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

# Workshop for the water distribution network and the role of SWC for rural water supply at Kassala State Water Corporation

## Program (Draft)

#### 1. Introduction:

On 28 of February 2011 a workshop was held for the role of SWC on the rural water supply. The participants of the workshop were mainly of JICA/CD-BHN staff of water sector and SWC engineers. Whereas the workshop schedule were as follows below:

**2. Date & Time:** 11:00 – 14:00, Monday, 28 February 2011

**3. Venue:** SWC Central Office

**4. Participants:** All engineer staff of SWC of Central Office, Chief Engineer of East Office

No.	Name	Position	Organization
1	Mr. Hashim Mohamed Abd Allateef	Acting Director	SWC Central Office
2	Mr. Abd Elgadir Ohaji	Water Coop Survey Engineer	SWC Central Office
3	Mr. Isam Eldin Khogali	Survey Engineer	SWC Central Office
4	Ms. Muhaj Balla	Geological Engineer	SWC Central Office
5	Ms. Safa Ibrahim Elhaj	Hydro geological Engineer	SWC Central Office
6	Mr. Mutaz Hassan	Geological Engineer	SWC Central Office
7	Mr. Abdulsalam Hassan	SWC Electric Technician	SWC Central Office
8	Ms. Fatima Mahmoud	WES Project Manager	WES
9	Mr. Abubakar Mustafa Ali	WES Engineer	WES
10	Mr. Anas Hammed Abdelkhier	WES Engineer	WES
11	Mr. Yousief Mohamed Ali	Chief Engineer, Engineering & Operation Department	SWC East Kassala Office
12	Mr. Kiyofumi Tanaka	JICA	CD-BHN Project
13	Mr. Sshichijo Kan	JICA	CD-BHN Project

**5. Observers:** Mr. Kiyofumi Tanaka, Leader, JICA Team

6. Facilitator: Mr. Kan Shichijo, Expert, JICA Team

7. Interpreter: Mr. Anis Ismael Adem, Assistant Engineer, JICA Team

### 8. Objectives of the Workshop:

- (1) Identify the roles in updating the inventory of the water distribution network in Kassala Town using GIS between the Central Office and other offices (East and West Offices) in Kassala Town.
- (2) Discuss the role of SWC for rural water supply facilities based on the division of works set by State Government.
- (3) Make an organization chart for the maintenance team members for rural water supply facilities.
- (4) Elect the equipment manager.

#### **Time Schedule:**

Time	Session	Facilitator
11:00 – 11:10	1. Introduction to the Workshop	Mr. Shichijo
11:10 - 11:40	2. Reviewing of the annual work plan for Kassala	Mr. Hashim
	Town	
11:40 – 12:00	3. Presentation on GIS database in Kassala	Mr. Abd Elgadir Ohaji
12:00 - 12:30	4. Discussion on SWC's roles in upgrading the	Mr. Shichijo
	inventory of the distribution network using GIS	
12:30 - 13:00	5. Discussion on SWC's role in improving rural	Mr. Shichijo
	water supply	
13:00 – 13:45	6. Selection of the team members and planning of	Mr. Hashim
	activities in rural areas	
13:45 – 14:00	7. Conclusion and closing	Mr. Hashim

#### 9. Results of the workshop

The results of the workshop is mainly based the demarcation of the responsibilities which should be taken on the sectors of investigation, planning, renovation, construction, rehabilitation and operation and maintenance according to the role of SWC on the rural water supply. Below is the table of the role of SWC on the rural water supply.

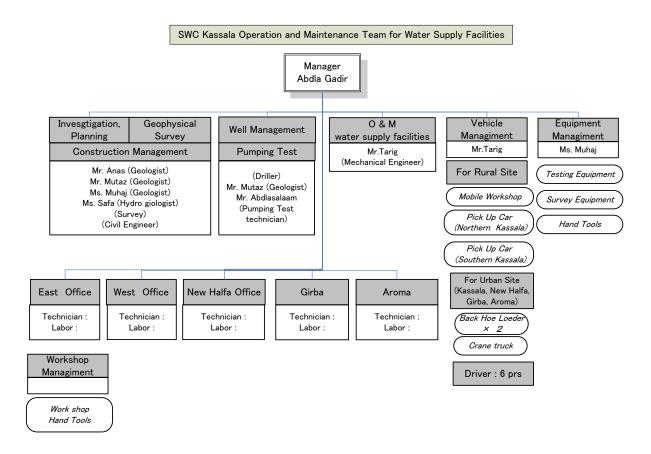
Table: Roles of Stakeholders in Tasks for Rural Water Supply Facilities

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

Category	Task	Responsibility
Renovation	Rehabilitation of bore holes by air lift tools	SWC
	Renovation of each water supply facilities (elevation tank, public fountain, feed pipe network)	SWC

According to the workshop agreement between the SWC staff and the JICA team, a team of maintenance of the mobile workshop is constructed and Mr. Abdulgadir Ohaj is going to be the director of the Rural Water Supply and the rest of rural water supply staff will be selected by Mr. Abdulgadir Ohaj.

The flow chart below gives a detail explanation of the agreed rural SWC staff which is selected by Mr. Abdulgadir Ohaj.



#### <Conference minutes>

- (1) Pipe network construction plan and GIS updating system in Kassal town.
- (Mr.Hashim) 68km of PVC pipes will be installed in the eastern side of Kassala. There are different sizes of SPC in SWC (3inch,4inch,6inch....etc)
- (Mr. Yousief) The change of pipe from now till 2015
- (Mr.Abdu algder)For the Western Area will be applied to the same study in the eastern Area
- The central offices of SWC have chosen Mr. Abdulgadir Ohaj to be in charge engineer of installing the GIS system.
- (Mr.Hashim)Mr. Abdu algder is based on the training of engineers in how to use the GPS device

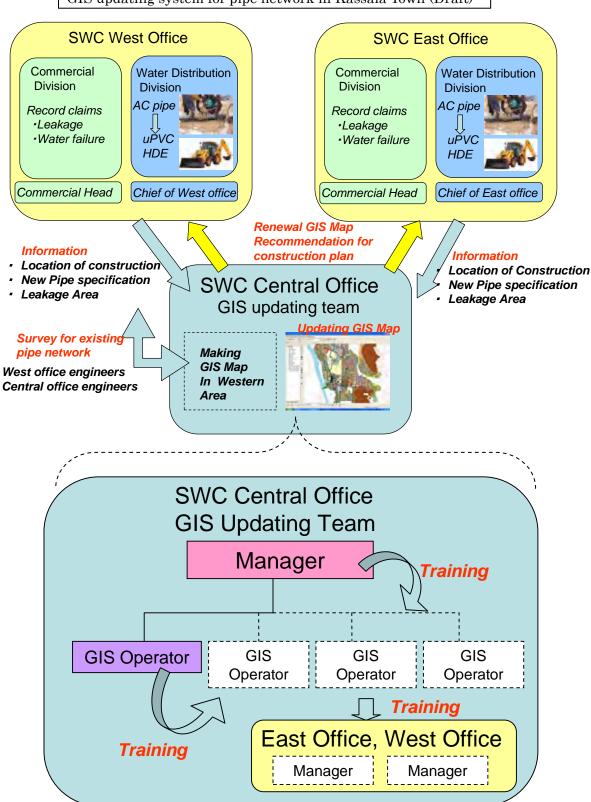
- (2) Discuss the role of SWC for rural water supply facilities based on the division of works set by State Government.
- (Mr.Hashim) The state Government approved that the local components is prepared for the JICA-CDBHN project with the agreement between the JICA-CDBHN and the state government.
- (3) Make an organization chart for the maintenance team members for rural water supply facilities. Elect the equipment manager
- The SWC have also chosen Mr. Abdulgadir Ohaj to be a head of the rural SWC and to teach the operators of the water yard by the agreement from the local community.

#### (4) Local Component

- (Mr.Hashim)Daily Incentive for field work will paid by SWC
- (Mr.Hashim)The cost of operating and maintenance will paid by SWC
- (Mr.Hashim)Fuel cost will paid by SWC
- On 08/03/2011 the state governments have approved the construction of the training center in the eastern office.
- The state government has agreed to let the SWC to work in the rural area.

電子データ付録 水-1 GIS 管網マップ更新システム (案)

GIS updating system for pipe network in Kassala Town (Draft)





# **Background about Kassala State**

- Location: Located in eastern part of the Sudan, bounded by Lat. 17.17' – 14.86' and Long. 34.09' – 37.55'
- The state divided into eleven localities (mahalias)



# State Population

- Based on 5th Sudan census population 2008, Kassala State population estimated by 1,789,806 persons, rural population representing 59% whereas urban population is 34% with some minor nomads population representing 7%.
- Study area population about 174,414persons.

# State Socioeconomic

- Due to non availability of life supporting activities Kassala state is one of the poor densely populated state.
- The agriculture and animals nearing constitute the occupations of the state population.
- Most of the study area population governmental officials.
- Trading and other activities.

# State Climate

- · Kassala State lied in the arid and semi arid region.
- Rainfall within the state varies, in the southern parts starts in May – June, while in the northern parts in June – July and usually ends in October. Rainfall increase from around 150mm/y in the north to more than 300mm/y in south.
- Evaporation about 12mm/y (piche)
- Wind direction and speed From north to east in dry season and from south to west in rainy season, with speed 6.5m/h
- Daily mean min. temp. 23c and daily mean max. temp.37c
- Humidity about 36%, may increase in rainy season

# **Background About Study Area**

- Location of study area
- Lat. 15.42 15.50
- Long. 36.37'- 36.40'
- Kassala city is the capital of Kassala State.



# Water Services Coverage in Study Area

- Boreholes are the main source for drinking water.
- The total number of boreholes for drinking water are(37) thirty seven.
- Total yield per day about 20522 m³.
- The water supply network almost covered all the area.
- More than 90% of population have house connection, less than 10% have public water points (kiosk).



# Continued

- Average consumption for house connection 49 L/c/o.
- Average consumption for people obtaining water from public water point 23 L/c/o
- The boreholes water that collected in the main water treatment plant are treated by chlorine gas, while that water from boreholes directly feeding the network are not chlorinated.



# Problems

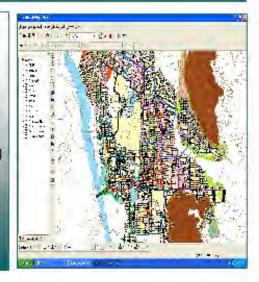
- The existing drinking water supply network and it's components are not represents or located on map.
- The existing water supply network consists of Asbestos Cement pipes (AC) without knowledge their lengths and exact locations and sizes.
- Peripheral residential areas of the city have a lack of water supply.





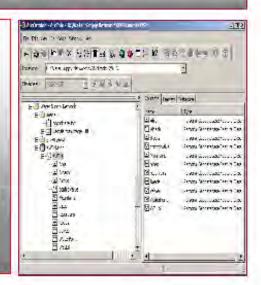
# Objectives

- Production of digital map for the study area including the existing water supply network with all components.
- Design and building database for the existing water supply network with all components.
- To assess the existing drinking water network and it's components in term of equity and adequacy of distribution main and sub-main pipelines.



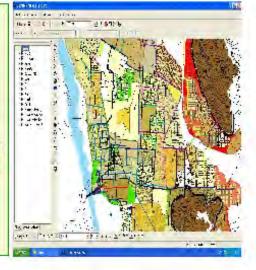


- Data collection from (K.D.W.C., census office and field survey)
- Design and building database in (ArcCatalog)
- Editing, digitizing and presenting in (ArcMap)



# Results

- · Production digital map
- · Building database
- The total length of the existing network 148km, from which 82km or 56%
   AC pipe and the rest is either UPVC or steel pipe
- · Losses estimated by 35%.



# Recommendation

- Building a Geographical Information System (GIS) for Kassala Town.
- · Updating GIS System
- Following the scientific procedures in the design and implementation of drinking water networks.
- Capacity building on software of Geographic Information System (GIS).

## 電子データ付録 農-1 JICAスーダン駐在員事務所作成資料

#### "Capacity Development Project for Provision of the Services for Basic Human Needs in Kassala"

<Agriculture and livelihood improvement component>

Action Plan	Priori		Possible activities	Remarks by State Ministry of Agriculture,	Extension	
& pilot site	tv	Major issues	(Suggestion from JICA Experts)	Forestry and Irrigation, Kassala	workers/ office	Other donors
<horticultural< th=""><th>1</th><th>♦ To increase yield</th><th>• Improvement of <b>production</b></th><th>į į</th><th>Crop – 5</th><th>No donors</th></horticultural<>	1	♦ To increase yield	• Improvement of <b>production</b>	į į	Crop – 5	No donors
zone>	1		techniques of vegetable	horticulture sector Kassala, and improvement of	Rural - 9	supporting in
Kassala		production cost	seedlings e.g. onion, tomato	production techniques of onion, tomato would	Kurar - )	this area
H-1:		♦ To introduce new	• Introduction of <b>new crop</b>	increase productivity and reduce production		uns area
Establishment of		cash crops	rotation pattern, such as	cost. Many farmers would come back to		
comprehensive		♦ To diversify	leguminous crops and banana.	horticultural sector if this intervention succeeds.		
technical		cropping patterns	<ul> <li>Promotion of cash crops such as</li> </ul>	When introducing new crops, 1) consumer		
package to		♦ To identify suitable	alfalfa and banana: Banana	interest, 2) marketability, 3) effect of the new		
increase		varieties	should be targeted for export →	crops to soil/environment should be considered.		
productivity of		v and the second	quality of export standard is	Applied research should carried out before		
horticultural			required	extension to farmers.		
crops			1			
H-3:		♦ To raise awareness	• Training on packing, grading,	•	Crop – 5	No donors
Dissemination		of wholesalers	raising awareness,		Rural - 9	supporting in
and training of		about proper	cooperative shipping, how to			this area
post-harvesting		handling of goods	cope with pest problem are			
techniques		about of farmers	necessary.			
•		about proper	<ul> <li>Value adding should be directed</li> </ul>			
		post-harvesting	to <b>export quality</b> .			
		techniques.				
< Traditional	2	♦ To improve water	In addition to the improved	At present, 5-6 water harvesting techniques are	1 extension office	Practical
Rain-fed >		harvesting	water harvesting techniques	available, but they are just slight improvement	at Swage (Eastern	Action,
Rural Aroma		techniques	currently disseminated by	on farmers' traditional knowledge. Therefore,	bank of Atbara	ERDB,
(Eastern side			TTEA, to conduct land survey	optimum method of water harvesting has not	River)	ACORD, SRC.
of Atbara River)			to determine appropriate	yet identified. There are still large needs for		German Agro
T-2:			height of dikes so that amount		Crop – 1	Action, GOAL.
Dissemination of			of collected water and	To increase cropping areas, traditional rain fed	Rural - 0	Plan sudan
appropriate			penetrated water to be balanced	sector is the most effective.		
water harvesting			(in order to reduce water loss).	Majority of vulnerable people are engaged in		
techniques				traditional rain-fed sector.		
				• Cost for construction of dikes is: 0.3 – 0.5 SDG		
				per 1m.		
< Flood	3	♦ To increase yield of	• To introduce improved		Crop – 1+3	IFAD
irrigation >		selected crops by	techniques for sorghum	nutrients and has high potential of high	Rural - 3+1	ACORD
Rural Aroma		introducing proper	production.	productivity (20 sacs of sorghum is potential,		
		techniques (e.g.	• To introduce organic cotton	while at present it harvests only 8 sacs per		
F-2:		diversifying crop	and sunflower as new cash	feddan).		

Action Plan & pilot site	Priori tv	Major issues	Possible activities (Suggestion from JICA Experts)	Remarks by State Ministry of Agriculture, Forestry and Irrigation, Kassala	Extension workers/ office	Other donors
Establishment of comprehensive technical package to increase productivity of several crops	v	patterns, introduction of new cash crops)  Currently sorghum is focused for food security, but there's no support to cash crop production.	crop. The production could be organized by each Mesga and marketing shall be done as a group.			
< Mechanized Rain-fed > Wadel Helew  M-2: Dissemination of appropriate water harvesting techniques	4	❖ To improve water harvesting techniques	<ul> <li>To cultivate land when cumulative rainfall amount reaches 100mm.</li> <li>Small-holder farmers shall be organized in groups and renting agricultural machinery as a group.</li> <li>Intermediate agricultural technologies and agricultural machinery shall be introduced to empower the small-holder farmers.</li> </ul>	<ul> <li>Most of farmers in mechanized rain-fed area are large farmers who have approximately 1,000 feddan. On the other hand, there are small-holder farmers whose land ranges from 5 – 50 feddan, and they are very poor. They cannot use agricultural machinery until large farmer finishe, and this delays their agricultural practices, making their agricultural not profitable. They also work as casual labors at large farmers' fields.</li> <li>These two localities accommodate most of the refugee population in the State.</li> </ul>	2 extension offices will be constructed in Wadel Helew locality along the border with Gadaref State, within 4 months from now using the budget of Agricultural Revival Programme. Crop – 2 Rural - 0	Plan Sudan in Girba, IFAD in Nahr Atbara are supporting traditional rain-fed farmers. As for mechanized rain-fed sector, UNHCR/ACO RD are supporting refugees who has agricultural land.

## 電子データ付録 農-2 農業・生計向上分野パイロット活動の積算と実施スケジュール

## 1. Development of Horticultural Extension towards Profitable Agriculture

「儲かる農業に向けた園芸農業普及活動の増進」

	1. Horticulture Zone			J	FY 201	1			]	JFY201				]	JFY 201	3	
	Item	Sub-item	Unit Cost	Q'ty		Days/ time	Total (SDG)	Unit   Cost	Q'ty	Unit	Days/I		Unit Cost	Q'ty		Days/ time	Total (SDG)
1	Supplementary Survey (Baseline)	RA	60	3	person		1800	- Cost	-	-	-	- -	-		_	-	-
	(Mid-term Eva)	RA	- 1	-	-	1	-	60	3	person		1800	-	-	-	-	-
	(Final Eva)	RA	- 1	-	ı -	-	-	-	-	-	- '	-	60	_	person		ſ
_		Stationaries	100		set	4		100		set	4	400	100	1	set	4	400
2	Training	Trainer (Internal)	100 200		person		4400 4800	100 200		person person		2000 4800			ı		i
		Trainer (External Training	12		person person		10560	T T		person							ĺ
3	Model Extension Activities	Training	12		person		42240			person		19200					!
		Shading (Rent)	50		set	4	2200	50	16	IT.	4		50	5	set	4	1000
4	Other Extension Activities (Media)	Radio Broadcast	50	10	set	2	1000			set	2		50		set	2	
		Video Making	300		set	2	3000	1		set	2	3000			set	2	
		Video (DVD)	51 51	100 100		4	2000	5	100		4	2000	5 5		set	4 4	
		Leaflets Posters	20		set	4	2000 1600		10 20	set set	4 4	200 1600	20		set set	4	L
5	Study Tour	Transportation	100		set	1	400	100		1	1		100		set	1	400
	Workshop for Marketing Activities	Training	12		set	2	1200			set	2		12		set	2	
7	Monitoring Form		100		person	4	4000	100	10	person	4	4000	100	10	person	4	4000
8	Overall Tools for the Pilot Activities	Chemical Sprayer	100		set	4	1200			5					!		ĺ
		Prunning Scissor	35	30	set	1	1050			}				!			!
	Onion Production at the Demonstration	n Farm	420	0.6	6-11	2	504	120	0.6	6-11	اړ ا	1008	420	0.6	6. 44	٠,	1008
	Seed     Urea (Fertilizer)		150		feddan feddan		180			feddan feddan		360			feddan feddan		L
	3) Foliar Fertilizer (NPK) ①		150		feddan	2	180	150		feddan		36	15	0.6	feddan	•	
	4) Foliar Fertilizer (NPK) ②		15		feddan		18			feddan					Ifeddan	-	1
	5) Herbicide		45	0.6	feddan	2	54	45	0.6	feddan	4	108			feddan	4	108
	6) Fungicide		70		feddan		84		0.6	feddan	4	168			feddan		
	7) Pesticide (Insecticide)		180		Ifeddan					feddan					feddan	4	
	8) Seedling Tray (84 Cells)		14000		feddan			14000		feddan		5600	14000	0.2	feddan	4	11200
	9)Vermiculite 10)Peat Moss		280 280		feddan feddan		224 224	280 280		feddan feddan		224 224	-				í -
	11) Cow Pea (Banker Plants)		30		feddan		48	30		feddan		48	_	1	1 1		) [
	12) Millet (Banker Plants)		20		feddan		32	20		feddan	4		-				! -
10	Off-Season Tomato Production at the I	Demonstration Far	m					,		{					,	•	[
	1) Seed		375		feddan		600		0.4	feddan	4	600	-	-	! -		j -
	2) Urea (Fertilizer)		75		feddan		120			feddan		120	-	-	- 1	-	) -
	3) Foliar Fertilizer (NPK) ①		151		feddan		24	15		feddan			-	-			
	4) Foliar Fertilizer (NPK) ② 5) Fungicide		15 70		feddan feddan		24 112	15 70		feddan feddan		24 112	-				í -
	6) Pesticide		219		feddan		350			feddan			]		! [		) [
	7) Seedling Tray (84 cells)		14000		feddan		11200	14000		feddan	4		-				! -
	8) Vermiculite		280	0.2	feddan	4	224	280	0.2	feddan	4	224	-		٠.	٠.	- 1
	9) Peat Moss		280		feddan		224	280	0.2	feddan	4	224	-	-	! -		i -
	10) Cow Pea (Banker Plants)		30		feddan		48	30		feddan		48	-	-	-	-	-
	11) Millet (Banker Plants)	F	201	0.4	feddan	4	32	20	0.4	feddan	4	32	-	-	ı -		-
	Potato Production at the Demonstaration 1) Completed Tubers	on Farm	2340	0.6	feddan	2	2808	2340	0.6	feddan	4	5616					í .
	2) Urea (Fertilizer)		150		feddan		180	150		feddan	4	360					
	3) Other Fertilizer		280		feddan		336	280	0.6	feddan			-	-		-	-
	4) Pesticide		300		feddan	2	360	300	0.6	feddan		720	-	-	١ -	٠.	-
	5) Herbicide		70	0.6	feddan	2	84	70	0.6	feddan	4	168	-		-	-	i -
	Okura Production at the Demonstration	n Farm	1.40	٠.	6.41	_	, , ,			6. 11	2						!
	Seed     Urea (Fertilizer)		140 75		lfeddan feddan	2 2	112 60			feddan feddan		112 60			! -		[ ]
	3) Other Fertilizer		50		feddan		40			feddan			] [	. [	-		1
	3) Herbicide		45		feddan		36			feddan			-		i -		! -
	4) Fungicide		35	0.4	feddan	2	28		0.4	feddan			-		ı -	-	-
	5) Pesticide	_	45	0.4	feddan	2	36	45	0.4	feddan			-	-	-		i -
	Alfalfa Production at the Demonstarati	on Farm	1		!			0.75		١	4						Į.
	Seed     Urea (Fertilizer)		- !	-	-		-	850 35		feddan feddan	4	1360	-	-	, -		ļ -
	3) Folial Fertilizer (NPK) ①			-	[ ]		-	30		feddan		56 48	[	: :	! -		i I
	4) Folial Fertilizer (NPK) ②		_ i	-	1		-	50		feddan			-		-		Ĺ
	5) Pesticides ①		- !	-	! -	- 1	-	13		feddan			-		-		! -
	6) Pesticides ②		- !	-	-	-	-	46	0.4	feddan			-	: -	۱ -	-	-
	Advanced Training on Grafting of Citro	ıs	l i		ĺ					}	i :			i			ĺ
	1) Seedlings of Grapefruits Trees		- 1	-	ı -		-	10	200	1			-		-		
	Seedlings of Orange Trees     Rootstock (Sour Orange)		- !	-	! -		-	10 10	200 200	seedlin		8000	l -				-
	Mango Production		-	-	-		-	10	200	seedlin	4	0000	l -				i -
	Seedlings of Mango Trees		. i	_			_	12	200	seedlin	4	9600	۱.				١.
	Banana Production				!					1	1 1	, 500					Į.
	1) Sucker of Banana		!		<u> </u>			5	200	sucker	4	4000	<u></u> _	<u></u>	<u> </u>	<u></u> _	<u> </u>
	Total					113,	690				117,9	921				29,	948
														Grane	d Total	261	,559

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Activities					201										2	012												2	2013		_			
	╙				_		201	_	_										2012	_									_	JFY 2	_			
1. Horticulture Zone	Apr	May	Jun	Jul	Au	g Sep	Oc	Nov	/De	c Jar	Fe	b Ma	ar Ap	or May	Jun	Jul	Aug	Sep	Oct	No	v De	c Ja	n Fe	eb N	1ar	Apr	May	Jun	Jul	. Au	g Se	p Oc	et No	ov D
1. Supplementary Survey (Baseline)		Ŀ	<u> </u>		1	$\perp$	L	1	Ш			Ш		1		1	L.	Ш	1	L	1	1	L.	Ш						⊥.	Ш		Ш	⊥
(Mid-term Evaluation)			ı	Li				ľ	П					_	Ιi	l i	Li		Ιí	Ť	1								$\prod$	Τi	$\coprod$			
(Final Evaluation)		_	Г	1	П	$\Pi$		$\Gamma$	П		$\Gamma$		П		1			$\Box$	11	1	Т	П	Г		П				П	Тт	П	$\mathbf{T}$	$\blacksquare$	. [
2. Coordination among Related Administration		-	•	T i		Т	Τī	T	Π	П	П	П		П	Πī	11	Ti	$\Box$	Τ:	Πī	T		П	П	П	$\neg \neg$	Ī	П	Π	Ti	П	П	П	
3. Implementation of Workshop to Detect Promising C	rop		F	Πï	П	П	Π	П	Π	П	П	П	П	П	Πï	Ti	П	$\Box$	Πi	Π		П	П	П	П	$\neg \lnot$	П	П	П	Ti	П	П	П	
4. Procurement of Equipments/External Specialist	Г	ı	F	-	Ti	T	Т	Τĩ	П	7	П	т	П	Ti	1	Τï	11	T	Τï	Т	Τì	Ti	T	T	П	71	T	Πī	П	7	$\Box$	Ti	$\top$	T
5. Conclusion of a Contract with Farmers				Τ:	Ti	$T^{\dagger}$	Т:	T	П	11	T	+:	Ti	Ti	Τ:	T	11	$\Box$	ī	Τ:	T	Ti	Т.	7	П	71	T	П	Ħ	T:	$\Box$	$\top$	$\top$	T
6. Workshop for Marketing Activities	$\Box$		L	-	T	17	T	十	П	#	Ħ	T	⇈	十	+:	一	т:	Tt	$\vdash$ $\vdash$		T	T	T	Ħ	П	$\dashv$	т	$\vdash$	Ħ	+:	$\top$	$\top$	$\dashv \uparrow$	T
7. Preaparation and Operation of Demonstration Farm	_	Ħ	++	ti	++	17	Ħ	++	Ħ	11	₩	Ti	┰	++	ti	++	ti	††	1	Ħ	++	T	Ti	T	7	╗	+	Η,	Ħ	+	+	┰	$\rightarrow$	+
7.1 Land Preparation		Ħ	Ħ	<u>-i</u>	++	1-1	t	†:	1	14	Ħ	Ti	Ħ	++	ΤŤ	<b> -</b>	ΤŤ	1=1	÷	Ť	İ÷	t	ıŤi	Ħ	Ħ	71	╁	H	Ħ	Ħ	Ħ	$\pm$	+	+
7.2 Seeding Okra	$\vdash$	┢┯	Ħ	1	++	Ħ	╆	+:	H	++	Н	╈	+	++	+	+	++	+	++	┰	++	t	+	+	H	71	+	H	Ħ	+	Ħ	+	+	+
7.3 Seeding Onion	т	+	Ħ	ŦĒ	÷	++	╁	Ħ	₩	₩	H	₩	Ħ	+	++	╁	٠.	+>	H	H	ti	ti	+	+	Η	+	+	H	H	+	₩	+	+	+
7.4 Seeding Onion 7.4 Seeding Tomato (Off-season)	$\vdash$	-	Hi	++	÷	++	┿	ti	1	++	H	++	Ŧ	Ŧ÷	++	Η'n	++	+}	Η÷	H	÷		╫	+	Н	+	+	H	H	+	╆	Ŧi	_	+
	۳	ᄔ	H	쑤	H	++	+	÷	Ħ	+	Н	+	Н	+÷	쑤	÷	+-	₩	H	۲	6	H	+	4	H	ᅫ	+	H	₩	++	₩	₩	₩	+
7.5 Seeding Alfalfa with Citrus or Banana	$\vdash$	H	H	H	++	+>	╬	++	н	++	₩	╁	++	++	╁	++	<del>+!</del> -	₩	┷	H	F	₩	₩	+	Н	∹⊢	+	₩.	₩	+÷	₩	+	+	+
7.6 Planting Tubers of Potato	H	H	₩	+;-	₩	+	ŀī	1	н	+:	₩	+	++	+-	+;-	++	<del>L'</del> -	₩	<b>Ļ</b> ⊏	H	+	┾	Н	4	Н	┵	4	⊢-	₩	+;	₩	+	+	+
7.7 Transplanting Onion	Н.	H	44	∺	₩	<u> </u>	H	μ.	Н	44	44	4	4	4	╁	+-	H	+=	۲	Ϧ	4	+	Ц	1	Ц	+	4	╙	$\vdash$	┿	₩	4	┿	+
7.8 Transplanting Tomato (Off-Season)	щ'	Ļ	ᄔ	Ļ	44	4	Ļ.	44	Ц	44	₽	4	4	4	Ļ	44	Ļ	44	ᄔ	Ļ	4	Ľ	耳	4	Ц	$\perp$	Ļ	ᄔ	+	<b>∔</b> ∔	4	4	Ļ	4
7.9 Harvesting Okra	ш	L	Ш	1	Ľ		ri.	11	ш	4	14	4	Ц	4	<u>↓</u>	1	L	<u> </u>	•••	L	1	Ľ	Ш	4	Ц	Ш	4	ᄔ	Ш	44	Щ	4	Щ.	4
7.10 Harvesting Onion	ш'	$oldsymbol{ol}}}}}}}}}}}}}}}}}$	L		L	ш	Щ	ш	1	ш	Ш	ш					LL	<u> LL</u>		L		L	Ш	Ш	Ш			Ш	Ш	Ц.	ш	Ш	Щ	Ш
7.11Harvesting Tomato (Off-Season)	1	1	Li	1	L:	Ш	1	Ш			Ш		1-5		1	1.	1	$\perp \rangle$	l i	1	L.	Li				- 4 - 6	ŧ	Ш		1	Ш	Li	1	
7.12 Harvesting Potato	-		Li	1	П	$\Gamma$	Г	П	Π	1	•	Т	П		1	Ιi		$\Pi$	Ιi	T	Li	Ιì	7	Т		Ţ	7	П	Π	T	$\prod$	П	T)	T
7.13 Harvesting Alfalfa	$oldsymbol{\Box}$		l i		П	$\Box$	Τ.	П	П	П	П	П	П	П		Ti	П	П	Πï	П	П	П	•••	•	•		•••	• • • •	•	•	4-4			
8. Training on Technologies of Onion Cultivation	$\Box$		ī	1:	ī	$\Box$	Ħ	T	П	17	Ti	11	Ti	Ti	1:	Ti	11	T	ī	Τ.	Ti	П	П	T	П	:1	T	П	$\Box$	1:	П	Ti	1:	T
8.1 Improved Seedling Management & Transplant	ting	Γ.	TT	T:	T	1-	Ħ	T	П	11	T	T	T	Ti	T:	T	т.	T	Т	Τ.	$\dagger \tau$	T	П	π	П	$\Box$	T	$\sqcap$	$\sqcap$	T	$\top$	$\top$	т:	T
8.2 Comparison of Basin Irrigation and Furrow Irri		n l	T	Ti	T	17	Fi	++	Ħ	Ti	ㄲ	寸	$\neg$		Ti	++	Ti	$\vdash$	$\vdash$ $\vdash$	Ħ	+	T	т	T	7	╗	$\neg$	$\vdash$	$\sqcap$	T	$\top$	┰	Ti	十
8.3 Crop Manegement (IPM, Weeding, etc.)	i i	Πī	۲	ti	۲,	+	Ti	+	Ħ	Ti	++	Ti	++	++	ti	++	ti	+	++	ti	++	+	Н	Ħ	1	71	Ħ	++	${}^{\dagger}$	Ħ	+	+	ti	+
8.4 Harvesting & Postharvest treatment	т	т	۲.	1	+:	++	╆	+:		++	+:	+	+	+:	1	+:	++	+ >	+:-	T	+:	+:	Н	+	Н	7	+	+:-	H	+	+	+:	+	+
9. Training of Technologies of Tomato Cultivation	т	-	Ħ	++	Ħ	++	┿	Ħ	H	++	Ħ	++	+:	+	++	tt	++	↔	H	+	tt	ti	+	+	Н	-	-	H	H	++	╆	Ħ	+	+
9.1 Improved Seedling Management and Transpla	لب	Ц	Hi	++	÷	++	₩	H	H	.++	H	₩	H	÷	++	÷	++	+ }	H	H	Η÷	H	╫	+	Н	+	+	H	H	++	╫	H		+
		g	H	쑤	H	++	۲	₩	Н	++	Н	廾	Н	÷	쑤	÷	+-	₩	H	۲	+	H	$\mathcal{H}$	+	Н	ᆛ	+	H	₩	++	₩	₩	++	+
9.2 Crop Manegement (IPM, Weeding, Fertilizer e	tc.)	屵	٠,	۲÷	++	++	H	++	н	+:	++	7	++	++	۲÷	++	+-	++	++	H	++	++	Н	+	,	╌	+	Η-	++	+⊹	╂	+	H	+
10. Training of Technologies of Potato Cultivation	H-'	Ľ.	┷	+;	┿	++		++	н	+;	╨	+;	-		+;	1	+⊹	11	1	₽;	┷	4	Ж	4	ч	┵	4		₩	+÷	44	++	÷	
10.1 Preparation and Planting of Tubers	ٺ	Ľ	╙	+÷	╨	+1	Ľ	╨	н	Ŧ.	44	Ŧ;	4	4	+÷	╨	L:	44	┷	L.	4	¥	44	4	Ц	4	4	╙	H	+÷	44	4	<u> </u>	+
10.2 Crop Management (IPM, Weeding, Fertilizer,	etc.)	Ļ	L	1i	L	11	Ļ.	Н.	ц	14	ш	16		_!_	1i	1	L.	11	ļ!	Ļį	ļ!	Ŀ	_	1	Ц	Ĥ	4	ш	н	Τ÷	44	-		4
10.3 Harvesting & Postharvest Treatment	لبا	┸┸	L	┷	1	44	Ļ.	11	Щ	<u>۔</u>	1	┷		1	┷	11	_بــــــــــــــــــــــــــــــــــــ	44	1	ـــــــــــــــــــــــــــــــــــــــ	<u> </u>	<u> </u>	Щ	4	Ш			LL	Ц	┷	Ш		Щ.	_
11. Training on Technologies of Okra Cultivation	لسا	╙	Ľ	┸	Ľ	Ш	ш	Ŀ	ш	ш	Ц	ш	Ц.		┸┸	<b>↓</b> .	ᄔ	₩	L:	┸	Ľ	Ľ	Щ	Щ	Ш		_ل_	Ш	Ц		ш	11:		_
11.1Crop Manegement (IPM, Weeding, Fertilizer of	etc.)		Li	l I	Ľ	11	Ш	ш	Ш	ш	Ш	ш	Ш		l I	Li.	ш	$\perp \downarrow$	Li.	L		Li	Ш	Ш	Ш			Ш	Ш		Ш	Ш		
11.2 Extraction of Seeds	-	ı	Li	1	Li	11	Г	H	Ш	1	Ш	1		l i	1	l i	1	$\Pi$	Li	1	Ьi	Li	Ш	Ш	Ш		1	Ш	Ш		Ш	Ш	Į i	1
12. Training on Technologies on Alfalfa Cultivation		П	Γī	1:	Γï	$\Box$	Τ:	П	П	П.	П	Т:	Ti	Ti	1:	Ti	Π.	Т	ı	Ι.	Τï	Ti	П	П	П	11		П	$\prod$	T:	$\mathbf{T}$	П	Т.	•
12.1 Comparison of Cutting Heights	П	Π	ΠÏ		П	$\Box$	Т:	Π	П	П	Π	П	П	Πī		Ti	П	П	ΠÏ	П	Ti	Т	•		•••	•	Т	П	П	T:	$\Box$	П	T	
12.2 Crop Manegement (IPM, Weeding, Fertilizer	etc.)	П	П	Ti	П	T	Ti	T	П	T	T	П	т	T-	Ti	77	Ti	$\Box$		Ti	T	т	П	7	П	$\neg \neg$	Т	Т	П	$T_{i}$	П	7		T
13. Training on Technologies of Grafting Fruit Trees	T i		П	Ti	1	17	Ti	T	П	Ti	Τ!	Ti		1	Tì	1	Tī		!	Tì	1!		П	T	!	$\neg \neg$	T		П	Ti	П	$\top$	$\equiv$	-
12.1 Grafting technologies for Citrus	$\neg$	$\sqcap$	Τ.	T	Т:	T	T	T	П	Ti	П	17	т:	Т:	T	Т:	TT	TT	Τ:	j.	•	П	Т	T	П	ᄀ	┰	T	Ħ	TT	$\Box$	$\top$	$\top$	-
12.2 Grafting technologies for Mango	г	Ħ	Τ.	T	T	11	T	+:	Ħ	17	т	+	т:	+:	T	T:	İΤ	17	<b>T</b>	Τ,	•	Ħ	+	十	П	7	$\top$	Η:	Ħ	T	Ħ	+:	+	٠.
14. Training on Banana Preventing Nematode Infection		⇈	ΤĊ	++	Ħ	+:	++	Ħ	Ħ	++	Ħ	+	T	+:	++	ti	++	$\mapsto$	ti	1	ti	Ħ	Ħ	$^{+}$	П	71	-	Ħ	Ħ	++	+	+;	+	+
13.1 Stearization of Sucker	H	Н	H	++	ti	+5	H	H	H	++	H	Ħ	H	ti	+-	ti	++	+	Ηì	۲	ti	H	+	+	H	+	+	H	1	++	+	+		+
13.1 SteanZation of Sucker  13.2 Crop Management (Land Use, Deep Planting	066	nole-	rie '	7000	, T	++	++	H	۲	+	H	╁	+	+	††	t	t:	Ħ	+	۲:	ħ.	.††	Н	+	H	╫	+	H	+	+:	Ħ	+	+	+
15. Conducting Model Extension Activities (OJT)	01.5	иске	ımı	Jeptr	1)	++	H	₩	H	H	₩	╁	+	++	۲÷	++	H	₩	H	H	+÷	₩	+	+	+	╫	+	H	₩	++	+	+	H	+
	H	⊬	H	∺	٠	₩.		1	<del></del>	+	₩	╁	+	++	∺	÷	÷	++-		<del>                                     </del>	++	┰	╫	+	Н	↤	⊬	H	${}^{+}$	÷	+	+	+÷	+
15.1 Model Extension Actitities on Onion (OJT)	$\vdash$	⊬	H	₩	۲	<del>- [7]</del>	17	17	H	L)		H	+	+!-	₩	++	H	+;-	٠٠٠	<del>  •</del>	17	H	1	1	ᆈ	+	⊬	H	+	$+\dot{\cdot}$	₩	++	+i	+
15.2 Model Extension ctivities on Tomato (OJT)	Н-	⊬	H	₩	+¦	₩	₩	Н	Ţ;	Ţï'	["	77	Ή.	+:	₩	┼	₩	₩	⊬	₩	1	77	77	4	"	$\dashv$	+	H	₩	+	₩	+¦	+	+
15.3 Model Extension Activities on Potato (OJT)	لبر	₩.	H	╀	H	#	11	<b>T</b>	17	111	+;	4	+	++	╀		₩	₩	<b>L</b> .				4	4	H	4	μ.	H	₩	₩	#	+;	+	+
15.4 Model Extension Activities on Okra (OJT)	ш	₽	L			1	1.1	<b>7*</b> (*	Ψ	4	H	4	ų.	+;	₩	1			•	•••	۲.	Ц	4	4	H	4	Ц_	Li.	H	44	4	4	4	4
15.5 Model Extension Activities on Alfalfa (OJT)	ш	$\Box$	Li	1	Ļi	44	щ	ш	Ц	11	Į,	4	Ц	نل	1	Ļi.	Į.	11	Ļ	ĻĻ	•••	4::	4-1	•••	111	•	•	•••	**	44	$\perp$	4	_!	
15.6 Model Extension Activities on Citrus and Ma		(OJT	(1	止	Ļ٠	ш	Ц	₩.	Ц	Ш	ш	4	ш	ىل	<u> </u>	┷	<u> </u>	ᄔ	ᄔ	止	<u>+1</u>	• • •				• • •		•	+	1!	Ш	Щ.	1	4
			1 1	1 1	1 .	14	17		1 !	1 !	1 )	1!	1.	1 .	1!	11	1 !	1 l	11	1 !	•	4-6	-	•••	4-1	• • •			t !	1 '	11	1	⊥!	$\perp$
15.7 Model Extension Activities on Banana (OJT)	ســــــــــــــــــــــــــــــــــــــ	ш			٠.								_																					
15.7 Model Extension Activities on Banana (OJT) 16. Implementation and Monitoring of Demonstration			Ħ	Ľ	Ħ	IJ	Ц	П	П	П	T	$\mathbf{L}^{i}$	Ti	Ī	Li	Πī	Ш	П	П	Ľ	┰		$\mathbf{I}$	I	П	П	I	T	L	I				_
	Farm	H											•	, ,		-1-			-							• • •	-							+

## 2. Revival of Cash Crop Production in Gash

「ガッシュ川洪水灌漑地区における換金作物の再活性化」

	2. Flood Irrigation Zone			JFY 2	011			J	FY2012	2			J	FY 201	3	
	Item	Sub-item	Unit Cost	Q'ty   Uni	Days/ time	Total (SDG)	Unit Cost	Q'ty	Unit	Days/ time	Total (SDG)	Unit Cost	Q'ty	Unit	Days/ time	Total (SDG)
1	Supplementary Survey (Baseline)	RA	60	3 perso	n 10	1800	-	-	-	-	-	-	-	-	-	-
	(Mid-term Eva)	RA	-	- 1 -	-	) -	60	3	person	10	1800	-	-	-	-	1 - 1
	(Final Eva)	RA	-	. i .	-	} -	-	_ 1	_	-	١.	60	3	person	10	1800
		Stationaries	100	3 set	1	300	100	3	set	1	300	100	3	set	1	300
2	Monitoring Form	Stationaries	100	10 perso	n 3	3000	100	10	person	3	3000	100	10	person	3	3000
3	FFS to Faciliate Cotton Production	Training	12	180 set	3	6480				ı					l	.
4	Workshop for Facillitatation	Training	12		1	1080	į			l					l	
	Workshop for Marketing Activities	Training	I	i	}	(	12	90	set	1	1080				l	i
	Workshop for Concluding Activities	Training		i	ł	}				l	1	12	90	set	1	1080
5	Training	Trainer (Interna	1)	ı	(	)	100	5	person	3	1500	100	5	person	3	1500
		Trainer (Externa	al	I	(	)	200	2	person	3	1200	200	2	person	3	1200
		Training		I	{	}	12	100	person	3	3600		l	l		l
6	Model Extension Activities	Training		ı	}	(	12	300	person	3	10800	1	300	person	3	900
		Shading (Rent/d	ay)		)	(	50	3	set	1 3	450	50	3	set	3	450
7	Other Extension Activities (Media)	Radio Broadcas	50	3 set	3	450	50	5	set	1 3	750	50	5	set	3	750
		Video Making	300		3	2700	300	5	set	3	4500	300	5	set	3	4500
		Video (DVD)	5	100	3	1500	5		set	1000	25000	5	5	set	1000	25000
		Leaflets	5	100	3	1500	5	51	set	100	I 2500	5	10	set	100	5000
		Posters	20	20	3	1200	20	20	set	3	1200	20	20	set	3	1200
8	Study Tour	Transportation		!	<b>_</b>	}	100	3	set	1	300	100	3	set	1	300
				!	)	ļ l				ı				l	I	!
9	Monitoring Form		100	10 perso	n 4	4000	100	10	person	1 4	4000	100	10	person	4	4000
	Total					24,010					61,980					50,980
													Grand	l Total	136	,970

·	L				2	011										2	012											20	013						L	2014	1
						_		2011										_	JF	Y 201	2	_										2013					_
	Ap	rМa	ıy Ju	ın J	ul A	Aug	Sep	Oct	Nov	Dec	Jar	ı Fel	b Ma	ır Ap	or Ma	ıy Jui	ı Ju	ıl Aı	ug Se	p Oc	t No	v Dec	Jar	Feb	Ma	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	M
2. Flood irrigation Zone							1		ı		L	ı					l				Ι.	I	1		1	Ш	Ľ	ı	Ц	ı		Ľ	ı			ı	
1. Supplementary Survey (Baseline)	$\prod$	li	•			П	ī		Ιï	$\prod$	Li	ŢΪ	l.	П	Ti	H	Ì				П	П	T	L	Πī	Ш	L	Ī	П	Γï		Ш	l	П		I	Γ
(Mid-term Evaluation)	$\prod$	l			ı	$\prod$	T	-	$\prod$	П	ı	$\Gamma$	I	П		1				Н	l i	T.	П	1		ı	ı				$\Pi$	$\prod$		ı	П		
(Final Evaluation)	П	ļ			1		-	-	П	П	1	П	ı	П	П	1				П	ı	П	П	1	П	ı	ı	П		П	П	П	Η	ı	П	П	Г
2. Confirmation of Coordination	П	T			Ī	$\Pi$	i		П	Π		П	T	П	Ti	П	П	Π	П	П	Π	Πi	П	П	Πi	П		li	Π		П	Ш	Ιi	П	П	Ĺ	Γ
3. Workshop on Promising Crop and Market Needs	T	П	T		П	П	1		Π	$\prod$	П	Τï	11	П	F	П	П		П	Ţ	Π!	Ti	Π	П	Ti	Π	1	ı	П	Ī	П	П	l i	П	П	ī	Γ
4. Procurement of Equipments/External Specialist	П	Π	I	I	П	П	Ī		Π	П	Ľ	ŢΪ	Ι,	Π	Π	Τ,	Ti			П	П	ŢΪ	Πi	T.	Ti	П	١,	Ī	П	I	П	Ш	Ī		П	Π	Γ
6. FFS to Raise Awareness of the Farmers	П	П		=	ı	H	T	ı	F	•	П	П	ı	П	П	1	П	П	$\Pi_{i}$	П	ı	П	П	1	П	П	ı	П	П	П	П	П	П	ı	П	Г	Ī
7.Workshop among Stakeholders including WUAs	П	ı			ı	П		ı	П	Π	ı	R	I	П	П	I			П	П	Ī			-	П	П	ı		П		П	П		ı	П	•	Γ
8. Monitoring of Cotton Cultivation and Marketing	П	7	•	•••	44	•	.,.		400	•••		•	Ti	П	П	T	П	T	П	П	П	П	Π	П	Πi	Π	T	П	Π	П	П	П	П	Π	П	Г	Γ
9. Discussion and Coordination with WUA	П	П	Т	Т	Ţ	П	ī	Π.	П	П	Τ.	100	••!	П	П	П	П	Т		П	П	Ti	Π	П	Πī	П	П	l	П		П	П	l	П	П	ī	Γ
10. Selection of the Demonstration Sites	П	П	П		П	П	ı		Π	П	П	ŢΪ	F.	Πī	Ti	П	Π	П	П	Ti	П	Τī	Πī	П	Τī	Π	1	Πī	П	Π	П	П	Πī	П	П	Π	Γ
11. Final Determination of the Demonstration Activities	П	П	П	П	П	П	ı	ī	П	П	П	T	Fi	П	П	l i	Π	Т		П	П	П	Π	Ti	П	П	Γi	ı	П	П	П	П	П	П	П	I	Γ
12. Training technologies of cotton cultivation and mark	eting	Ţ			ı	П	Ţ	ī	П	Π	П	П	T i	П	П	Ti	Τ!	T,	П	П	Ti	П	П	Ti	П	П	ı	П	П	П	П	П	П	П	П	П	Γ
12.1 Crop Management (Land Preparation, Planting,	IPM,	We	edin	g etc	.)	П	Ţ	ī	П	Π	Ti	П	Ī	П	F	Ti	П	П	П	- [	Ti	П	П	П	П	П	Ī	П	П	П	Π	П	П	П	П	П	Ī
12.2 Harvesting and Post Harvesting	П	ļ	П		I	$\left\{ \right\}$	i	I	П	П		П	1	П	П	П	П		יוו	П	П	Ti	F	-	П	П	1	li	П		П	П	Γi		П	Γī	Ī
12.3 Marketing and Institution	П	Π	П		П	П	ı		Π	П	П	Πī	T :	Πī	Ti	П	П	П	П	Ti	Τ:	-	Πī	П	Πī	П		Ī	Π		П	П	Πī	П	П	ī	Ī
12.4 Environmental Education (Eradication of Harmfo	ıl We	eds	etc.)	Т	П	П	ī	ī	П	П	П	Π	Ti	П	Π		Ti	Т	•	П	П	П	Π	П	П	П	П	T	П	П	П	П	П	П	П	ı	Ī
13. Conducting Model Extension Activities (OJT)	П	П			ı	П	T	ı	П	Π	П	Т	ı	П	T	1	$\Box$	П	$\Pi_{i}$	П	ı	П	П	1	П	П	ı	П	П	П	П	П	П	ı	П	Г	Γ
13.1 Model Extension Activities on Crop Manageme	nt (La	and	prep	arati	on, F	Plani	ng, l	IPM,	atc.)	Π	Ī	П	Ī	П	П	- 1	П	T	П	F	Ti	П	П	П	П	П	-	П	Π		П	1-	П	Π	П	П	Ī
13.2 Model Extension Activities on Harvesting and I	Post I	Harv	estir	ıg	ī	Π	i	Π	П	П	Π	П	ŢΪ	П	П	Ti	П	T	П	П	ŢΪ	Ti	П	-1	П	Π	ΠÏ	Ιi	Π	Li	П	П	Γi	Π	•	Γī	Γ
13.3 Model Extension Activities on Marketing and In	ıstitu	tion	Ι		1	$\prod$	ı		П	П	П	$\prod$	$\prod$	$\prod$	$\prod$		$\prod$			$\prod$	$\prod$	F	П	Ľ	Ī	П	Ш		$\prod$		$\prod$	Ш	Ţ.	Ш		Ī	Ι
13.4 Environmental Education (Eradication of Harmfo	ıl We	eds	etc.)	1	Ι	I	ī	1	Ī	T	П	Ī		T	T		Ī		•	T	П	I	Ī		Īī	П		I	П	Ī	-	П	Ī		П	Ī	Γ
14. Implementation and Monitoring of Demonstration A	ctivit	ies	Π			П	T		$\prod$	$\prod$	li	$\prod$	Li	Ţ,	•••			•	• • • •	•••	•	•••	•••	•••	•	100	•••		44	• • • •	•••	•••		•••		•••	F
15. Evaluation	П	Ī	П		īŢ	П	1	ı	Π	Π	Π	П	Ti	П	П	Ti	П		Π	П	Ī	П	П	Ti	П	П	Ti	П	Īī	П	П	П	П	+	П	Г	Ī
16. Seminar	П	Ti	П		īΤ	П		Ī	П	П	Πī	П	ΠĪ	П	П	ΠÎ	П	П	П	П	ΠĪ	T.	П	Ti	T.	Π	Π	Γ,	Π	T.	П	Π	Γ,	Π	П	F	Ī

## 3. Promotion of Water Harvesting Technology

「ウォーター・ハーベスティングの技術改良の推進」

	3. Traditional Rain-fed Z	one			JFY 201	1			JFY201	2			JFY		
	Item	Sub-item	Unit Cost	Q'ty	Unit	Days/ time	Total (SDG)	Unit Cost	Q'ty   Unit	Days/ time	Total (SDG)	Unit Cost	O'tv I IIv	it   Days	/ Total (SDG)
1	Supplementary Survey (Baseline)	RA	60	2	person	10	1,200	-	. 1 .	!	-	-		1 -	
	(Mid-term Evaluation	RA	-	-	-	-	-	60	2 person	10	1,200	-		-	i -
	(Final Evaluation)	RA	-	-	-	-	-	- 1		-	-	60	2 per	on 1	1,200
		Stationaries	100	2	set	1	200	100	2 set	1	200	100	2 Iset		1 200
2	Monitoring Form	Stationaries	100	5	person	2	1,000	100	5 person	2	1,000	100	5 per	on	2 1 1,000
3	FFS to Water Harvesting	Training		l			l	12	60 set	2	1,440		ı	ĺ	ı
4	Overall Tools for the Pilot Activit	ies			J				1					ı	
	Water Hose Balance		100	10	Iset	1	1,000		i	ı				ı	:
	Measuring Tape (100m)		30	10	set	1	300		I	l				ı	;
5	Training	Trainer (Interna	al)		Ì			100	25 person	2	5,000		ı i	1	i
		Trainer (Extern	al					200	25 person	2	10,000			!	ı
		Training	ı	l			l	12	100 person	2	2,400				ı
6	Model Extension Activities	Training	l	l			l	12	180 person	2	4,320	12	180 per	on	2 I 4,320
		Shading (Rent/d	lay)	l			l	50	3 set	2		50	3 set	- (	2 I 300
7	Other Extension Activities (Media	Radio Broadcas	50	10	set	2	1000	50	10 set	1	500	50	10 set	ĺ	500
		Video Making	300	5	Iset	2	3000	300	5 set	1 1	1,500	300	5 set	ı	1 1,500
		Video (DVD)	5	100	Iset	4	2000	5	100 set	3	1,500	5	100 set	1 :	3 1,500
		Leaflets	5	100	set	4	2000	5	100 set	3	1,500	5	100 set	. ! :	3 1,500
		Posters	20	20	set	4	1600	20	20 set	3	1,200	20	20 set		3   1,200
8	Study Tour	Transportation	į į					100	1 set	2	200	100	1 Iset		2 I 200
9	Workshop & Seminar	Training	ļ					12	60 set	1	720	12	60 set		1 <b>I</b> 720
	Total						13,300				32,980				14,140
													Grand To	al 6	0,420

					2011	l										20	12											2	2013						
						JFY	201	1											JFY	2012										JFY	201	3			
	Apı	May	Jun	Jul	Aug	Sep	Oc	t No	v De	c Ja	ı Fe	b Ma	ar A	\pr\	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Ma	r Ap	rМa	y Jur	n Ju	al A	ug	Sep	Oct	Nov	Dec
3. Traditional Rain-fed Zone	-	L		Ц	Ľ	I	П	1			I				1			1		1			ı		1	П		$\Box$	Ш	$oldsymbol{\mathbb{T}}$		ı			
1. Procurement of Equipment		Li	Ε	Ш	Li	Ī	Li	Ti							ï							П	1	П		Li	Li	$\coprod$	Ш	Ш		ı			
2. Supplementary Survey (Baseline)	_	ı	П		l ı									П	T	_		$\Box$			-	П					l	$\coprod$	Ъ	Ш					
(Mid-term eavaluation)		1	Ш		1	Li	1	Li	Ш	j i	Li	1		Ш		1		Li	1	Li	ŀ	Ш		1	Li	1	ı	Ш	Ш	ı			1	لنا	Ш
(Final evaluation)		ΙÏ	Ш	Ш	ľ	ينا		Li	Д		L			Ш	ير	_	LĹ	Li		Li_	-	П	Li		Ш		I	Ш			П	Ĺ		ليا	
2. Confirmation of Coordination among MoAFI		L!	Ш	Ш	<u>l !</u>	1	Ш	l I			l I	L.		Ш	1		L i	l ı	L!	1		Ш	ı		1	<u> </u>	<u> </u>	Ш	Ш	Ш	Ш	1	ال	ш	Ш
3. Monitoring and problem finding	Ц	Ŀ	• • •	•••	••••	•	•	•	•		l.	Li		Ш	ı	Ц	╙	L	Li			Ш	ı	Ш	1	Li	Li	Ш	Ш	لما		1	ال	ш	Ш
4. Selection of the Demonstration Sites		l i	Ш	Ш	l ı	<u> </u>	1	!	Ш	- 1	<u> </u>	L		Ш				<u> </u>	ı		1	Ш	Ľ	ı		1	ı	Ш	Ш	Ш	}		ட	ĽIJ	Ш
5. Final Determination of the Demonstration Activities			Ц	Ш		L		Ľ						Ш			Ш		Li.	Ľ		Ц				1	I	П	Ш		Ш				Ш
6. Procurement of External Specialist		ΙÏ	Ц	Ш	Ī	Li								Ш	i	_	L	Li	Π	Li	-	Ш			L		I	Ш	Ш			i			Ш
7. FFS to Raise Awareness of the Farmers		Ľ	Ш	Ш	I	ot	Ш	Ш	Ш		Ш			Ŀ	_		Щ		Ш	Li_		Ш	l	Ц	L		<u> </u>	Ш	Ш	1	Ш	ı	الل	ш	Ш
8. Training Technologies of Improved Terrace Constru	ctio	n	Ш	Ш	Li		L	<u>l</u> i	Ш	Ш	l.	Li		Ш				<u>Li</u>	Li			Ш	ı	Ш	1	Li	Ŀ	Ш	Ш	Ш		ı	لٺ	ш	Ш
8.1 The Methods to Construct Improved Terraces		Li	Ш	Ш	Li	1	Ιi	1	Ш	Шi	I	Li		Ш	_	Ĺ	<u> </u>		Li	1		Ш	ı	Li	1	Ιi	١i	Ш	Ш	Ш	{	ı	لٺ		Ш
8.2 The methods to Use Water Balance Leveling To	ools		Ц	Ш					Ш					Ш	•		Ц					П					ı	П	Ъ	Ш	П				
8.3 Environmental Education (Eradication of Harmf	ul W	eeds	etc.)		1	Li	1	Li	Ш	1	Li	1		Ш	i	1	Ш	Li	1	Li	Ī	Ш	L	1	Li	1	ı	Ш	Ш	Ш			1	لنا	Ш
9. Training on Technologies on Improved Crop Produc	ction	ľ	Ш	Ш	ľ	لل	<u> </u>	Li	Ш		Ц	Į Î		Ш	Ĺ	_	LL	Li	ľ	Li	-	Ш	L		Ш		ı	Ш	Ш	Ш		ī			
9.1 Introduction of New Crops and Varieties	Ш	Ľ	Ш	Ц	Ľ		L.	ш	Ш	Ш	Ш	L.		Ш			<u> </u>	L	L.			Ш	ı	Ц	1	l.	l!	Ш	Ш	1	Ш	ı	ال		Ш
9.2 Crop Management (Land Preparation, Sowing,	Wee	ding,	Har	vestii	ng etc	c.) I	نــــــــــــــــــــــــــــــــــــــ	1	Ш	نلــ	1	نــــــــــــــــــــــــــــــــــــــ		Ш	ı	Ш	-	1	ينا	1	Ŀ	Ш	J	Ш	I	Li	١i	Ш	Ш	Ш		ı	لٺ	ш	Ш
10. Conducting Model Extension Activities (OJT)	Ц	Lı	Ш	Ш			ш	<u> </u>	Ш	Ш		Ш		Ш		Ш	Ľ	l!	Ш	l!		Ш	Ľ	ı		l ı	l	Ц	Ш	Щ	Ш	!		Ľ	
10.1 Model Extension Activities on Improved Terra				_	ı	L.		l:	Ш	Į.	Ŀ	L		Ш	-		L	L	L	Ľ	ı	Ц	LĹ	ı	Ľ	1		11	Ш	Ш	1	┧	ı	لنا	Ш
10.2 Model Extension Activities on Crop Managen	nent	(Lanc	l Pre	parat	ion, F	Planii	ng, II	РΜ, а	atc.)		Ц			Ш	لأ	_	Ŀ	Li		ــلـــ	1	Ш	Li		Li	1	I	Ш	Ŀ	<u>- L</u>	1	<u>i</u>		ليا	Ш
10.3 Model Extension Activities on Environmental	Edu	catio	ı (Era	idica	tion c	of Ha	ırmfu	1We	eds	etc.)	<u>L</u>	L.		Ш	L	Ш	Ш	L	Ľ		1	Ц	L	Ш	1	L	Ľ	Ш	Ш	Ц		ı	╧		
11. Study Tour	$\sqcup \! \! \! \! \! \perp$	Ŀ	Ш	Ц	Li	11	نــــــــــــــــــــــــــــــــــــــ	1 !	Ш	Ц	1	Ŀ		П	ı	Ш	止		Li	<u> </u>	Li	Ш	_	١.		نل	Li	Ш	Ш	Ш	Ц	ı	لنـ		Ш
12. Implementation and Monitoring of Demonstration	Acti	vities		Ш	LL	Ľ	<u>Li</u>	Ľ	Ш	Ц	Ľ	نــــــــــــــــــــــــــــــــــــــ		Ш	•••	•••	• • •	• • •	•••	••••	•••	<u> </u>	•••	••••	- 4 -	• • • •	• • •	4-6	4.	<u>,</u>	4-6	, m in o	.,.	• • •	• •
13. Evaluation	Щ	ᄔ	Ш	ᄔ	L	Ľ	<u>↓</u> ∟	Li	Ц	Ш	Ľ	Ŀ		Ш		ᄔ	Ľ	Ľ	ᄔ	LL	LL	Ш	Ľ	Li	Ľ	11	1	Ц	Ш	ᆚ	П	╧		ĽIJ	+
14. Workshop & Seminar		1	Ш	Ш	ı	Li	1	l.	Ш	Į i	Li	1		1	i		Ш	Li	ı	L	ı	<u> </u>			Li		I	Ш	Ш	i	1	Ė		لنا	Ш

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

「小農のための機械化農業の導入」

	4. Mechanized Rain-fed Z	Zone		J	FY 201	1		Total Unit Days/ Total						J	FY 201	3	
	Item	Sub-item	Unit   Cost	Q'ty I	Init	Days/ time	Total (SDG)	Unit Cost	Q'ty	Unit		Total (SDG)	Unit Cost	Q'ty	Unit	Days/ time	Total (SDG)
1	Supplementary Survey	RA	60	2	person	10	1200	-	-	-	١ -		-	-	-	-	-
	(Mid-Term Eva)	RA	- [	- j	-	-	-	60	2	person	10	1200	-	- !	-	- 1	-
	(Final Eva)	RA	-	- 1	-	-	-	-	-	- 1	-		60	2	person	10	1200
		Stationaries	100	2	set	1	200	100	2	set	1	200	100	2	set	1	200
2	Monitoring Form	Stationaries	100	2	person	2	400	100	2	person	2	400	100	2	person	2	400
3	Overall Tools for the Pilot Activ	vities		1						I	ĺ		I				
	Water Hose Balance		100	10	set	1	1,000			!	ı			j			
	Measuring Tape (100m)		30	10	set	1	300				ı			ļ			
4	Training	Trainer (Int)	100	15	person	1	1500	100	15	person	1	1500		ļ			
		Trainer (Ext)	200	15	person	1	3000	200	15	person	1	3000	i			) 	
		Training	12	60	person	2	1440	12	60	person	2	1440	ı				
5	Model Extension Activities	Training	12	400	person	! 		12	700	person	2	16800	12	700	person	2	16800
		Shading	50	3	set	2	300	50	3	set	2	300	50	3	set	2	300
6	Other Extension Activities (Med	Radio	50	10	set	2	1000	50	2	set	3	300	50	2	set	3	300
		Video Makir	300	5	set	2	3000	300	5	set	3	4500	300	5	set	3	4500
		Video (DVD	51	100	set	4	2000	5	5	set	1000	25000	5	5	set	1000	25000
		Leaflets	5	100	set	4	2000	20	5	set	100	10000	20	10	set	100	20000
		Posters	20	20	set	4	1600			I	1					) )	
7	Study Tour	Trans.		ı				100	1	set	2	200	100	1	set	2	200
8	Workshop & Seminar	Training	12	400	set	1	4800	12	400	set	1	4800	121	400	set	1	4800
	Total						23,740					69,640				1	73,700
														Grand	Total	167.	080

					20	011					I							20	012													2	013						
							JFY	201	1												JF	Y 20	12											JFY	Y 20	13			
	Apr	May	Ju	n Jı	al A	ug	Sep	Oct	t No	ov E	)ec	Jan	Feb	Ma	ır A	pr N	May	Jun	Jul	Au	g Se	рO	ct l	Vov	Dec	Jan	Fel	) M	ar A	prl	May	Jur	Ju	ıl	Aug	Sep	Oct	No	v Dec
4. Mechanized Rain-fed Zone		ı				ı					-	1	ı	Ľ		ı			ı				П	-	1		ı	ı			ı		Ц		1		L	Ш	Ш
1. Supplementary Survey (Baseline)	i	1	•			i				П		ī	Ī	Li		iΠ		. –	П	П			П	i			I				ı		L					$\coprod$	Ш
(Mid-term Evaluation)	ı										1		-	1				-						1	-	-					ı					-		П	$\prod_{\mathbf{L}}$
(Final Evaluation)	ı	Ŀ	Ц			Ш	ı	ı	Li		1			1		Ш	1	1	Li				Ш	1		1	l i	Li		ı		Ш	Ŀ			1	L	Ц	<u> </u>
2. Confirmation of Coordination among MoAFI	Ì	Ī					Г				ı					Ш	ì	-	Li					Ī		1	Li	Li		ı	Ĺ	П	'			-	Li	Ш	Ш
3. Confirmation of the Demonstration Sites		ī	Ī					Ц	L			i	i	L				- 1	1	Ц							ı				ı	Ш					L,	Ш	Ш
4. Final determination of the demonstration activities		ı	Ī			ı						-	_	ľ		ı			I					_	_		I				ı		L		1		I	Ш	Ш
5. Procurement of Equipment/External Specialists	ı	9	-								ı			ı			j	-						1	-		П				ı		l			1	П	П	$\prod_{\mathbf{L}}$
6. Training on Improved Crop Production	i				П		ī		Ι,		ı			ı		П	ī	-		П			П	_		-	Ľ	Ι.		_						-		П	L
6.1 Introduction of Machineries	Î	Ĺ	Е				П	П	П		Ī		ĺ	ΠÎ		īŧ	•	-	Li	П			$\left\{  \right\}$	Ι		_	L			ı	Ĺ		ı			ı	L	П	$\coprod$
6.2 Introduction of New Varieties	1	1				ı					1		_	[ ]			ł	- 1	1					1	_	-	ı			_	-,						L	П	Ш
6.3 Crop management )		1				ı		Ш	1			1	-	'		1			1				Ш		1		1	1		Ш	ı	D	L	Ŀ	-		L	Ш	ш
7. Training on Improved Terrace Construction		ľ						Ц				ì	Ì	Li					I	Ц			П	L			I				ı					Ĺ	Ш	Ш	Ш
7.1 Introduction of Machineries	1	Ľ	Ц		Ш	Ш			Ľ		ı		ŀ	1		<u>' '</u>	•,	1					Ш	ı		1	1 !	L!		ı	-	П	Ŀ			1	Ľ	Ш	<u> </u>
7.2 The Methods to Construct Improved Terraces	ĺ	Li				Ш			L		I			l		Ш	Ì	ī	Li				П	Ì		_	Li			ı		•	-			ı	L	П	$\perp$
8. Conducting Model Extension Activities (OJT)	ı	ĹĹ	Ш			Ш	1		Li		ı	Ĺ	Ĺ	I		Ш	1	-	Li				Ш	ı	Ĺ	_	Li	Li		1	Ĺ	Ц	<u> </u>		Ĺ	ı	LĹ	Ш	止
8.1 Model Extension Activities on Machineries	!	Ŀ		-		F		Ц				ı	1	!		!=	ŀ	•	1				Ш		1		1	ļ i		Ш	ı	D	L:		1		L	Ш	ЦĹ
8.1 Model Extension Activities on Introducing New	v Va	rietie	es		Ш	İ		Ц				ì	ĺ	Li					l I	П				Ĺ			I				ì	ŀ			1	i		Ш	Ш
8.2 Model Extension Activities on Crop Managema	ent	!	Ц		Ш		ı	L			1			l				1	Ľ		ı		Ш	ı			!!	L!				П	L	Ш	4	1	L!	Ш	山
8.3 Model Extension Activities on Construction of	Imp	rove	d T	errac	es	Ш			Ľ		ı					Ш		<u>.</u>	L				П			-	L			ı		•	-			ı	L	П	Ш
9. Study Tour	ĺ	Lī	П			ĹΙ		Ľ	L		ı	Ĺ		Ĭ		L		ì	Lì				Ц			Ī	<u>†                                     </u>	تل			ĺ	П	ľ				Lì	Ш	1
10. Implementation and Monitoring of Demonstration	Acti	vitie	s	• • •	•••	•	• • •	•	•	•••	•	• • •	• •	•••	÷	<u> </u>	4.	•		1-1	•	•	••	•••		i	• •	•	•	•	•••	•••		•	•••	•••		•	4-6-
11. Evaluation			D	Ι	I		I	П		$\coprod$	Π			Ľ		╝	I	L	ΔĪ	П	Ι	I	П				Ī	ī	Ι		Ī	П	Ľ	I			ഥ	Ш	Ŀ
12. Workshop/ Seminar	i	ŢΓ	П			ı	П	П	T I	-	ŧΤ	Π				·Τ	ſ	Ιi	П	П	П		П	•	• [	П	T	П		П	П	П	П	T		i	T	T	TE

# 5. Livelihood Development with Community Initiatives

「コミュニティ・イニシアチブ生計向上」

5. Liv	velihood Dev. with Commun	nity Initiatives		J.	FY 2011					JFY201	2			J	FY 201	.3	
	Item	Sub-item	Unit	Q'ty			Total	Unit	O'tv	Unit	Days/	Total	Unit	Q'ty	Unit	Days/	Total
		Sub-item	Cost	Q 13	Cint	ite	(SDG)	Cost	Q 13	Cint	time	(SDG)	Cost	Q i,	Omt	time	(SDG)
Over		l			, ,		i				! 	! !		! ! .		i .	! 
1	Updating Materials	Stationaries	100		set	1	-	100		set	2 1	200			set set	1 2	200
		Media	300			2				set	3	1,500		1 5	set sheets	l 1	1,500
		Poster	20		sheets	3				sheets	ı,	1,200					200
		Leaflet	5		sheets	3				sheets		750 900			sheets person		
2	Study Tour	Training Rental Car	15) 200		person car	2		15	30	person	ı <sup>2</sup>	900	15	1 30	person	1 Z	900 I
2	Planning/ Feasibility	Stationaries	200		1 1	1	-			!	l			l		!	I
	Planning reasibility	Training	15	30	person	1			l		I			ı	1		ı
	ToT (KVTC)	Participants	40		person		5,600		l		I			l	1	!	I
	101 (KVIC)	Stationaries	200		set	14			l		ı			ı	ı	!	ı
	Info.Collec. on Animal Skin	Expert Fee	200		1 1				l		ı	1		ı		!	I
	into.conec. on Annual Skin	Experiment	500		set	1					I	ı		l	1		ı
	ToT (Women Reps.)	Experiment	300	1	301	1	ē'	100	1 12	person	I 14	16,800		l	1		ı
	Final Workshop				) !			100	12	person	-		15	I 50	person	6	4,500
3	Core Skill for Rural Dev.	Training	15	30	person	4	1,800	15	30	person	2	900		1	Person		I 4,500
	nanized Rainfed Zone (2 si		13	50	person			13	30	person	<del>-</del>	700				<u> </u>	<del>                                     </del>
1	Guidance to villages	Training	15	30	person.				l		l			ı		I	ı
2	Organization of groups	Group formation	15								I	ı		l		i	I
3	Participatory Planning	ERI Contract	41,000		person.		41,000				I	•		l	l	- I	I
,	1 actorpatory 1 mining	RA	60		person.		1,800		l		I			l		i	l
		Training	15		person.		I 4,500				I			ı	I	- I	I
		Stationaries	100		set	2					ı			ı		Ī	ı
5	Target Beneficiary Survey	RA	60		person.						! -			l		ı	I
ľ		Stationaries	100			2				1	! -					ı	! -
7	Awareness on Health	MoH officers	200								1			l		ı	1
		Meeting	15		-						! -					I	! -
		Stationaries	100		set	2					l					ı	!
8	Solar Ene Mob. Charger	ERI officers	200	2	person.	3										ı	
	Ü	Training	15	30	-						!				!	I	
		Stationaries	100	1	set	2	200					!				I	
9	Intro. Gas operation & ICS	FNC officers	200	2	person.	2	I 800				!				!	I	
		Training	15	16	person.	2	I 480			1	! •					ı	!
		ICS	30	10		2	l 600									I	] 
10	Home Garden	Horti. Dept	200	2	person.	4	1,600		<u> </u>							l	! !
		Training	15	30	person.	10	4,500			1	! !					ı	
		Seed	200	1	set	2	400				! !					I	
		Implements(e.g. weeder)	200	1	set	2	400									I	
		Fence (Labor tec)	400	1	set	2	l 800		!	ı						I	
		Renting Tractors	160	1	set	2	320			Ī	I					I	:
		Fertilizers etc.	500	1	set	2	1,000				I			i		I	I
10	Cloth Making	Others (e.g Threads)	500		set	2			I		i				- 1	l	
l		Table& Chair	60			2				ı	i	- 		ĺ		I	- I
l		Training	15				2,250			ı	- 			ĺ	- I	I	i
10	Handicraft	Materials(soksok,etc)	2,400		set	2			l		ı	1		I		l	ı
l		Training	15		person		2,250		l		ı			ı	1	l	ı
11	Food Processing	Material (spoon,etc)	2,000		set	2					I			ı		!	I
I		Ingredients	1,000		set	2			l		ı			ı	1	!	ı
	M 0 F	Training	15	30	person.				i		ı				1	!	I ,
	M & E	Training			<b> </b>			15	30	person	6	2,700	15	30	person	4	1,800
norti	culture Zone (1 site)				) i				l		i	1		ı			ı
1	Detailed Planning on Training	Initial Meeting	15	30	person	1	450		l I		] ]	l I		] ]	] ]	!	] ]
2	Organization of Beneficiary Group	Group formation	15	30	person	1	450					1		)		! !	!
3	Baseline	RA	60	3	person.	5	900			1	! !			<b>'</b>		I	
l		Stationaries	100		set	1				1						ı	! !
4	Participatory Planning	RA	60		person				] 					!		ı	!
l		Stationaries	100		set	1			] 					!		I	!
5	Cloth making	Material (e.g Threads)	5,000		set	1					! !			!		ı	! !
l	, and the second	Table and Chairs	60			1					!			!		ı	!
l		Training	15	30	person.	5	2,250									ı	! !
l		Set of Cloth(F)	80	37	set		2,960		l I	ı	l İ			<u>'</u>		l	
Ī		Set of Cloth(M)	270	20	set	1	5,400			<u> </u>						ı	

Rem	. Li	velihood Dev. with Commu	nity Initiatives		J:	FY 201	1				JFY201	2			J	FY 201	13	
Processiong   Material (Karacet)   20   100   set   1   2,000		Item	Sub-item		Q'ty	   Unit	i .	ľ		Q'ty	Unit				Q'ty	llnit	- •	Total (SDG)
Processing			Material (Karaz etc)	20	100	set	1	2.000					l		i			
Raw Material   2,000		Proceesiong			•	l	۔ ا			l	I	l	l		) 1	l	I	)
Ans Skin Expert   2,000							•				i I						i	}
Food Processing   Materials (cup. etc.)   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1   3,000   1   set   1								1			l				!		ı	ļ.
Ingredicents		Food Processing	-				ľ	1			I		!				ı	ļ
Business Training		1 God 1 roccssing			1			1			I						I	(
Bounters Training			- C								I	! !					ı	(
Environment Lecture   Straining   15   Solperson   1   750		Business Training	-				ľ	1			I		í		i	! 	ı	ſ
Secoling-Secols   1		-	-					750			I		i				I	ſ
Rood Irrigated Zone ( 2 sites)			Seedling/Seeds		1		1	500		]	l	]	I			]	l	[
Training	6	M & E	Training			<u> </u>	1		15	30	person	3	1,350	15	30	person	2	900
Gradinace and orientation to villages   151 30 person   2   900	loo	d Irrigated Zone (2 sites)				ı	ı	l			! !		l		1 1		! !	)
Vallages   Organization of beneficiary   Organization   Organiza	1	Guidance and orientation to	Training		-	l nerson	,	900		l	I	l	ı			l	I	ļ
2   Organization of beneficiary   Training   15  30   person   2   900	•	~	Training			I	1 ~	, ,,,		l	i	l	l			l	i	)
Participatory Planning   RA   60   5   person   6   1,800	2	- '	Training			l person	2	900			I		!				i	1
Stationaries   200   1   set   2   400   1			_		ı		ľ	ı			ı						ı	l
Survey	3	Participatory Planning									I		!				I	ļ
Survey		Torget Deneficient Deceline	Stationaries	200	1	set	2	400			I						ı	(
A wareness raizing on   Meeting   151   30   person   21   900   1     1	5		RA	60	3	person	10	1,800			I					! !	ı	(
Navemenss raizing on   Meeting   151   30   person   2   900   1   1   20   person   2   400   1   1   1   20   person   2   400   1   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   1   20   person   2   400   person		Survey	Stationaries	100	1	cet	,	200		!	I						I	Ĺ
Health		Awareness raizing on			ļ					! 	I				i	! 	ı	ſ
Stationaries	7		Meeting	15	30	person	2	900			l	l	,		, i		Į .	}
Home Garden   Meeting (WUA)     10   20   person   21   400   1			Stationaries	100	1	Iset	2	200			l				l i		!	}
Seed     2001   1 set   2   400	8	Home Garden	Meeting (WUA)			l	ı	ļ.	10	20	person	2	I 400		) (	l	!	}
Implements (weeder, etc.)   2001   set   21 400   1			Training			ı	ı	ļ.	15	30	person	2	900			l	! :	)
Fence (Labor&Materials)   400    1   set   2   800   1			Seed			ı	ı		2001	1	set	2	ı 400		) (	l	!	)
Renting Tractors     160    1 set   2   320			Implements(weeder, e	tc.)		I	l	1	2001	1	set	2	I 400			l		)
Cloth Making				ıls)	! 	ı	l	1			500						I	)
Cloth Making			-			l	l	ĺ							l I	l	i	}
Table & Chair   Training   151   30 person   21   900   1   1   1   1   1   1   1   1   1		a				l	<u> </u>	ĺ									i	1
Handicraft		Cloth Making	-					ı									ı	ļ
Handicraft					l			1									I	ľ
Training		Handicraft		)	l			1									I	Ĺ
Food Processing		Trandiciart		,		i		1	-						i	! 	I	(
Food Processing			-			ĺ		1							i		ı	[
Ingredients		Food Processing		, spoon,e	etc)	ĺ	[ ]	!			-					]	l	[
Business Training				, ,	l ′	ı	ı	Į.	,						1 1		ļ	}
9 M & E			Training			ı	ı	ļ.	15	30	person	2	900			l	!	<b>)</b>
Traditional Rainfed Zone (1 site)		Business Training	Training		! !	l	ı		15	30	person	2	I 900		) 1		! !	)
1   Guidance to villages   Training   15   30   person   1   450       2   Organizing benefit group   Selection & Group formation   15   30   person   1   450       3   Participatory Planning   RA   60   5   person   6   1,800       5   Target Beneficiary Survey   RA   60   3   person   5   900       7   Awareness on women   Meeting   100   50   person   1   500       8   Awareness on Health   Meeting   100   1   set   1   100       8   Awareness on Health   Meeting   15   30   person   2   900       9   Home Garden   Training   15   30   person   5   2,250       9   Home Garden   Training   15   30   person   5   2,250       100   1   set   1   200       100   1   set   1   100	_					l	l		15	30	person	1	I 450	15	30	person	2	900
2   Organizing benefit group   Selection & Group formation     15   30 person   1   450	Trad	litional Rainfed Zone (1 site	2)				<u> </u>	ĺ			I				l		i	}
Participatory Planning   RA		-	-					ı									ı	ľ
Stationaries   200			-	mation				1									I	(
Target Beneficiary Survey   RA	3	Participatory Planning				! !		ı									ı	(
Stationaries   100	5	Torrot Donoficione Sum			l	i		1								I	ı	[
Awareness on women   Meeting     10   50   person   1   500	3	a get beneficiary Survey			l	I	ı	Į.			1.				, i		I	}
Stationaries   100	7	Awareness on women			l	ı	ı	!							, ,	I		}
8 Awareness on Health Meeting Stationaries   15 30 person 2 900   1	,					ı	1	!							) i		!	}
Stationaries   100	8	Awareness on Health			1	l	ı						900		) (	I		<b>)</b>
9 Home Garden Training Seed 15 30 person 5 2,250 1 200 1 pset 1 pset 1 200 1 pset 1					<u> </u>	l	l	1	100						1 1		! !	)
Implements(weeder, etc.)   200   1 set   1   200	9	Home Garden	Training			l	l	1	15	30	person	5	2,250			l	I	<b>)</b>
Hence (Labor&Mate)   Hence			Seed			ı	ı	1	200	1	set				)	l	i	Ì
Renting Tractors   160   1 set   1 160			Implements(weeder, e	tc.)		l	l	ĺ			set						i	}
Fertilizers etc. 500 1 set 1 500					]	l		ĺ									ı	]
			-		l			1									ı	l
ICloth Making IOthers (e.g. Threads) I I I I I I I I I I I I I I I I I I I						<u>'</u>		ì								l I	ı	(
		Cloth Making	Others (e.g Threads)			<u> </u>		j .			set						İ	(
Table& Chair 60 6 <sub>1</sub> set 1 360					l	<u>'</u>		l								ı I	ı	(
Training   15 30 person 5 2,250		IIdi'	-		l	i	i	)	_				,			I	ı	[
2,500		riandicraft			l	i		1			SCC		,			I	ı	[
		Food Processing	-			i	ĺ	1								l	I	{
Food Processing Material (cup,etc)   2,000   1 set   1   2,000   1   1   1   1   1   1   1   1   1		1 oou Frocessing	-		l	I	ı	!			sci				, ,	İ	I	}
Training   15 30 person 5 2,250						ı	ı	!					,		, ,	l	!	}
10 M & E Training 15 30 person 3 2,230 15 30 person 3	10	M & E	-			ı	ı	!		J 0	Person	l J	_,_50 		30	nerson	3	1,350
							1/1/	1 440			1	71	010	13	50	r 0.5011		,330
		10141					144	·, <del>++</del> 0				/1,	010		Grand	Total		,330 , <b>780</b>

	I				20												201	2											2	013				_	_
	L	ι.	1_	1-	.1.		Y 20			_		I		_		-			_		2012	_	_	1_	I	L .	1		Τ.	_	FY 2	_	Τ-		_
0 11	Apı	Ma	y Jui	ı Ju	l Au	g Se	рO	ct N	lov.	Dec	Jan	Feb	Ma	ır Ap	rΜ	ay Jı	ın J	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Fel	Ma	пАр	гМа	yJun	+-	l Au	_	_	_	ov De
Overall  1. Review and Updating of extension materials	₩	H	₽	+	₩	╁	+	+	Н	+	÷	⊬	H	+	+	+	+	Н	+	+	⊬	H	┝	H	₩	남	┿	÷	╁	H	┿	+		H	-
Review and Opdating of extension materials     ToT / Study Visit/Feasilibty Study	十	н	4	H	+:	U		+	Η	_	Ŧ	H	H	+:	+	+	+	Η	-	+	Ł	F	H	H	H	H	++	H	╀	H	+:	+	++	+;	卍
3. Core Skill (e.g. M&E)	+	H	17	Ð	H	8	Ŧ	+	+	$\pm$	+	H	₽	t	+	╅-	$^{+}$	H	⊹	+	E	₩	╁	H	H	₩	H	₩	H	++	ť	┿	H	+	+
5. Core Bain (e.g. Weel)	ti	Ħ	ti	₽	ti	_		+	H		+	ti	Ħ	$\pm i$	_	_		Ħ		+	F	H	H	H	Ħ	Ħ	t	Ħ	ti	+	ti	++	ti	+:	H
Mechanized Rainfed Zone (2 sites)	世	Ħ	ļτ	Ħ	+	Ħ	T	Ħ	Ħ	Т	+	ļπ	Ħ	+	T		r†	Ħ	1	T	ļΤ	Ħ	ļΤ	Ħ	Ħ٣	Ħ	T	#	世	++	十	++	+	Т,	Ħ
Guidance and Orientation to villages	T:	T	•	Ti	T:	Ti	T	•	П	: 1	-f-	T:	Ti	T	T	T	: 1	П	-: 1	T	Ħ	Ti	Ħ	Ħ	T:	Ħ	T:	Tf	††	Ť	Τ:	Ti	T:	Ti	7
2. Organization of beneficiary group	ī	Π	Ti	H	Τi	T			П	i	1	Ιī	П	Ti		T	ī	П	i	T	Ιī	T	Γī	T	Τī	T	Ti	T	Ti	I	Τi	T	Ti	$\top$	丌
3. Participatory Plan / Needs Assessment	Ti	π	F	П	Ti	Τ:	T	T	П	ī	T	Ti	П	Tī	T	7	T	П	ī	T	T	Ħ	T	П	T	Ħ	T	T	T	Т:	T	**	T	$\top$	
4. Feasibil. Study with Financial Setting	T	П	-	- 1	T	Ti		寸	П	Т	T	П	П	T	T		П	П	Т	T	Т	Ħ	т	Ħ	T	Ħ	T	Ti	$\top$	Ti	T	Ti	T	Т	П
5. Direct Beneficiary Baseline Survey		Π	T	H	- [	Ti	T		П	7	T	Γ.	Π	Т.	T	T	:	П		T	Ľ	Πī	П	Π	T:	Ti	T	Ti	T	Ī	Т:	Ti	T	Ti	П
6. Procurement	Ιi	П	Li	• •	•	T			Ī	i	T	Li	П	L			il	П	i		Li	Π	Li	П	Πi	I	Πi	П	$\coprod$	I	Τí	I	$\operatorname{Li}$		$oldsymbol{\Box}$
7. Awareness raising on Health and Hygiene		Ш	Lı	I	4-5	•	•	•••	•	٠,	•		•••	4-6	•		<b>.</b> .	•		•••		•			••	•••	•••	•	4-1-	• • •	•		4		• • • •
8. Solar Energy Mobile Battery Chargers	L	Ц	ı	Ш	L	Li				•••			• • •		• • •		<b>-</b> • •	•						1-6		4-6	• • •	4-6	• • •	• • •	4 = 4	•	4-6	•	<u>. • • •</u>
9. Introduction of Gas/ICS	1	Щ	Ш	Ш	!	Цĺ			tt	•••	•••		•••		•	d	٠	•••	•••	•••	- 6	•••				•••		•••	4		4-5		4	• •	<u> </u>
10. Training on Comm. Initiative Activities	1	Ļ١.	<b>↓</b> ¦	<u></u> ₽ŀ.	-  ∔	Ļ١	4.	<u>.</u>	Ч	+	_'-	;	Ļŀ.	╛	L	┧.	¦⊦	Ч	<b>:</b>	_!_	;	Ļ١.	∔	Ļŀ.	<b>↓</b>	Ļ١.	<b>↓</b> ‡	Ļ!.	-  ;	Ļ١.	-  ⊹	L!	<b>↓</b> ¦	ı ل_ا	<u>'</u> .  ;
(1) Home garden	41	<u> </u>  -	4 +	+	<u>ا</u> ا			r þ	(*)	i	_¦_	1	H.	4 -	Į.		Ļ	Ц	_	- -	1	Ļļ.	11	FI-	1 -	Ļļ.	41	- -	41	<b>L!</b> .	4 -	-!.	41	Ļ!	ذ إــا:
(2) Cloth making	<u> </u>  -	łŧ	Ļ١.	4∔	ŀ١	┦;		ıl	∔ ⊦	- 14	<b>†</b>		1	Ψ	4,	ŀ	4	∔ ŀ	. 4	÷	Ļ٠	1‡	Ļ١.	<b>4</b> ‡	Ļ١.	44	<u> </u>	<b>4</b> ‡	Ļ١.	┥┆	ŀ١	┥┆	Ļ١.	┦┆	<b>:</b>
(3) Handicraft	計	₩	H		¥!	4	. L	Η.	+ }	-;-	Ţ		11	╁	4.	+	1	+	-;-	+	⊦¦-	₩	<b>-</b> ¦-	₩	H	₩	+:-	++	+¦-	<b>∤</b> ∔	H.	++	╁	۱,	++!
(4) Food Processing	+	+	۲ŀ	╀	H	+	+	+	+ 1		1	5.	╁	Ŀ	1-	+	Ή	<u> </u>	ازر	+	١	₹	<u> </u>	₹	Ŀ	╁	.  -	1 +	+-	1	H	1-	<u>.</u>	1	<u>.</u>
(5) Imple/Monitoring 11 Monitoring & Evaluation Workshop	+	H	H	+	╁	+	+	+	H		7.	<del>                                     </del>	<del>[ ]</del>	+	+			77		7	<del>                                     </del>	H	f	<del>[ ]                                   </del>	<del>[                                    </del>		1	77	+:	1		1	+-	7	#
Horticulture Zone (1 site)	++	H	H	H	+	H	+	+	H	퓌	÷	۰	H	+	+	f	+	H	+	+	۲	HF	H	H	۲	f	++	H	<del>ا</del> ت	H	+	ti	++	ti	-
Detailed planning on training	++	H	H	ш	#	H	+	+	H	귀	÷	H	H	+	+	+	+	$\forall$	쒸	+	۲	H	H	H	H	H	++	₩	卄	H	۲	ŦŤ	++	+	ተ
2. Procurement	ti	H	ti	Ħ	1			H	H	÷	+	t÷	Ħ	ti	Ŧ	_	Ħ	Ħ	Ħ	+	Ħ	H	Ħ	H	t÷	H	ΗĖ	++	Ħ	++	Τi	┿	ti	++	Hi
Organization of beneficiary group	+	Ħ	+	Ħ	+		+	$\dagger$	H	Т	t	h	Ħ	$\dagger$	$^{+}$	+	7	Ħ	Т	t	h	H	h	Ħ	tr	Ħ:	╁	Ħ	╁	+:	$\dagger$	+	$\dagger \tau$	+	:ተ፣
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# **KASSALA STATE**

## **MINISTERY OF HEALTH**

# REPRODUCTIVEHEALTH DEPARTMENT

# <u>Site –observation Tour from Kassala to Sinnar</u>



Prepared by:

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Kassala/RH-Coordinator

#### Introduction

Kassala State is located in the eastern borders of Sudan close to Eritrea. The capital is Kassala town, which was previously the capital of the region of Eastern Sudan (composed of what is now Kassala, Gedarif and the Red Sea states). Its strategic location makes it an important trading centre. The population of Kassala state is estimated at 1789809, In Kassala state, more than half of the populations live in rural areas .largely depending on pastoral farming .The state is also characterized by the significant presence of internally displaced people (IDPs) due to economic hardships, droughts and conflict in the region and refugees from Eritrea.

The state has been experiencing underdevelopment and chronic poverty. People, especially in rural areas, are constantly suffering from food insecurity due to in adequate crop harvest. Of central concern are the nutritional levels. Supporting the most vulnerable by providing access to health care particularly for women and children may improve the situation. Currently the Global Acute Malnutrition rate is beyond the emergency threshold of 15%, standing at 18% in Kassala state. It is the highest rate in the whole of Northern Sudan and is second only to the extreme rates of Southern Sudan. The under-five mortality rate is 0.61 per 10,000 per day for Kassala (emergency threshold is 2/10,000/day. Moreover, it is compounded by high maternal mortality raio(1414 per 100,000 live births).

The state Government and JICA has decided to cooperate through the Capacity Development Project For the Provision of services for Basic Human Needs (CD-BHN) in Kassala .The project period is proposed as 3 years from May 2011-April 2014. The project Design Matrix (PDM) finalized with overall Goal of "peoples access to quality government services to ensure basic human needs is improved in Kassala state". In addition to that, the project purpose is "quality of Kassala state Government's services provision for water supply ,Agriculture and ,Livelihood ,Maternal and Child Health and Vocational Training is improved".

Reproductive Health department in Kassala state in collaboration with JICA experts in Maternal and child health have been discussing the priorities and suitable interventions to decrease this high maternal and neonatal mortality rates. Initially, the department with close follow up from the formal experts, conducts a short visit to the already implemented Mother Nile Project in Sinnar State .Aiming of learning and exchanging of experiences, field visits, meetings, demonstrations and others were carried out. But, the overall out come from this visit, is that Kassala state needs to strengthen its already existing systems which are basically of national origin and not to adopt MNP system.

## Situational analysis: (Comparison between Kassala &Sinnar states)

	Kassala	Sinnar
POPULATION	1789809	1285058
LOCALITIES	11	7
WCBA	481165	308413
PREGNANCY	73339	43691
MMR	1414	320
NMR	31	-
Hospital providing CEmOC	3	7
Hospital providing BEmOC	10	19
Obstetricians	11	11
Pediatricians	8	5
AHV	61	27
HV	19	23
NMW	23	40
VMWs	508	651
% VMWs trained in in-service	-% targeted	100%
training		

### **Objectives of the Tour:**

- 1-To exchange experiences in reproductive health.
- 2- To learn from, Mother Nile Project (MNP) successful interventions in Sinnar, and how how they manage and allocate resources.
- 3-To transfer Sinnar model successes in supervision, in-service training and community mobilization to Kassala state.:

#### Sites to be visited:

- Reproductive health &MNP offices(in Singa).
- Almo rafa health centre.
- Alsabonabi village.
- ToT-inservice training- steps (exhibition).
- -Sinnar MW school.

#### **Interventions to be observed:**

- MNP interventions.
- -Facility based supervision model.
- Community mobilization experiences.
- -TOT- in service training model.
- Midwifery school.

## **Key findings:**

#### 1- In supervision:

Facility based supervision is applied .In which, Village midwifes around the health centre distributed to the present supervisor (AHV or HV). Here, they should come regularly to the health centre (eg:twice per week). Consumables distributed to them regularly, with reporting of ANC, Delivery, and PNC cases to the supervisor. But there is no guarantee to continue such system, because VMWs are not recruited in the health system, no salaries neither incentive to them.

### 2-In –service training:

100% the state VMWs received in –service training.

#### 2- Community awareness activities:

- Mother meeting.
- Health Campaigns
- Community health promoters
- Delivery plan (box) reservoir
- -IEC materials

#### **4-Others:**

40 candidates in Sinnar MW school with the new two years-curriculum. The school rehabilitated and the training supported by the project.

**Findings :**( Comparison between Kassala&Sinnar states)

Comparing item	Sinnar model	Kassala
Separate offices constructed by the	Yes	No
project		
Supervisory system	Available and active in all	Available in all localities but
	localities.	active only in MDTF five
		localities.
Facility based supervision	active	Not active
Car for supervision	available	Not available
In service training	100% coverage	30% coverage
Mother meeting.	regular	Not regular
Community health promoters	available	Not available
Delivery plan (box)	Piloted	not
IEC materials	present	Needs more
JICA Project components	Mainly in-service training in	<ol> <li>In-service training in</li> </ol>
	all localities	tow localities for
		VMWs and Medical
		engineers.
		2- Procurement of
		equipment for 5
		hospitals
		3- Support of supervision
		4- Provision of low cost transport
		5- Coordinate with other
		health partners in EMONC conduction.

#### **Recommendations to improve the situation:**

- 1- Provision of supervision car at least two to cover all localities.
- 2- Increase the number of AHVs by training at least one batch basic training to better improve ANC, delivery care and post natal care.
- 3- Provision of incentive for supervisors whether at facility or locality level.
- 4- Close coordination with other health partners particularly in in- service training and supervision.
- 5- Recruitment of VMWs.
- 6- State government should be committed to provide the local component.
- 7- After each in-service training VMWs should be provided by necessary needs.
- 8- After each supervision visit VMWs should be provided by some of the necessary consumables in order to reduce the cost per delivery.
- 9- Provision of low cost transport.

## **ANNEXES:**

- Visitors' list
- -Photos





**Kassala- RH office members in Sinnar** 

Meeting sample, conducted with

## **MNP** targeted communities







In-service training demonstratio