /Horticulture	Japan	15 days	5
4) Health	Hospital Management/ 5S	Japan	15 days	4
5) Vocational Training	Welding and Machining	Malaysia	2 months	2
<b>Year 3</b>				
1) Planning	KAIZEN Approach	Singapore	15 days	6
2) Agriculture / Livelihood	Water Harvesting and Horticulture	Syria	15 days	5
3) Health	Maternal and Child Health	(to be decided)	15 days	4
4) Vocational Training	General Electricity	Malaysia	2 months	2

## Annex 3.3 Equipment Procurement

### Annex 3.3.1 List of Equipment Procured in the Preparatory Phase

#### 1. Planning Cluster

No	Item	Specification	Quantity
1	Generator	Model: Olympian GEP65-5 Capacity: 60 KVA, 48 kW Weight: 1102 kg (Net + Fuel, lube oil & coolant) Dimensions (mm) Length: 2,150, Width : 752 Height: 1,366	1

#### 2. Water Supply Cluster

##### 2.1 Heavy equipment

No	Item	Specification	Quantity
1	3t Crane Truck	Model: FM617JHL Capacity: 10 Tone Length (Cab to end of frame CE): 5.955m	1
2	4t Crane Truck	Model; CWB450 Capacity: 18.5 tons Body Length: 7.700m	1
3	Backhoe Loader	422E BHLS/TILT2WS Capacity: 1.0m <sup>3</sup> Digging Depth, Maximum: 4.834 m	2
4	Generator	Model: GEP33-3 Capacity: 30KVA Weight: 976Kg (Net + Fuel, lube oil & coolant) Dimensions (mm) Length: 1,540, Width: 970, Height: 1,361	6

##### 2.2 Workshop Machines

No	Item	Specification	Quantity
1	Fixed Drilling Machine	15" heavy duty	1
2	Hand Drill Machine	Up to 10 mm (with drill set)	2
3	Welding Machine	30-225 amperes	1
4	Pipe Threading Machine	0.5"-4" galvanized, ASTM, API pipes 1/2" - 4", 220V, 750W	1
5	Pipe Cutter Machine	0.5"-4"	1
6	Oxyacetylene Equipment		2

##### 2.3 Mechanical Tools for Workshop

No	Item	Specification	Quantity
1	Bench	1m x 2m Height= 100 cm	2
2	Smith's anvil	Size= Length 30 cm	1
3	Hammer	Ball pane hammer	2

No	Item	Specification	Quantity
4		Cross pane hammer	2
5	Sledge hammer	Double faced sledge & straight pane sledge	2
6	Chisels	Flat, cross cut, half round	6
7	Calipers	Outside, inside, divider & odd legs	6
8	Centre punch		4
9	Pin punch		4
10	Bevel gauge		2
11	Outside micrometer caliper		2
12	Radius gauge		2
13	Scriber		2
14	Hack saw		6
15	Vernier sliding caliper	0-150mm/0-6" stainless steel digital	2
16	Files	Sealey AK572 Flat, square, triangle, knife, half round, round rat tail files	4 each
17	Reamers		1
18	Set of hand taps	Reconfirm	2
19	Measuring tools	Ruler, tape 5m, 10m length	3
20	Vise	For light and heavy duty	4
21	Iron brushes		6
22	Block & tackle	1/2 ton	2
23	Pliers	Different types for mechanical works	12
24	Chain wrench	For holding metal pipe 3"-4"-6"-diameter	6
25	Spanner	Different sizes and types Each one of: 6x7, 8x9, 10x11, 12x13, 14x15, 16x17, 18x19, 20x22, 21x23, 24x26, 25x28, 30x32 mm (total of 12 pcs)	7sets
26	Screw drivers	Different sizes & shapes, each one of: Slotted: 3x75, 4x80, 5.5 x 125, 6.5 x 150, 6.5 x 38mm Pozi: #0 x 75, #1 x 80, #2 x 100 (total of 8 pcs)	3 sets
27	Hoover	700W	2
28	Stock & dies	2/8" to 7/8"	2 sets
29	Allen key	Each one of: Hex keys, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm Length 92-230mm (total of 9 pcs)	2 sets
30	Right angle steel rule	20cm x 2 30cm x 2	4
31	Pipe wrench	36"	4
32	Pipe wrench	Steel, 915mm, 13-100mm, 18"	4
33	Disc Grinder cutting Saw		2
34	Tool Box	Holding above tools	1
35	Tachometer	50 to 50000 rpm	1
36	Emergency Light	Twin 6-Volt with Nickel Cadmium battery	1
37	Submersible Pump	0.37kw 9m <sup>3</sup> /h@5mH, Power Cable x 50m, Switch Boxes	1

## 2.4 Electrical Tools for Workshop

No	Item	Specification	Quantity
1	Insulated Screw	Different sizes and shape	3 sets
2	Insulated pliers	220mm Insulated terminal: 0.5-1.0, 1.5-2.5, 4-6 mm 2 Uninsulated terminal: 1.5, 2.5, 6, 10 mm 2 Include exchangeable jaw terminal For electric works (500V)	4
3	Cutters-1	For single core wire 1.5mm-16mm	2
4	Cutters-2		2
5	Insulation cutters	For single core wire 1.5mm-16mm	4
6	Cable shoes pliers	Suitable for working 1.5mm-16mm	4
7	Measure	For measuring insulation resistance	1
8	Measuring instrument	For A-V-Ohm values (digital type)	2
9	HZ Meter	Digital type, 0-60Hz	2
10	Clip meter	Digital type, up to 1000V, 100A	2
11	Plastic hammer	Half pound	4
12	Cables shoes	1.5mm-16mm	2 sets
13	Gear puller	3 legs for heavy duty 200mm	2
14	Gear puller	2 legs for light duty 4", 20-110mm width	2
15	Gear puller	2 legs for small bearing 8", 30-210mm width	2

## 2.5 Others

No	Item	Specification	Quantity
1	Cabinet	Steel, 2 doors type	3
2	Tool shelf		2
3	Helmet		15

## 3. Agriculture and Livelihood Cluster

### 3.1 Agriculture

No	Item	Specification	Quantity
1	Tractor	82hp	2
2	Monesim Pneumatic Planter	4 wings/ seed cups	2
3	Ridger	4 wings	2
4	Chisel Plough	7 arms	2
5	Sprayer Boom	400 liters	2

### 3.2 Extension Center Facilities

No	Item	Specification	Quantity
1	Portable Generator	5kVa	2
2	Portable Generator	3kVa	1



#### 4. Health Cluster

##### 4.1 Saudi Hospital

No	Item	Specification	Quantity
(Post Operation Room)			
1	Air conditioner	Separate type	2
(Labor Room)			
1	Air conditioner	Separate type	1
(Statistics)			
1	Computer	Desk top, 20" display, with USP with AVR, Dual core processor 2.7GHz or more, 2GB RAM, HDD250GB or more, DVD-RW drive	2
2	Printer	Laser type, A4 30 paper/min. or more	1
3	Photocopy machine	Basic with Automatic Document Feeder (ADF) and Cabinet	1

##### 4.2 Kuwait Pediatric Hospital

No	Item	Specification	Quantity
(Statistics)			
1	Computer	Desk top, 20" display, with USP with AVR, Dual core processor 2.7GHz or more, 2GB RAM, HDD250GB or more, DVD-RW drive	2
2	Printer	Laser type, A4 30 paper/min. or more	1

##### 4.3 Girba Locality Hospital

No	Item	Specification	Quantity
(Statistics)			
1	Computer	Desk top, 20" display, with USP with AVR, Dual core processor 2.7GHz or more, 2GB RAM, HDD250GB or more, DVD-RW drive	1
2	Printer	Laser type, A4 30 paper/min. or more	1

##### 4.4 Wad El Helew Rural Hospital

No	Item	Specification	Quantity
(Operation room)			
1	Air conditioner	Separate type,	1
(Statistics)			
1	Computer	Desk top, 20" display, with USP with AVR, Dual core processor 2.7GHz or more, 2GB RAM, HDD250GB or more, DVD-RW drive	1
2	Printer	Laser type, A4 30 paper/min. or more	1

##### 4.5 VMW training and supervisor

No	Item	Specification	Quantity
1	Computer	Desk top, 20" display, with USP with AVR, Dual core processor 2.7GHz or more, 2GB RAM, HDD250GB or more, DVD-RW drive	1
2	Printer	Laser type, A4 30 paper/min. or more	1

No	Item	Specification	Quantity
3	Midwifery practice model, 3 functions	For vaginal examination, obstetric assistance, and perinea-suture practice	1
4	Midwifery practice model, 1 function	Delivery practice model	1
5	Weighing scale	Adult, Floor type balance	1
6	VMW kit	20 tools and instruments for village midwifery activity	180

## 5. Vocational Training Cluster

### 5.1 Office Furniture for KVTC's New Building

No	Item	Specification	Quantity
1	Desk	2,200 mm with drawers and wing for computer	1
2	Desk	1,600 mm with 3 drawers	2
3	Desk	1,200 mm with 3 drawers	3
4	Swivel chair		6
5	Wooden cupboard	With 3 doors	3
6	Steel cabinet	With double doors	1
7	Chairs for visitors	M3 type	22
8	Refrigerator	10 feet	1
9	Water server	Hot and cold water	3
10	Digital TV 21 inch	With receiver set	1
11	Meeting table with 8 chairs		1
12	Computer desk for trainee	1,000 mm x 600 mm	15
13	Computer chair for trainee		15
14	Computer desk for trainee	1,800 mm x 700 mm	1
15	Computer chair for instructor	Swivel	2
16	Curtains for 19 windows	Curtain cloths (28.5 m <sup>2</sup> ) + steel hangers	--

### 5.2 IT Equipment for KVTC

No	Item	Specification	Quantity
1	A4-size laptop computer	Genuine Windows installed Genuine Microsoft Office Built-in web camera Mouse and carrying case	18
2	Black & white multifunction laser printer	USB & Ethernet connection Automatic 2-sided printing Photocopying and scanning function	1
	Spare toner cartridge		1
3	Portable battery-operated inkjet color	USB connection and battery	1
	Spare black toner cartridges		5
	Spare color toner cartridges		5
4	Black and white photocopying machine	2-sided copying; 2 trays of A4 size and A3 size Auto document feeder, sorting function, cabinet	1
5	100Base-TX Ethernet cable	Length: 1 m	1
6	100Base-TX Ethernet cable	Length: 3 m	1
7	100Base-TX Ethernet cable	Length: 5 m	1

No	Item	Specification	Quantity
8	100Base-TX Ethernet cable	Length: 10 m	1
9	Backup UPS	1 for the multifunction printer and 2 for the photocopier	3
10	Stabilizer	1 for the multifunction printer and 1 for the photocopier	2
11	LCD multimedia projector	With projector screen	1
12	Digital camera	Slim pocket size	1
13	Digital video camera (camcorder)	Handy type that can store recorded data in DVD-R	1
14	DVD-R media		100
15	Modem	Connection to the Internet (sudatel)	1

### 5.3 Equipment for KVTC's New Courses

#### 5.3.1 Women's Activities

##### A. Dress Making

No	Item	Specification	Quantity
1	Sewing machine	Butterfly	30
2	Embroidery machine		3
3	Cleaner machine		2
4	Scissors 8"		50
5	Scissors 10"		50
6	Scissors 12"		50
7	Manikin (for men, women & children)		20
8	Threads	Various 10 colors 2 dozen	25 x 20 sets
9	Measuring tape	1 meter	50
10	Embroidery hoop	3 sizes	25 x 3 sets
11	Needles	Sewing size	30 box
12	Needles	Hand Embroidery 2 size	30 box
13	Embroidery threads	Various 10 Colors, 2 dozen	25 x 20 sets
14	Zigzag scissor	3 size	30
15	Iron pillow		15
16	Cutting table	2,000 x 1,000 mm	10
17	Iron (regular type)		10
18	Iron steam type)		10

##### B. Food Processing

No	Item	Specification	Quantity
1	Gas cooker + oven	Cooker: 5 burners equipped with automatic ignition-oven: more than 4 cubic ft+	4
2	Electrical oven		5
3	Electrical blender		10
4	Hand mincer	8 inches	5
5	Hand mincer	10 inches	5
6	Hand egg beater		15
7	Measuring cup Measuring spoon	Stainless steel Stainless steel, 3 different sizes/set	2 3 sets

No	Item	Specification	Quantity
8	Scraper	4 pieces/set	10
9	Cupcake tray		10
10	Bakery crafts pasty bags	Big size, medium size and small size (3) each	9
11	Biscuit machine		3
12	Sealer (sealing plastic)		2
13	Knife	Stainless steel	20
14	Kettle	Stainless steel (big size, medium size, and small size, 3 each)	9
15	Refrigerator	12 feet electric rating 220,50 HZ Effective capacity between 700 – 1000 LT	2
16	Deep freezer	12 feet, effective capacity more than 350 LT Operating temp 20 °C Electric rating 220v, 50 HZ	2
17	Weighting balance	1-20 kg (0-44 lbs)	1
18	Sausage machine		1
19	Burger machine		1
20	Spaghetti hand machine		3
21	Cool touch waffle maker		3
22	Cake mould		10
23	Juice extractor		3
24	Table	Frame from steel – upper surface from timber (wood) 1600 x 800 x 20 mm height 700 mm	10
25	Chairs		30
26	Meat chopper	Large volumes of electricity	3
27	Meat choppers	Manual	3

### 5.3.2 General Electricity

#### A. Electrical Motors and Equipment

No	Item	Specification	Quantity
1	Electric control unit		5
2	Contactora		64
3	Over - load 10Amp		32
4	Push button (on - off)		64
5	Timer		32
6	Relay 8 pins		32
7	Relay 11 pins		32
8	Relay base 8 pins		48
9	Relay base 11 pins		48
10	Induction motor 3 phase on speed	7.5hp – 1 10hp – 3 15hp – 1	5
11	Induction motor single phase	3hp – 2 2.5hp – 2 5hp – 2	6
12	Synchronous motor	8hp – 1 10hp – 3 15hp – 1	5
13	Slipring motor	3hp – 3 5hp – 2	5
14	Cartridge fuse	10A – 40 20A – 100	200

No	Item	Specification	Quantity
		30A – 60	
15	Control wire 1.5 mm (20 core)		20
16	Control wire 2 mm (15 core)		15
17	Indicator lamps on		50
18	Indicator lamps stop		50
19	Over -load indicator		50
20	Water pump motor	0.5hp – 4 1hp – 4 1.5hp – 2	10
21	Air condition motor 2 speed		5
22	Porslaam low – Tension 415 V		50
23	Socket set in case	With ½” square drive Number of parts socket size (11) 10-11-12-15-16-17-18-19-20-21-22 mm	10
24	Combination spanners in case	Contain 12 combination spanners Ring head size 8-9-10-11-12-13-14-15-16-17-18-19 mm	10

## B. Electrical Internal Connection

No	Item	Specification	Quantity
1	General electrical connection		20
2	Measurement device (OVO meter)	Analog	20
3	Measurement device (OVO meter)	Digital	20
4	Clamp meter	Digital	20
5	Watt- meter	Analog	20
6	Watt- meter	Digital	20
7	Frequency meter	Analog	20
8	Frequency meter	Digital	20
9	Wires double core	1.5 mm	10
10	Wires double core	2 mm	10
11	Wires one core	1.5 mm	10
12	Wires one core	2 mm	10
13	Buzzer wire		5
14	One line switch		20
15	Two line switch		20
16	Ladder terminal switch		20
17	Ladder medium switch		20
18	Buzzer switch		20
19	Protection switch		35
20	Ceramic fuse	15 ampere	35
21	Tungsten lamp	40 watt	35
22	Fluorescent lamp	40 watt	64
23	Fluorescent lamp	20 watt	32
24	Lets	13 ampere	30
25	Board	For electrical connection from timber (wood) 800 x 600 x 20mm	20
26	Block distribution point		4
27	Connection pipes	6 x 170 x 120cm	18

### C. Tools

No	Item	Specification	Quantity
1	Spanner set keys (set from each size)	Small=8 mm, medium=10 mm and large=14 mm	20
2	Set of screw drivers (-)	Small=50 mm, medium=75 mm and large=100 mm	20
3	Set of screw drivers (+) set from each size	Small, medium and large	20
4	Normal hammer	Small, medium and large	20
5	Plastic hammer		20
6	Pliers normal		20
7	Long nose pliers		20
8	Cutter		20
9	Lamp test		20
10	Alarm stroll		20
11	Paper cutter		20

### D. Electrical Winding Motors

No	Item	Specification	Quantity
1	Winding motors manual-meter machine		10
2	Winding motors electric-meter machine		10
3	Micrometer	0 - 25 mm	20
4	Embryos for wire cutting	Small and medium, 15 kg of each size	20
5	Chilaaq	10 cans	10
6	Glassine	0.15 - 0.2 mm, 10 meter per scale	10
7	Pasta	Small, medium, large, 10 meter per scale	20
8	Zarkinp	Small, medium, large, 15 kg of each size	20
9	Hammer	Medium	20
10	Soft hammer	Medium, large	20
11	Caustic	50, 80, 200 watt	20
12	Measuring device with decoder	Clamp meter	20
13	Lamp test		20
14	Wire wrap 30, 40	0.2 x 0.25 mm, 10 kg of each size	20
15	Wire wrap 50,100	0.3 x 1.25 mm, 15 kg of each size	20
16	Heavy oil	Cans	20
17	Paper cater	Medium	20
18	Bench table surface	1500 x 700 x 400 mm from timber (wood) frame from steel height 800 mm	10

### 5.3.3 Car Electricity

#### A. Engines and Spare Parts

No	Item	Specification	Quantity
1	Toyota engine	Gasoline engine Carburetor system 12R	1
2	Electronic fuel injection (EFI)	Electronic fuel injection system	2

No	Item	Specification	Quantity
		Giad accent engine used 2 Atos engine used	
3	Battery	120 Ah, one 70 Ah, two 50 Ah, two	5
4	Engine – Starter	For 4-cylinders Toyota One new + two used For 6-cylinders Ford one used For 6-cylinders Land Cruiser pickup one new	5
5	Alternator	3 pieces for 4-cylinders branch new 2 pieces for 6-cylinders used	10
6	Ignition coil	For 4 cylinders	6
7	Distributor	One for 6 cylinders Two for 4 cylinders	6
8	Spark plug	Set in 4	15
9	Voltage regulator		5
10	Battery	Standard cable	10 m
11	Electrical wire	100 meter (dia – 1mm) different color 100 meter (dia – 2mm) different color	
12	Electric wire clips	Box with 100ps	15
13	Head lamp		15
14	Tail lamp		15
15	Horn		15
16	Switches	5 each – light, signal, horn and pressure	20
17	Relay		5
18	Unit of wire electrical connection		5 units
19	Flasher		5
20	Fuse and fuse hoard		5
21	Lamps	Box (one and two line)	5
22	Electrical fuel pump	4-cylinder two 6-cylinder one	5
23	Re-ignition plug		3 sets
24	Glass cleaner machine	Two Toyota One Land Cruiser	3

## B. Equipment and Tools

No	Item	Specification	Quantity
1	Battery charger	Type: stand type Volts output 12 v Amps in put 0.7 A or more Power: 220 v, 50 HZ single phase	2
2	Battery hydrometer	Acid density tester	3
3	Hand tools case with tools	For car engine including (sockets, spanners, feeler gauge, pillars, etc.)	5
4	Vice	With hardened steel jaws Jaw width 100mm Jaw depth 57mm Size of anvil 100 x 70mm	5

5	Pullers	Drop-forged steel (for anti friction bearing) Twin-legged Maximum spread: 120 mm, 200 mm, 350 mm Maximum reach: 100 mm, 150 mm, 200 mm	5
		Three-legged Maximum spread: 375 mm, 125 mm Maximum reach: 200 mm, 100 mm	4
6	Wire electrical welder		5

### C. Measuring Devices

No	Item	Specification	Quantity
1	Engine testing machine	Scanning machine for electric fuel injection (EFI) system: Carman Scan VG Plus	1
2	AVO – meter	Digital	5
3	Test lamp		10

### D. Training Media

No	Item	Specification	Quantity
1	Green board on casters	Size 2000 x 1000 mm with stand Height 1350 mm	4
2	White board	Size 1000 x 500 mm	3
3	Stand flip chart		3

### 5.3.4 Welding Section

No	Item	Specification	Quantity
1	Bench vices	Drop forged steel, Jaw width: 125, Jaw depth 80, Jaw of opening 160mm weight 17.5 kg	20
2	Machine vices	Cast iron with unhardened steel- Jaw width 95 mm, Jaw height 45 mm Jaw opening 110 mm- weight 8 kg	2
3	Work benches	1500 x 700 x 40 mm, Frame U steel (80 x 45 x 2) mm height 800 mm Upon surface-from timber (wood) 1500 x 700 x 40 mm with one lockable drawer	10
4	Bench and pillar drills	Drilling capacity, steel, casting 31 mm Morse taper 3MT Speed 200 – 3500 r/m Size of table 350 mm Motor size 1000w	1
5	Hand drilling or machine portable Power tools	For 220 V single phase AC supply setting for normal drilling and hammer action Maximum drill size (in steel): 13 mm Maximum drill size (in concrete): 13 mm Drill spindle dimension: UNF 3/4" x 24 Spindle speed: r/min- 2600 Weight: 1.8 kg	
6	Double grinding machine or pedestal grinder machine	230/400 V 3phase AC grinding wheel 300 x 50 x 25 mm Distance between grinding wheels 665 spindle speed	2



No	Item	Specification	Quantity
		Motor speed-(2.2) kw – (3.0) hp Weight 100kg With stand and machine lamp 60w including water basin	
7	Cutting-off machines	For cutting pipe and iron and steel section Shift machine for disc 300 x 22mm Motor rating (1700r/m) Spindle speed 4200r/m Cast max. tube dia. 100 mm	3
8	Radial drills machine	Automatic down feed. The motor is a two speed type. Drilling capacity, steel casting 35/45mm Size of table 500 x 600mm Power rating 1.8/106(2.5/2.2)hp for steel pipe.	1
9	Welding Tables	Welded construction made of 1 mm steel plate with grid and equipped with retractory bricks - box for electrodes Length: 950mm Width: 455mm Height: 670mm	8
10	Angle grinder	Including 5m cable and plug AEG s 630 motor for 220v – 1 – phase AC 50HZ. Max. disc. dia. 180 mm Spindle thread M14 power 1700 W	
11	Cross pain hammer	Diameter of face 36 mm Weight with handle 1,040 g	10
12	Ball pain hammer	Diameter of face 36 mm Weight with handle 1,040 g	10
13	Rubber mallet	Black solid rubber Normal hardness 74 x 127mm dimensions	20
14	Half round files	Bastard cut length 14" = 350 mm Second cut " " " Smooth cut " " "	30 30 30
15	Flat files	Baslard cut " " " Second cut " " " Smooth cut " " "	50 50 50
16	Three Square files	Bastard cut length 12" = 300 mm Second cut " " " Smooth cut " " "	30 30 30
17	Square files	Bastard cut " " " Second cut " " " Smooth cut " " "	30 30 30
18	Hack saw	Hand hack saw bow Hack saw frames adjustable tubular steel forms Light alloy handle chromium plated. For hack saw blade 250 – 300 mm Overall length of frame 360 mm Depth of frame 40 mm Frame material size 13 mm	30
19	Electrical arc welding machine	Three phased with high intermittence factor Fitted with cooling fan and overload protection Main Voltage 230/400 V Maximum power 13.5 kvA	8

No	Item	Specification	Quantity
		Maximum Electrode size 4 mm With welding cables electrode holder return cable and welding clamp	
20	Welder protection goggles with a thermal	With head hand Fold up welding glass outer frame and safely inner glass	25
21	Thread cutting tools in inches and mm	+ Set contained – thread taps made of H.S.S For blind holes, use for both machine and manual thread cutting + Threading dies (M-Coarse) M-Fine – UNC BCW (WT) Fixed chromium steel with chip breaking cutters	2 sets
22	Work shop square with stock	Long leg 250 mm Short leg 150 mm Width x thickness = 30 x 1.1 mm	10
23	Steel rule	Made of stain less steel Graduated inches and mm 1000mm length Width x thickness = 30 x 1.1 mm	10
24	Welding electrodes holder 800 A	800 A – Fully insulated with extruded handle	10

#### 5.4 Generator for KVTC

No	Item	Specification	Quantity
1	Generator	FG Wilson Diesel Generating Set Engine: Perkins, 1103A-33G1 UK Made Output Power: 135 kVA 108 kW (at 0.8 power factor), 3 phase, 50 Hz, 415-240 volts (without customs)	1
2	Change over switch	200 AMP	1
3	Lugs	70 mm	20
4	Gland	40 L	4
5	Cable tape		2
6	Green electrical tape		4
7	Rods 4/8		3
8	Lugs	25 mm	2
9	4 core cable	70 mm armored	100
10	Earth cable	25 mm	10
11	Screw	13 mm	6
12	12mm fisher		6
13	Generator complete concrete foundation	Dimension (mm): 3,300 x 1,400 x 250	1

#### 5.5 Pavement of KVTC's Yard

No	Item	Specification	Quantity
1	Pavement	Construction of interlocks and finishing	1,694 m <sup>2</sup>

## Annex 3.3.2 List of Equipment to be Procured in the Implementation Phase

### 1. Planning Cluster

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Year 1</b>					
Cabinets	For DPD	1,500	46,335	4	185,340
Desktop computer	For DPD	3,000	92,670	5	463,350
laser printer,	For DPD	2,500	77,225	5	386,125
PC table and chair	For DPD	900	27,801	5	139,005
UPS	For DPD	500	15,445	5	77,225
Stabilizer	For DPD	500	15,445	5	77,225
Projector and screen	For DPD	3,500	108,115	2	216,230
Scanner	For DPD	1,500	46,335	1	46,335
Plasma screen	For DPD	10,000	308,900	1	308,900
Heavy duty photocopying machine with a cabinet	For DPD	15,000	463,350	1	463,350
Digital camera	For DPD	1,000	30,890	1	30,890
GPS	For DPD	1,500	46,335	2	92,670
<b>Sub total</b>					<b>2,486,645</b>
<b>Grand total</b>					<b>2,486,645</b>

### 2. Water Supply Cluster

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Year 1</b>					
Air compressor	Pumping test equipment and Air-Lift tools for mobile workshop	89,600	2,767,744	1	2,767,744
Pumping test equipment, Air Lift Tools	Pumping test equipment and Air-Lift tools for mobile workshop	31,601	976,155	1	976,155
Submersible Pumps Type A, Cable: 170m, Control Panel	Pumping test equipment and Air-Lift tools for mobile workshop	20,940	646,837	1	646,837
Submersible Pumps Type B, Cable: 100m	Pumping test equipment and Air-Lift tools for mobile workshop	11,643	359,652	1	359,652
Welding machine, Welding electrode	Pumping test equipment and Air-Lift tools for mobile workshop	16,000	494,240	1	494,240
V-notch weir	Pumping test equipment and Air-Lift tools for mobile workshop	1,000	30,890	1	30,890
Bore Hale Camera, tripod	Bore Hole Camera for mobile workshop	150,000	4,633,500	1	4,633,500
Steals, The cost of remodeling	Modification of the mobile workshop	26,100	806,229	1	806,229
Pick Up car	Transportation to rural area for O & M	90,000	2,780,100	1	2,780,100
Multi channel digital resistivity meter	Geophysical Survey equipment	260,000	8,031,400	1	8,031,400
Tent, Parasol	Geophysical Survey equipment	1,740	53,749	1	53,749
Potable water analysis equipment	Water analysis equipment for survey in rural area	19,000	586,910	1	586,910
Survey tools for the bore hall	Equipment for survey in rural area	12,500	386,125	1	386,125
Battery Charger	Equipment for survey in rural area	1,000	30,890	1	30,890

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
Emergency Right	Equipment for survey in rural area	150	4,634	1	4,634
Repair tools	Repair equipment for the rural water supply facilities	9,250	285,733	1	285,733
The equipment in seminar room	Equipment for training of operator	7,400	228,586	1	228,586
Pipe Detector	The survey equipment for the urban area	27,000	834,030	2	1,668,060
Ultrasonic Liquid Flow meter	The survey equipment for the urban area	45,000	1,390,050	2	2,780,100
Large Wind Fan	The equipment for pipe network	700	21,623	2	43,246
Welding machine for HDP	The equipment for pipe network	12,000	370,680	2	741,360
The working tools	The equipment for pipe network	2,400	74,136	1	74,136
GIS software	The equipment for financial management and Database	15,000	463,350	2	926,700
printer	The equipment for financial management and Database	2,500	77,225	1	77,225
Expansion cord	The equipment for financial management and Database	500	15,445	3	46,335
Stabilizer	The equipment for financial management and Database	750	23,168	6	139,005
UPS	The equipment for financial management and Database	500	15,445	5	77,225
Submersible pump set (including cable, control panel)	Wad El Helew site	25,000	772,250	4	3,089,000
Laptop computer	The survey equipment for survey in rural area : 1, Geophysical Survey equipment : 1, The equipment for pipe network : 3	3,500	108,115	5	540,575
Desk top computer	The equipment for financial management and Database	3,000	92,670	5	463,350
Anti virus software	The survey equipment for survey in rural area : 1, Geophysical Survey equipment : 1, The equipment for pipe network : 3, The equipment for financial management and Database : 5	150	4,634	10	46,335
Text book	Training	150	4,634	15	69,503
Digital Camera	The survey equipment for survey in rural area : 2, The equipment for pipe network : 2	1,000	30,890	4	123,560
GPS	The survey equipment for survey in rural area : 2, The equipment for pipe network : 2	1,000	30,890	4	123,560
copy machine	The equipment for financial management and Database : 1, Equipment for Japanese expert : 1	15,000	463,350	2	926,700
Desk	Seminar room : 5, Equipment for Japanese expert : 2	200	6,178	7	43,246
Chair	Seminar room : 5, Equipment for Japanese expert : 2	200	6,178	7	43,246
Book Self	Equipment for Japanese expert	500	15,445	1	15,445
<b>Sub total</b>					35,170,551
<b>Year 2</b>					
Submersible pump set, Equipment of solar battery system	Girba Site	70,000	2,162,300	1	2,162,300

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Sub total</b>					<b>2,162,300</b>
<b>Grand total</b>					<b>37,332,851</b>

### 3. Agriculture and Livelihood Cluster

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Year 1</b>					
Computers	Data Management and PC training	4,000	123,560	24	2,965,440
Printers	Data Management and PC training	1,000	30,890	15	463,350
Photocopier	Data Management and PC training	1,000	30,890	12	370,680
Camera	Data Management and PC training	1,500	46,335	13	602,355
GPS	Extension Activities	1,500	46,335	10	463,350
Vehicle	Extension Activities	90,000	2,780,100	2	5,560,200
Motorbike	Extension Activities	8,000	247,120	9	2,224,080
Tractors (82 HP)	Mechanized Agriculture	100,000	3,089,000	2	6,178,000
Tractors Repair	Mechanized Agriculture & Water Harvesting	5,000	154,450	3	463,350
Chisel Plough (7 arms)	Mechanized Agriculture & Water Harvesting	11,000	339,790	3	1,019,370
Planters (4 bodies)	Mechanized Agriculture	35,000	1,081,150	2	2,162,300
Ridgers (4 bodies)	Mechanized Agriculture	10,000	308,900	2	617,800
Sprayer Boom (600 liters)	Mechanized Agriculture	10,000	308,900	2	617,800
Thresher	Mechanized Agriculture & Water Harvesting	22,000	679,580	5	3,397,900
Baler	Mechanized Agriculture & Water Harvesting	60,000	1,853,400	3	5,560,200
Mower	Mechanized Agriculture & Water Harvesting	10,000	308,900	3	926,700
Disk Plough	Mechanized Agriculture & Water Harvesting	10,000	308,900	5	1,544,500
Loader	Mechanized Agriculture & Water Harvesting	15,000	463,350	5	2,316,750
Small Water Pump	Livelihood / Rural Development	2,500	77,225	2	154,450
Gas Operation	Livelihood / Rural Development	300	9,267	12	111,204
Solar Mob. Charger	Livelihood / Rural Development	2,400	74,136	2	148,272
Sewing Machine	Livelihood / Rural Development	600	18,534	8	148,272
Electronic Sewing Machine	Livelihood / Rural Development	600	18,534	6	111,204
Gas Oven (Sudanese)	Livelihood / Rural Development	500	15,445	6	92,670
Gas Oven (Imported: Big)	Livelihood / Rural Development	6,000	185,340	1	185,340
Juice Extractor	Livelihood / Rural Development	800	24,712	5	123,560
Refrigerator	Livelihood / Rural Development	2,000	61,780	2	123,560
Biscuit Machines	Livelihood / Rural Development	110	3,398	5	16,990
Sorghum Millers	Livelihood / Rural Development	2,000	61,780	2	123,560
<b>Sub total</b>					<b>38,793,207</b>
<b>Year 2</b>					
Small Water Pump (3 HP)	Livelihood / Rural Development	2,500	77,225	1	77,225
Sewing Machine	Livelihood / Rural Development	600	18,534	12	222,408

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
Gas Oven (Sudanese)	Livelihood / Rural Development	500	15,445	6	92,670
Sorghum Millers	Livelihood / Rural Development	2,000	61,780	3	185,340
<b>Sub total</b>					<b>577,643</b>
<b>Grand total</b>					<b>39,370,850</b>

#### 4. Health Cluster

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Year 1</b>					
Maternity model	Delivery and antenatal training of VMW	25,000	772,250	1	772,250
Puerperal uterine model	Antenatal and post natal training of VMW	19,000	586,910	1	586,910
Air conditioner	Temperature and environmental control of statistics room and blood bank	5,200	160,628	2	321,256
Anesthesia	Anesthesia and respiration control of patient while operation	110,000	3,397,900	1	3,397,900
Autoclave	Equipment to sterilize operation instruments	20,000	617,800	2	1,235,600
AVR	Stabilize power voltage to medical equipment which may affect voltage fluctuation.	600	18,534	36	667,224
Blood bank refrigerator	Refrigerator of transfusion blood	24,000	741,360	2	1,482,720
Computer	Computer for RH coordination and management	42,000	1,297,380	2	2,594,760
Defibrillator	Electrical shock is given on cardiac arrest.	30,000	926,700	1	926,700
Water bath	For blood bank laboratory	6,500	200,785	1	200,785
Centrifuge	For urine test	5,000	154,450	1	154,450
Delivery table	Table for delivery	3,500	108,115	3	324,345
Electrosurgical unit	Equipment to coagulate and cut affected part on operation	20,000	617,800	1	617,800
Examination light	Illuminate patient while delivery	3,200	98,848	5	494,240
ICU bed	Special bed to treat patient on ICU	4,500	139,005	4	556,020
Infant incubator	Equipment that cure premature neonate	55,000	1,698,950	10	16,989,500
Infant warmer	Table to treat neonate with warming.	30,000	926,700	7	6,486,900
Infusion pump	Equipment that infuse medicine to patient by minimum and constant volume	6,500	200,785	13	2,610,205
Operation light	Illuminate patient without shadow while operation.	40,000	1,235,600	3	3,706,800
Operation table	Table for operation	80,000	2,471,200	1	2,471,200
Oxygen cylinder with oxygen inhalation set	Oxygen cylinder with oxygen inhalation	2,000	61,780	19	1,173,820
Patient monitor	Monitor patient vital sign and detect abnormality of patient	30,000	926,700	11	10,193,700
Phototherapy unit	Treat neonate jaundice	8,000	247,120	5	1,235,600
Suction unit	Suck patient fluid and/or blood for treatment	9,500	293,455	6	1,760,730
Ultrasound diagnostic equipment	Diagnosis patient body inside. This is used to obstetric purpose	55,000	1,698,950	1	1,698,950
Vacuum extractor	Assist delivery of patient by vacuum extraction	20,000	617,800	3	1,853,400
Water tank	Water supply tank to operation room and laboratory of Wad El Helew Rural Hospital	52,000	1,606,280	1	1,606,280
Training kit	For infection and prevention training to	50	1,545	80	123,560

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
	VMW				
Mobile phone	For monitoring and supervising system/ for low cost referral system	250	7,723	85	656,413
<b>Sub total</b>					66,900,018
<b>Year 2</b>					
VMW kit	Antenatal, delivery, and post natal care to patient by VMW	300	9,267	120	1,112,040
Training kit	For Infection and prevention training to VMW	50	1,545	120	185,340
<b>Sub total</b>					1,297,380
<b>Grand total</b>					68,197,398

## 5. Vocational Training Cluster

Equipment	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Year 1</b>					
Used car	For training on EFI (to be operated by trainees)	48,559	1,500,000	2	3,000,000
Lifting machine for automobiles	Used as a model of maintenance technology of automobiles	32,373	1,000,000	1	1,000,000
Shearing machine	For welding steel sheet	97,119	3,000,000	1	3,000,000
Oil-pressure pipe bender	The same as above	6,475	200,000	3	600,000
Screw cutting machine for a pipe and pipe vice set	The same as above	9,712	300,000	3	900,000
<b>Sub total</b>					<b>8,500,000</b>
<b>Year 2</b>					
Hydraulic floor jack (2 tons +)	Safe and quick work of automobile maintenance	9712	300,000	2	600,000
Side step tester	Inclination inspection equipment of front wheel tires	32373	1,000,000	1	1,000,000
Hydraulic press (15 tons)	Used for removal of auto bearings, etc.	9712	300,000	1	300,000
Parts cleaner	For washing parts, such as a disassembled engine	12949	400,000	3	1,200,000
High pressure steam cleaner	For removing mud and dirt on bodies	32373	1,000,000	1	1,000,000
Compressor (3HP)	For cleaning air filters and inflating tires	9712	300,000	1	300,000
Sand ballast (spray) machine	For cleaning the rust of auto-parts	32373	1,000,000	1	1,000,000
Tool kit for automobile maintenance	Sample of modern car mechanic implements	4208	130,000	5	650,000
Arc-welding rods for mild steel	For teaching-material development for income training				100,000
<b>Sub total</b>					<b>6,150,000</b>
<b>Grand total</b>					<b>14,650,000</b>

## Annex 3.4 Facilities

### 1. Planning Cluster

Facility	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Year 1</b>					
Construction of vehicle parking	For DPD	5,000	154,450	1	154,450
Rehabilitation of training hall	For DPD	5,000	154,450	1	154,450
<b>Sub total</b>					<b>308,900</b>
<b>Grand total</b>					<b>308,900</b>

### 2. Vocational Training Cluster

Facility	Application	Unit Cost (SDG)	Unit Cost (JPY)	Q'ty	Cost (JPY)
<b>Year 1</b>					
Extension of the women's classroom for food processing (student canteen)	Construction of a kitchen and implementation of short cooking-related course (e.g., training for cooks, waitresses, cashiers, etc.)		3,000,000	1	3,000,000
<b>Sub total</b>					<b>3,000,000</b>
<b>Year 2</b>					
Construction of outdoor multiple-purpose workspace	For washing cars, assembling large-sized articles, painting (with a roof), etc.		4,000,000	1	4,000,000
<b>Sub total</b>					<b>4,000,000</b>
<b>Year 3</b>					
Construction of a paint booth and apparatus and maintenance tools	For painting products for sale and painting automobile sheet metal		5,000,000	1	5,000,000
Construction of a sewing article processing training place and equipment	For establishing a model clothing factory (e.g., order-received production of uniforms)		5,000,000	1	5,000,000
<b>Sub total</b>					<b>10,000,000</b>
<b>Grand total</b>					<b>17,000,000</b>



### Annex 3.5 Budget (Japanese Side)

Cluster	Budget Item	Preparatory Phase	Year 1	Year 2	Year 3	Total (JPY)
Planning	Expert M/M		25.0	21.0	22.0	68.0
	Expert Personnel (@3 million JPY)		75,000,000	63,000,000	66,000,000	204,000,000
	Equipment (incl. Facilities)		2,795,000	0	0	2,795,000
	Direct Cost in Sudan (incl. Pilot Projects)		26,834,000	25,351,000	30,067,000	82,252,000
	Short Term Training outside Sudan		5,000,000	5,000,000	5,000,000	15,000,000
	Sub-total		109,629,000	93,351,000	101,067,000	304,047,000
Water Supply	Expert M/M		14.0	14.0	16.0	44.0
	Expert Personnel (@3 million JPY)		42,000,000	42,000,000	48,000,000	132,000,000
	Equipment (incl. Facilities)		35,171,000	2,162,000	0	37,333,000
	Direct Cost in Sudan (incl. Pilot Projects)		11,908,000	4,836,000	1,245,000	17,989,000
	Short Term Training outside Sudan		4,500,000	4,500,000		9,000,000
	Sub-total		93,579,000	53,498,000	49,245,000	196,322,000
Agriculture and Livelihood	Expert M/M		24.0	28.0	16.0	68.0
	Expert Personnel (@3 million JPY)		72,000,000	84,000,000	48,000,000	204,000,000
	Equipment (incl. Facilities)		38,793,000	578,000	0	39,371,000
	Direct Cost in Sudan (incl. Pilot Projects)		10,354,000	11,415,000	6,088,000	27,857,000
	Short Term Training outside Sudan		5,000,000	5,000,000	5,000,000	15,000,000
	Sub-total		126,147,000	100,993,000	59,088,000	286,228,000
Health	Expert M/M		15.0	12.5	13.5	41.0
	Expert Personnel (@3 million JPY)		45,000,000	37,500,000	40,500,000	123,000,000
	Equipment (incl. Facilities)		66,900,000	1,297,000	0	68,197,000
	Direct Cost in Sudan (incl. Pilot Projects)		5,715,000	5,480,000	6,518,000	17,713,000
	Short Term Training outside Sudan		4,000,000	4,000,000	3,000,000	11,000,000
	Sub-total		121,615,000	48,277,000	50,018,000	219,910,000
Vocational Training	Expert M/M		12.0	12.0	12.0	36.0
	Expert Personnel (@3 million JPY)		36,000,000	36,000,000	36,000,000	108,000,000
	Equipment (incl. Facilities)		11,500,000	10,150,000	10,000,000	31,650,000
	Direct Cost in Sudan (incl. Pilot Projects)		1,730,000	432,000	432,000	2,594,000
	Short Term Training outside Sudan		5,000,000	5,000,000	5,000,000	15,000,000
	Sub-total		54,230,000	51,582,000	51,432,000	157,244,000
Total	Expert M/M		90.0	87.5	79.5	257.0
	Expert Personnel (@3 million JPY)		270,000,000	262,500,000	238,500,000	771,000,000
	Equipment (incl. Facilities)		155,159,000	14,187,000	10,000,000	179,346,000
	Direct Cost in Sudan (incl. Pilot Projects)		56,541,000	47,514,000	44,350,000	148,405,000
	Short Term Training outside Sudan		23,500,000	23,500,000	18,000,000	65,000,000
	Grand total	119,770,000	505,200,000	347,701,000	310,850,000	1,283,521,000

### Annex 3.6 Budget (Sudanese Side)

<SUDANESE SIDE>

>Allowances (for travel, WS, Training)

Estimation of Local Component Budget (Contribution of the State Government of Kassala)		Implementation Phase May, 2011 to April, 2014 (3 years)			Unit: SDG
Sector / Major Component (except CP Salary)		2011	2012	2013	Total
		Planning (Finance)	>Allowances (for travel, WS, Training) >Running fee (Electricity, Water) >Pilot Project (Cost Sharing)	50,000	
Water Supply	>Allowances (for travel, Training in PWCT) >Training(lecture, etc) >Transport (Fuel) >Running fee (e.g. O&M of vehicles, Backhoe, Crane truck, Machine) >Construction of Garage >Expansion of Workshop >Equipment of new training center	211,410	178,950	178,950	569,310
Agriculture/IGA	>Allowances (for travel, WS, Training) >Transport (Fuel) >Running fee (e.g. O&M of vehicles)	141,045	199,259	194,609	534,913
Health	>Allowances (for travel, WS) >Training (Gov't lecturer, etc) >Running fee (Electricity, Water)	231,480	231,480	231,480	694,440
Vocational Training	>Allowances (for travel, WS, Training) >Training (Go's lecturer, etc) >Running fee (Electricity, Water)	665,000	540,000	540,000	1,745,000
<b>Total</b>	<b>SDG 3,731,163. (US\$1,203,600.)</b>	1,298,935	1,212,189	1,220,039	3,731,163

\* Exchange rate applied to above table is: 1US\$=3.1SDG=82.16JPY